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SPECIFICATIONS OF SIGNALLING SYSTEM No. 7

STAGES 2 AND 3 DESCRIPTION FOR THE Q3 INTERFACE – CUSTOMER ADMINISTRATION – INTEGRATED SERVICES DIGITAL NETWORK (ISDN) BASIC AND PRIMARY RATE ACCESS

ITU-T Recommendation Q.824.1

(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.824.1 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.

CONTENTS

SUMMARY

The purpose of this Recommendation is to provide the Stages 2 and 3 descriptions of the Q3 interface between a local exchange and the Telecommunications Management Network (TMN) for the support of configuration management functions in support of the customer administration of ISDN Basic and Primary access. 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 Basic and Primary Rate technology specific managed objects are defined.

Recommendation Q.824.1

STAGES 2 AND 3 DESCRIPTION FOR THE Q3 INTERFACE – CUSTOMER ADMINISTRATION – INTEGRATED SERVICES DIGITAL NETWORK (ISDN) BASIC AND PRIMARY RATE ACCESS

(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 technology specific 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 provides the Stage 2 and 3 descriptions for handling the Customer Administration for the ISDN technology based on the ISDN service capabilities descriptions provided in I.200, I.210, I.220 and I.230-Series Recommendations, 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

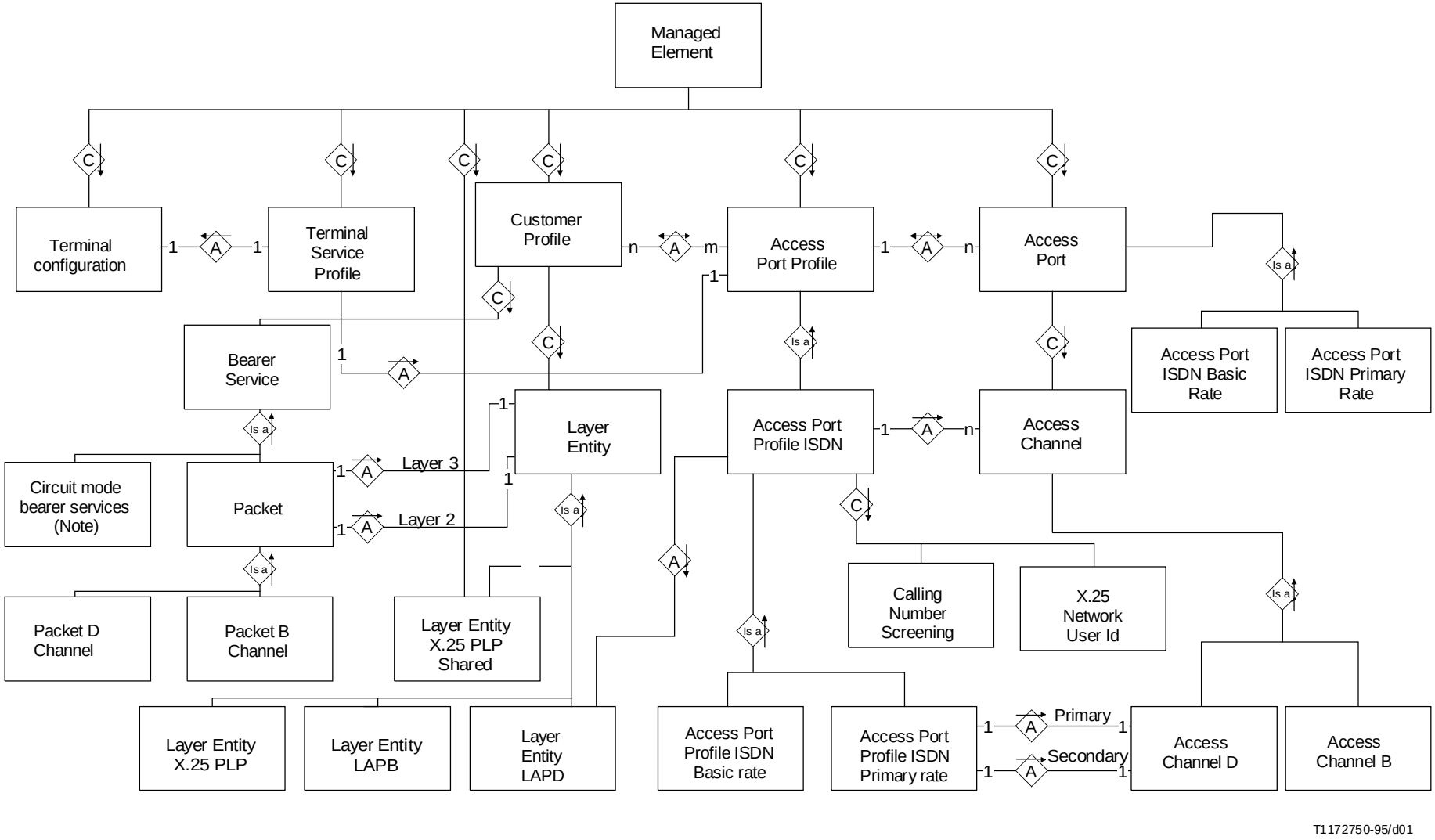
The following information model diagrams have been drawn for the purpose of clarifying the relations between the different object classes of Customer Administration. There are three different types of diagrams:

1) Entity-Relationship Models showing the relations 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, 2 and 3.



Defined in other Recommendations

Inherited name binding should not be used

NOTE – Circuit mode bearer services are used as shown in Recommendation Q.824.0 for the bearer services superclass.

FIGURE 1a/Q.824.1

Entity-Relationship Model – Part A

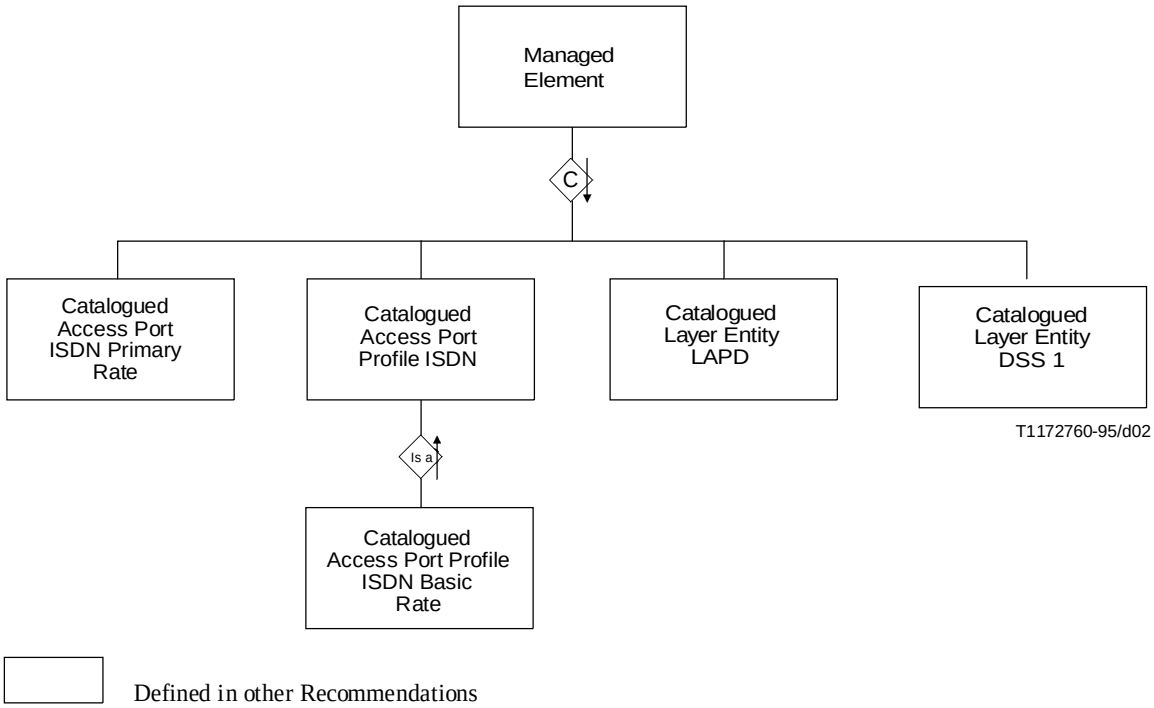


FIGURE 1b/Q.824.1

Entity-Relationship Model – Part B

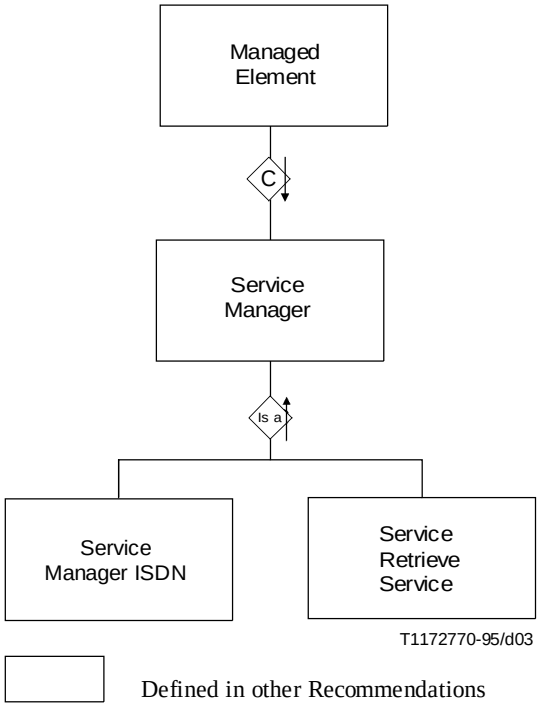


FIGURE 1c/Q.824.1

Entity-Relationship Model – Part C

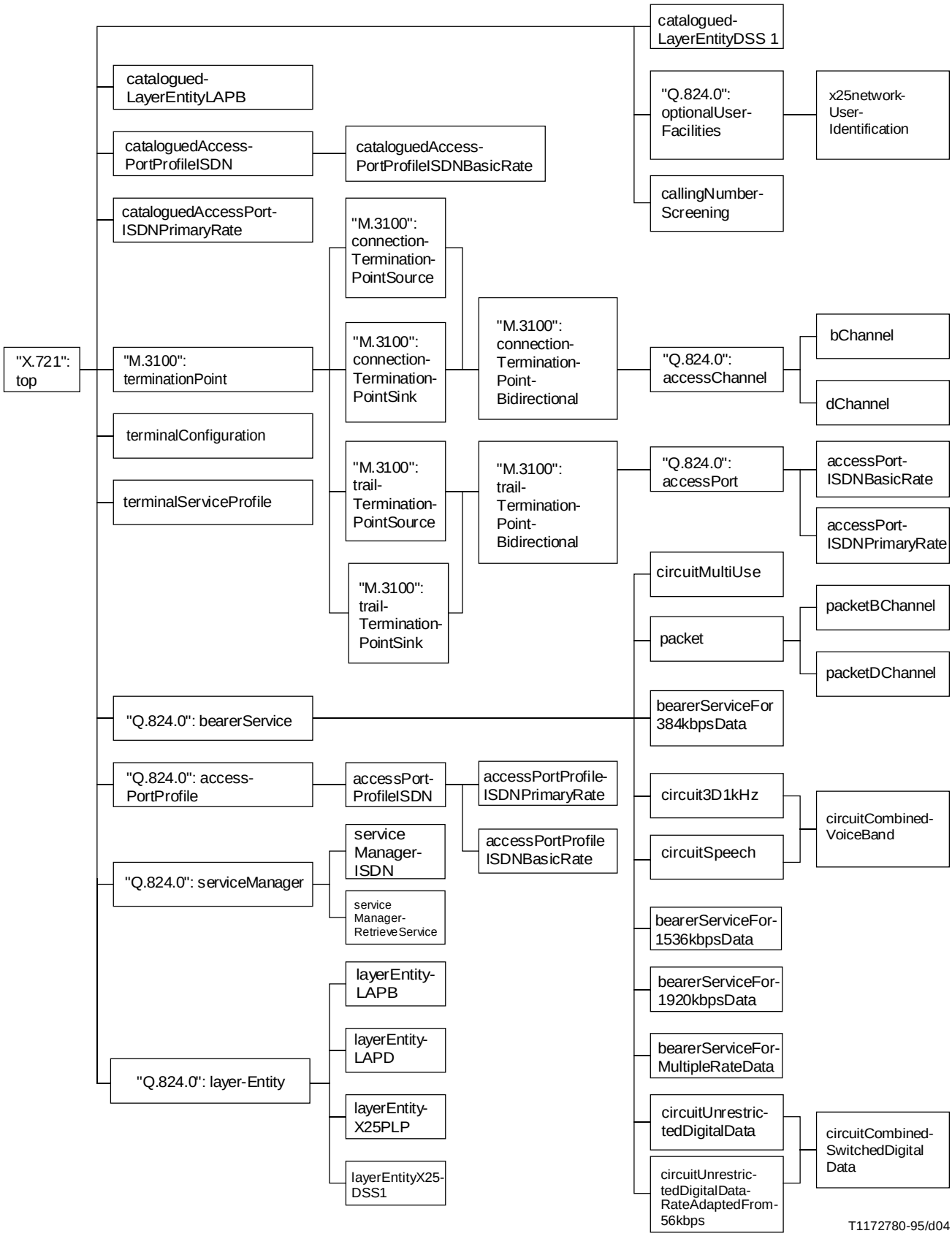
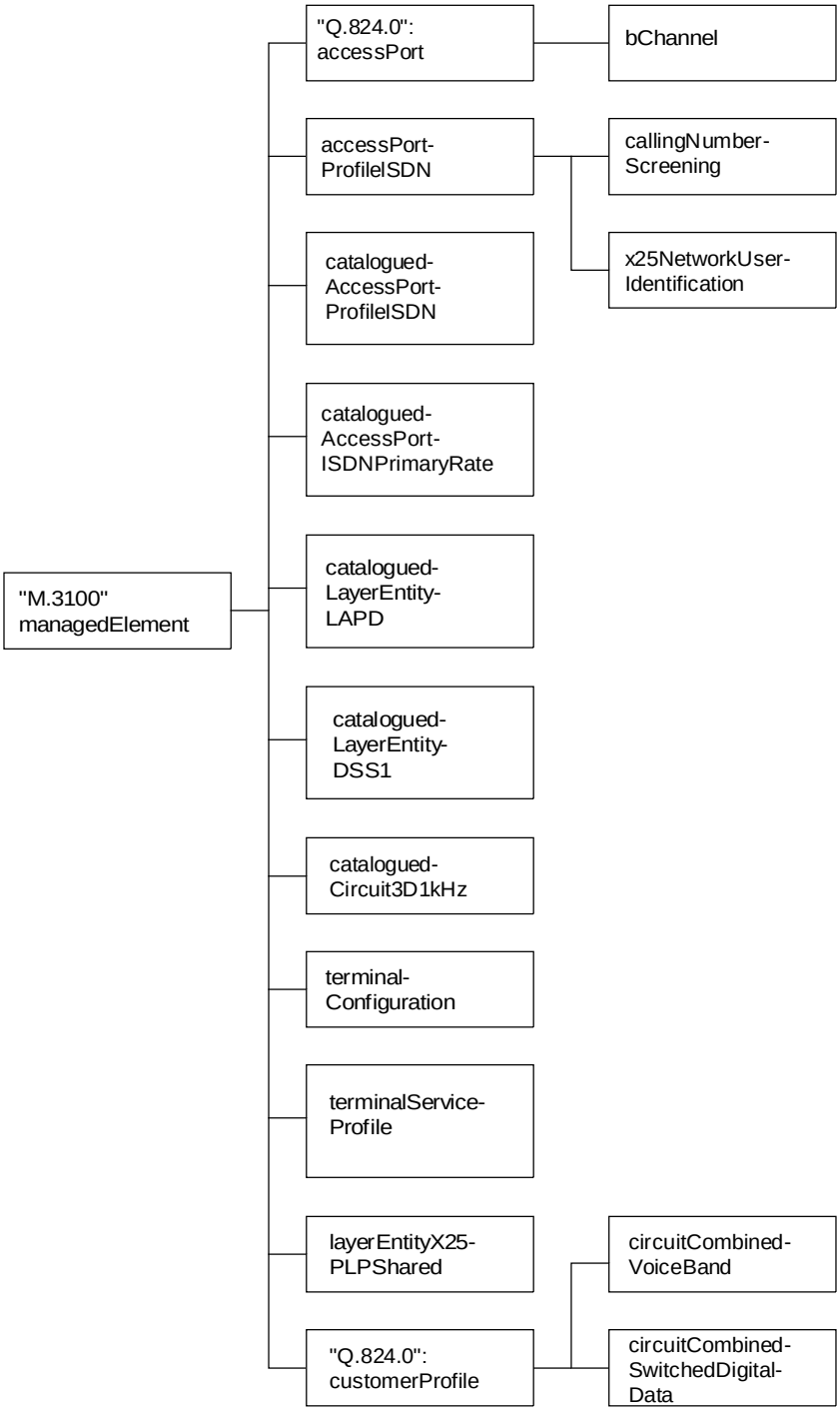


FIGURE 2/Q.824.1

Inheritance hierarchy



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

FIGURE 3/Q.824.1

Naming hierarchy

Entity-Relationship Models

The following Entity-Relationship Model describes particular relationships among the ISDN objects and other managed objects.

The E-R diagrams illustrate the intended way of applying the model. However, the E-R diagrams do not show all possible relationships supported by the model. The E-R diagrams show relationships in which managed objects may participate. Instances of a class or a subclass may not be eligible to participate in the indicated relationship. In case of containment this means that an alternate name binding will exist; in relationships implemented via pointers the pointer value will be null if an instance cannot or does not participate in the relationship.

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.231.1 (1988), *64 kbit/s Unrestricted, 8 kHz structured*.
- CCITT Recommendation I.231.2 (1988), *64 kbit/s, 8 kHz structured, usable for speech information transfer*.
- CCITT Recommendation I.231.3 (1988), *64 kbit/s, 8 kHz structured, usable for 3.1 kHz audio information transfer*.
- ITU-T Recommendation I.231.9 (1993), *Circuit Mode 64 kbit/s 8 kHz structured multi-use bearer service category*.
- CCITT Recommendation I.232 (1988), *Packet-mode bearer services categories*.
- CCITT Recommendation I.251.3 (1992), *Calling Line Identification Presentation*.
- 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 Q.921 (1993), *ISDN user-network interface – Data link layer specification*.
- ITU-T Recommendation Q.931 (1993), *Digital Subscriber Signalling System No. 1 (DSS 1) – ISDN user-network interface layer 3 specification for basic call control*.
- ITU-T Recommendation Q.932 (1993), *Digital Subscriber Signalling System No. 1 (DSS 1) – Generic procedures for the control of ISDN supplementary services*.
- 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.31 (1993), *Support of packet mode terminal equipment by an ISDN*.
- ITU-T Recommendation X.281 (1995), *Information technology – Elements of management information related to OSI physical layer*.

– ITU-T Recommendation X.282 (1995), *Elements of management information related to 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 – Systems 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 Access Object Classes

3.1 Access Channels

3.1.1 Access Channel B-Channel

```
bChannel      MANAGED OBJECT CLASS
DERIVED FROM      "ITU-T Rec. Q.824.0":accessChannel;
CHARACTERIZED BY
"CCITT Rec. M.3100":channelNumberPackage,
bChannelPkg       PACKAGE
          BEHAVIOUR
          bChannelBhv  BEHAVIOUR
          DEFINED AS "This object class represents the attributes related to a particular B-channel on an ISDN access
          port.";;;;
REGISTERED AS  {cAISDNObjectClass 1};
```

3.1.2 Access Channel D-Channel

```
dChannel      MANAGED OBJECT CLASS
DERIVED FROM      "ITU-T Rec. Q.824.0":accessChannel;
CHARACTERIZED BY
dChannelPkg       PACKAGE
          BEHAVIOUR
          dChannelBhv  BEHAVIOUR
          DEFINED AS  "This object class represents the attributes and characteristics related to a particular D-channel on
          an ISDN access port.";;;;
REGISTERED AS  {cAISDNObjectClass 2};
```

3.2 Access Ports

3.2.1 Access Port ISDN Basic Rate

```
accessPortISDNBasicRate       MANAGED OBJECT CLASS
DERIVED FROM      "ITU-T Rec. Q.824.0":accessPort;
CHARACTERIZED BY
accessPortISDNBasicRatePkg       PACKAGE
```

BEHAVIOUR
accessPortISDNBasicRateBhv BEHAVIOUR
DEFINED AS "This object class represents the access port termination supporting the ISDN Basic Rate service.";;;;
REGISTERED AS {cAISDNObjectClass 3};

3.2.2 Access Port ISDN Primary Rate

accessPortISDNPrimaryRate MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":accessPort;
CHARACTERIZED BY
accessPortISDNPrimaryRatePkg PACKAGE
BEHAVIOUR
accessPortISDNPrimaryRateBhv BEHAVIOUR
DEFINED AS "This object class represents the access port termination supporting the DSS 1 interface identifier in the Primary Rate ISDN service.";;;;
REGISTERED AS {cAISDNObjectClass 4};

3.3 Access Port Profiles

3.3.1 Access Port Profile ISDN

accessPortProfileISDN MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":accessPortProfile;
CHARACTERIZED BY
accessPortProfileISDNPkg PACKAGE
BEHAVIOUR
accessPortProfileISDNBhv BEHAVIOUR
DEFINED AS "This subclass of the access port profile adds ISDN specifics to the general access port profile class and is further subclassed into particular interface types (i.e. Basic and Primary). Only characteristics common to basic and primary are placed in this class.

This class provides the association between the B- and D-channels needed to support non-associated signalling. This type of association can be applied to any subclass of this class including Basic and Primary Rate access ports.

The supportedByAccessPortPtrList attribute inherited from the accessPortProfile managed object class may point to multiple accessPorts managed objects in this object and its subclasses.

The numberOfBChannels attribute controls the number of B-channel resources that the Access Port Profile ISDN has simultaneous access to. The value of this attribute must be equal to or less than the number of B-channel Access Channel object instances associated with the Access Port Profile. The default value of –1 for this indicates that all of the B-channel Access Channel object instances associated with the Access Port Profile are available.";;
ATTRIBUTES

accessChannelPtrList	**REPLACE-WITH-DEFAULT**
DEFAULT VALUE CAISDNAttributeModule.emptySet	**GET-REPLACE**
	ADD-REMOVE,
numberOfBChannels	**REPLACE-WITH-DEFAULT**
	DEFAULT VALUE
CAISDNAttributeModule.minusONE	**GET-REPLACE**
	ADD-REMOVE,
layer2LAPDEntityPtr	**GET,**
dChannelPacketDirectoryNumberList	**GET,**
dChannelPacketDefaultDirectoryNumber	**GET-REPLACE;;;**

CONDITIONAL PACKAGES

bearerServiceListPkg	**PRESENT IF "an instance supports it.",**
callReferencePkg	**PRESENT IF "if restricting the max numbers of call reference is enforced.",**
selectionProceduresPkg	**PRESENT IF "if supported by Administration.",**
nT2ISDNaccessPortProfilePkg	**PRESENT IF "NT2 type service is supported on the access port and the service is supported by the Administration.";**

REGISTERED AS {cAISDNObjectClass 5};

3.3.2 Access Port Profile ISDN Basic Rate

accessPortProfileISDNBasicRate MANAGED OBJECT CLASS
DERIVED FROM accessPortProfileISDN;
CHARACTERIZED BY
accessPortProfileISDNBasicRatePkg PACKAGE

BEHAVIOUR

accessPortProfileISDNBasicRateBhv BEHAVIOUR

DEFINED AS "This object associates the Access Port resources with service for ISDN Basic Rate. The Basic Rate access supporting this access port Profile may provide up to two 64 kbit/s B-channel and one 16 kbit/s D-channel service.";;;;

CONDITIONAL PACKAGES

deactivationCapabilitiesPkg PRESENT IF "deactivationCapabilities procedure is supported by Administration.",

activeTerminalListPkg PRESENT IF "an Administration supports it.",

numberOfDChannelLinksPkg PRESENT IF "if controlling the number of D-channel links on a per dChannel basis is supported by the Administration.";

REGISTERED AS {cAISDNObjectClass 6};

3.3.3 Access Port Profile ISDN Primary Rate

accessPortProfileISDNPrimaryRate MANAGED OBJECT CLASS

DERIVED FROM accessPortProfileISDN;

CHARACTERIZED BY

accessPortProfileISDNPrimaryRatePkg PACKAGE

BEHAVIOUR

accessPortProfileISDNPrimaryRateBhv BEHAVIOUR

DEFINED AS "This object associates the Access Port resources with services for the ISDN primary rate. The primary rate access supporting this access port profile can range from that of a single primary rate section up to that including many primary rate sections. In addition to the information channels and the D-channel, a secondary D-channel may also be supported in a backup arrangement (see Annex F/Q.931).";;

ATTRIBUTES

dChannelPrimaryPtr GET-REPLACE,

dChannelSecondaryPtr GET-REPLACE;;;

CONDITIONAL PACKAGES

REGISTERED AS {cAISDNObjectClass 7};

3.3.4 Calling Number Screening

callingNumberScreening MANAGED OBJECT CLASS

DERIVED FROM "CCITT Rec. X.721(1992)":top;

CHARACTERIZED BY

callingNumberScreeningPkg PACKAGE

BEHAVIOUR

callingNumberScreeningPackageBhv BEHAVIOUR

DEFINED AS "This object identifies characteristics of the Access Port Profile ISDN object class to be instantiated for screening as defined in Calling Line Supplementary Service I.251.3.

The attributes included in this object provide an interface with the capability of defining the set of Calling Party Valid Directory Numbers and a Calling Party Default Directory Number for the interface. It also provides a boolean attribute whose value determines whether or not calling party number screening is to be used by call originations.

The following table shows the possible combinations of the attributes for Calling Party Number Provision Necessary (CPNPN), Screening of Calling Party Number (SCPN), Calling Party Number Discard Control (CPNDC), and Calling Party Default Directory Number (CPDDN).

CPNPN indicates whether the calling party number must be provided by the calling user for call originations. If CPNPN is Y, then all call originations from the interface must provide a valid calling party number.

SCPN indicates whether calling party numbers received from the interface for call originations will be screened against the list of valid DNs for the interface.

CPNDC indicates whether failed-screening and not-screened calling party numbers are discarded from the calling information. If CPNDC is Y, then calling party numbers that are either not screened or fail screening are discarded.

CPDDN is the default DN (or DNs/bearer) that are used for call originations from this interface where the user does not provide a valid calling party number.

The scenario represented by the first row requires that the user provide valid calling party numbers (CPNPN = Y) for all call set-ups from the interface. User-provided calling party numbers will be screened for validity (SCPN = Y). If the calling party number fails screening, then it is discarded (in fact, the whole call is discarded so CPNDC really has a different meaning in this case). If the calling party number is not provided by the user then the call is cleared. CPDDN is not applicable in this scenario since the DN for the call must come from the user.

CPNPN	SCPN	CPNDC	CPDDN
Y	Y	Y	N/A
N	N	N	Required
N	N	Y	Required
N	Y	N	Required
N	Y	Y	Required

The second row represents a scenario where the user does not have to include the calling party number (CPNPN = N) for call set-ups from the interface. If the calling party number is provided by the user, it is not screened (SCPN = N) and it is not discarded (CPNDC = N). Any user-provided calling party number is passed as part of the call and may be delivered to the called party if the called party supports two-number delivery. CPDDN is required, and in fact, the default DN is used for every call origination from the interface.

The third row represents a scenario where the user does not have to include the calling party number (CPNPN = N) for call set-ups from the interface. If the calling party number is provided, it is not screened (SCPN = N) and discarded (CPNDC = Y). CPDDN is required, and in fact, the default DN is used for every call origination from the interface. Any user-provided calling party numbers are ignored (not screened and discarded).

The fourth row represents a scenario where the user does not have to include the calling party number (CPNPN = N) for call set-ups from the interface. If the calling party number is provided it will be screened for validity (SCPN = Y). If the user-provided calling party number passes screening then that DN is used for the call. CPDDN is required, and the default DN is used for call originations from the interface when the user-provided calling party number fails screening, or if the user does not provide a calling party number. Any user-provided calling party numbers that fail screening are also passed as part of the call (CPNDC = N) and may be delivered to the called party if the called party supports two-number delivery.

The fifth row represents a scenario where the user does not have to include the calling party number (CPNPN = N) for call set-ups from the interface. If the calling party number is provided it will be screened for validity (SCPN = Y). If the user-provided calling party number passes screening then that DN is used for the call. CPDDN is required, and the default DN is used for call originations from the interface when the user-provided calling party number fails screening, or if the user does not provide a calling party number. Any user-provided calling party numbers that fail screening are discarded (CPNDC = Y)."

```
;;

ATTRIBUTES
    callingNumberScreeningId                          GET
                                                      SET-BY-CREATE
    callingPartyValidDirectoryNumberList              GET,
    callingPartyNumberProvisionNecessary              REPLACE-WITH-DEFAULT
    DEFAULT VALUE CAISDNAttributeModule.false         GET-REPLACE,
    screenCallingPartyNumber                          REPLACE-WITH-DEFAULT
    DEFAULT VALUE CAISDNAttributeModule.true          GET-REPLACE,
    callingPartyNumberDiscardCtrl                     REPLACE-WITH-DEFAULT
    DEFAULT VALUE CAISDNAttributeModule.true          GET-REPLACE,
    callingPartyDefaultDirectoryNNumber               GET-REPLACE;
NOTIFICATIONS
    "CCITT Rec. X.721 | ISO/IEC 10165-2": attributeValueChange,
    "CCITT Rec. X.721 | ISO/IEC 10165-2": objectCreation,
    "CCITT Rec. X.721 | ISO/IEC 10165-2": objectDeletion;
        ;;
REGISTERED AS  {cAISDNObjectClass 8};
```

3.3.5 Network User Identification

```
x25NetworkUserIdentification        MANAGED OBJECT CLASS
DERIVED FROM        "ITU-T Rec. Q.824.0":optionalUserFacilities;
CHARACTERIZED BY
x25NetworkUserIdentificationPkg        PACKAGE
        BEHAVIOUR
        x25NetworkUserIdentificationBhv        BEHAVIOUR
        DEFINED AS  "This managed object contains attributes to provide information to the network for purposes of billing, security, network management, or to invoke subscribed facilities.";;
        ATTRIBUTES
            networkUserIdentificationREPLACE-WITH-DEFAULT
            DEFAULT VALUE CAOptionalUserFacilitiesModule.false                GET-REPLACE,
        networkUserIdentificationOverride                                     REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAOptionalUserFacilitiesModule.false                GET-REPLACE,
        networkUserIdentificationSelection                                    REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAOptionalUserFacilitiesModule.false                GET-REPLACE,
        networkUserIdentificationSupplement                                   REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAOptionalUserFacilitiesModule.false                GET-REPLACE,
        networkUserIdentificationUserValidate                                 REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAOptionalUserFacilitiesModule.false                GET-REPLACE;
        NOTIFICATIONS
            "CCITT Rec. X.721 | ISO/IEC 10165-2:1992": attributeValueChange,
            "CCITT Rec. X.721 | ISO/IEC 10165-2:1992": objectCreation,
            "CCITT Rec. X.721 | ISO/IEC 10165-2:1992": objectDeletion;;;
REGISTERED AS   {cAISDNObjectClass 9};
```

3.4 Layer Entities

3.4.1 Layer Entity LAPB

This class describes the customizable characteristics of LAPB protocol. That is, the characteristics whose values can be selected by the customer for his individual packet bearer service subscriptions. This class is subclassed from Layer Entity.

```
layerEntityLAPB        MANAGED OBJECT CLASS
DERIVED FROM        "ITU-T Rec. Q.824.0":layerEntity;
CHARACTERIZED BY
layerEntityLAPBPkg                PACKAGE
        BEHAVIOUR
        layerEntityLAPBBhv      BEHAVIOUR
        DEFINED AS  "This object class includes attributes applicable to X.25 layer 2 (LAPB), whose values are assignable on a Directory Number/Packet Data Bearer Service basis. Each instance of this object class represents a particular profile of attribute values and is associated with instances of the bearerServiceForPacketSwitchedDataobject class by pointers to instances of this object class.";;
        ATTRIBUTES
            "ITU-T Rec. X.282":sequenceModulus                                GET-REPLACE;;;
        CONDITIONAL PACKAGES
            x25DCETimersPkg        PRESENT IF "Timers are specified by subscribers.";
REGISTERED AS   {cAISDNObjectClass 10};
```

3.4.2 Layer Entity LAPD

```
layerEntityLAPD        MANAGED OBJECT CLASS
DERIVED FROM        "ITU-T Rec. Q.824.0":layerEntity;
CHARACTERIZED BY
layerEntityLAPDPkg                PACKAGE
        BEHAVIOUR
        layerEntityLAPDBhv      BEHAVIOUR
        DEFINED AS  "This class describes the customizable characteristics of the LAPD protocol that are used for user information purpose. These customizable characteristics are the values that can be selected by the customer for his individual bearer service subscriptions. This class is subclassed from Layer Entity. These attributes are not customizable when the LAPD instance is a signalling one.";;;;
```

```
CONDITIONAL PACKAGES
        automaticNegotiationPkg     PRESENT IF "parameter negotiation is supported.",
        linkSettingPkg              PRESENT IF "if a per link setting is supported.",
        optionalDeactivationPkg     PRESENT IF "the Administration supports deactivation on a LAPD basis.";
REGISTERED AS   {cAISDNObjectClass 11};
```

3.4.3 Layer Entity X.25 PLP

```
layerEntityX25PLP       MANAGED OBJECT CLASS
DERIVED FROM            "ITU-T Rec. Q.824.0":layerEntity ;
CHARACTERIZED BY
layerEntityX25PLPPkg                PACKAGE
        BEHAVIOUR
        layerEntityX25PLPBhv        BEHAVIOUR
        DEFINED AS  "This class describes the customizable characteristics of X.25 Layer 3 protocol that are used for
        signalling purpose and for user information purpose. These customizable characteristics are the values that can be
        selected by the customer for his individual packet bearer service subscriptions. This object class includes attributes
        applicable to X.25 layer 3 whose values are assignable on a Directory Number/Packet Data Bearer Service basis.
        Each instance of this object class represents a particular profile of attribute values.";;
        ATTRIBUTES
        dtEcompatibility
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.dte84                                GET-REPLACE,
        incomingMaxPacketSize                                               REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.size128                              GET-REPLACE,
        incomingWindowSize                                                  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.two                                  GET-REPLACE,
        incomingDefaultThruputClass                                         REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.baud9600                             GET-REPLACE,
        outgoingMaxPacketSize                                               REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.size128                              GET-REPLACE,
        outgoingWindowSize                                                  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.two                                  GET-REPLACE,
        outgoingDefaultThruputClass                                         REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.baud9600                             GET-REPLACE,
        "ITU-T Rec. X.283":onlineFacilityRegistration                       GET-REPLACE,
        "ITU-T Rec. X.283":extendedPacketSequencing                         GET-REPLACE,
        "ITU-T Rec. X.283":dBitModification                                 GET-REPLACE,
        "ITU-T Rec. X.283":packetRetransmission                             GET-REPLACE,
        "ITU-T Rec. X.283":nonStandardDefaultPacketSizes                    GET-REPLACE,
        "ITU-T Rec. X.283":nonStandardDefaultWindowSizes                    GET-REPLACE,
        "ITU-T Rec. X.283":flowControlParameterNegotiation                  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.false                                GET-REPLACE,
        "ITU-T Rec. X.283":throughputClassNegotiation                       REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.false                                GET-REPLACE,
        "ITU-T Rec. X.283":fastSelectAcceptance                             REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.false                        GET-REPLACE;;;
CONDITIONAL PACKAGES
maxCombinedThruputBChanPkg      PRESENT IF "the maxCombinedThruputDChanPkg is not present.",
maxCombinedThruputDChanPkg      PRESENT IF "the maxCombinedThruputBChanPkg is not present.";
REGISTERED AS   {cAISDNObjectClass 12};
```

3.4.4 Layer Entity X.25 PLP Shared

```
layerEntityX25PLPShared         MANAGED OBJECT CLASS
DERIVED FROM                    "ITU-T Rec. Q.824.0":layerEntity ;
CHARACTERIZED BY
layerEntityX25PLPSharedPkg              PACKAGE
        BEHAVIOUR
        layerEntityX25PLPSharedBhv      BEHAVIOUR
        DEFINED AS  " This class describes the customizable characteristics of X.25 Layer 3 protocol that are used for
        signalling purpose and for user information purpose. Instances of this object class are used to define commonly used
        parameter groupings that may be shared by multiple customers. This object class includes attributes applicable to
        X.25 layer 3 whose values are assignable on a Directory Number/Packet Data Bearer Service basis. Each instance of
        this object class represents a particular profile of attribute values .";;
```

```
        ATTRIBUTES
        dTECompatibilty
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.dte84                                GET-REPLACE,
        incomingMaxPacketSize REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.size128                              GET-REPLACE,
        incomingWindowSize REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.two                                  GET-REPLACE,
        incomingDefaultThruputClass REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.baud9600                             GET-REPLACE,
        outgoingMaxPacketSize REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.size128                              GET-REPLACE,
        outgoingWindowSize REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.two                                  GET-REPLACE,
        outgoingDefaultThruputClass REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.baud9600                             GET-REPLACE,
        "ITU-T Rec. X.283":onlineFacilityRegistration                       GET-REPLACE,
        "ITU-T Rec. X.283":extendedPacketSequencing                         GET-REPLACE,
        "ITU-T Rec. X.283":dBitModification                                 GET-REPLACE,
        "ITU-T Rec. X.283":packetRetransmission                             GET-REPLACE,
        "ITU-T Rec. X.283":nonStandardDefaultPacketSizes                    GET-REPLACE,
        "ITU-T Rec. X.283":nonStandardDefaultWindowSizes                    GET-REPLACE,
        "ITU-T Rec. X.283":flowControlParameterNegotiation                  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.false                                GET-REPLACE,
        "ITU-T Rec. X.283":throughputClassNegotiation                       REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.false                                GET-REPLACE,
        "ITU-T Rec. X.283":fastSelectAcceptance                             REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.false                                GET-REPLACE;;;
CONDITIONAL PACKAGES
maxCombinedThruputBChanPkg      PRESENT IF "the maxCombinedThruputDChanPkg is not present.",
maxCombinedThruputDChanPkg      PRESENT IF "the maxCombinedThruputBChanPkg is not present.";
REGISTERED AS   {cAISDNObjectClass 13};
```

4 Catalogued Access Object Classes

4.1 Catalogued Access Port ISDN Primary Rate

```
cataloguedAccessPortISDNPrimaryRate     MANAGED OBJECT CLASS
DERIVED FROM        "CCITT Rec. X.721(1992)": top;
CHARACTERIZED BY
cataloguedAccessPortISDNPrimaryRatePkg          PACKAGE
        BEHAVIOUR
        cataloguedAccessPortISDNPrimaryRateBhv  BEHAVIOUR
        DEFINED AS  "This object class contains the non-customizable attributes of the access port supporting the DSS 1
        interface of the Primary Rate ISDN service.";;
        ATTRIBUTES
            cataloguedAccessPortISDNPrimaryRateId                           GET SET-BY-CREATE,
            bitRateOfPrimaryRateInterface                                   GET-REPLACE;
        NOTIFICATIONS
            "CCITT Rec. X.721": objectCreation,
            "CCITT Rec. X.721": objectDeletion,
            "CCITT Rec. X.721": attributeValueChange;;;
REGISTERED AS   {cAISDNObjectClass 14};
```

4.2 Catalogued Access Port Profile ISDN

```
cataloguedAccessPortProfileISDN     MANAGED OBJECT CLASS
DERIVED FROM        "CCITT Rec. X.721(1992)": top;
CHARACTERIZED BY
cataloguedAccessPortProfileISDNPkg          PACKAGE
        BEHAVIOUR
        cataloguedAccessPortProfileISDNBhv  BEHAVIOUR
        DEFINED AS  "This object class defines the access port profile attributes that are common to the ISDN basic and
        primary rate interfaces that the Administration may manage on a per exchange basis.";;
        ATTRIBUTES
            cataloguedAccessPortProfileISDNId                               GET SET-BY-CREATE,
            channelSelection                                                GET-REPLACE;;;
```

```
        NOTIFICATIONS
            "CCITT Rec. X.721": objectCreation,
            "CCITT Rec. X.721": objectDeletion,
            "CCITT Rec. X.721": attributeValueChange;;;
REGISTERED AS  {cAISDNObjectClass 15};
```

4.3 Catalogued Access Port Profile ISDN Basic Rate

```
cataloguedAccessPortProfileISDNBasicRate        MANAGED OBJECT CLASS
DERIVED FROM        cataloguedAccessPortProfileISDN;
CHARACTERIZED BY
cataloguedAccessPortProfileISDNBasicRatePkg                PACKAGE
        BEHAVIOUR
        cataloguedAccessPortProfileISDNBasicRateBhv    BEHAVIOUR
        DEFINED AS  "This object class defines the access port profile ISDN basic rate interface characteristics that the
        Administration may manage on a per exchange basis.";;
        ATTRIBUTES
            numberOfDChannelLinks                                                    GET-REPLACE;
        NOTIFICATIONS
            "CCITT Rec. X.721": objectCreation,
            "CCITT Rec. X.721": objectDeletion,
            "CCITT Rec. X.721": attributeValueChange;;;
REGISTERED AS  {cAISDNObjectClass 16};
```

4.4 Catalogued Layer Entity DSS 1

```
cataloguedLayerEntityDSS1        MANAGED OBJECT CLASS
DERIVED FROM        "CCITT Rec. X.721": top;
CHARACTERIZED BY
cataloguedLayerEntityDSS1Pkg                PACKAGE
        BEHAVIOUR
        cataloguedLayerEntityDSS1Bhv    BEHAVIOUR
        DEFINED AS  "This object class represents the Layer 3 signalling parameters that are provided for customer
        service on a switch-wide basis.";;;
        ATTRIBUTES
            cataloguedLayerEntityDSS1Id                                          GET SET-BY-CREATE,
            dChannelT301                                                         GET-REPLACE,
            dChannelT303                                                         GET-REPLACE,
            dChannelT304                                                         GET-REPLACE,
            dChannelT305                                                         GET-REPLACE,
            dChannelT306                                                         GET-REPLACE,
            dChannelT307                                                         GET-REPLACE,
            dChannelT308                                                         GET-REPLACE,
            dChannelT309                                                         GET-REPLACE,
            dChannelT310                                                         GET-REPLACE,
            dChannelT312                                                         GET-REPLACE,
            dChannelT314                                                         GET-REPLACE,
            dChannelT316                                                         GET-REPLACE,
            dChannelT317                                                         GET-REPLACE,
            dChannelT320                                                         GET-REPLACE,
            dChannelT321                                                         GET-REPLACE,
            dChannelT322                                                         GET-REPLACE,
            dChannelT330                                                         GET-REPLACE;
        NOTIFICATIONS
            "CCITT Rec. X.721": objectCreation,
            "CCITT Rec. X.721": objectDeletion,
            "CCITT Rec. X.721": attributeValueChange;;;
REGISTERED AS  {cAISDNObjectClass 17};
```

4.5 Catalogued Layer Entity LAPD

```
cataloguedLayerEntityLAPD        MANAGED OBJECT CLASS
DERIVED FROM        "CCITT Rec. X.721(1992)": top;
CHARACTERIZED BY
cataloguedLayerEntityLAPDPkg                PACKAGE
```

BEHAVIOUR
cataloguedLayerEntityLAPDBhv BEHAVIOUR
DEFINED AS "The catalogued LAPD layer entity object class is a class of managed objects that represents characteristics of the LAPD protocol that are applicable to all customers on the switch that have ISDN access. This class also provides the ability for an Administration to set LAPD characteristics for all ISDN customer accesses without the need for individual LAPD entity settings.";;
ATTRIBUTES
cataloguedLayerEntityLAPDId GET,
interfaceType GET,
linkLevelWindowSize GET-REPLACE,
maxBitsPerInformationFrame GET-REPLACE,
maxTransmissionAttempts GET-REPLACE;;;
NOTIFICATIONS
"CCITT Rec. X.721": objectCreation,
"CCITT Rec. X.721": objectDeletion,
"CCITT Rec. X.721": attributeValueChange;;;
REGISTERED AS {cAISDNObjectClass 18};

5 ISDN Terminal Object Classes

5.1 Terminal Configuration

terminalConfiguration MANAGED OBJECT CLASS
DERIVED FROM "CCITT Rec. X.721": top;
CHARACTERIZED BY
terminalConfigurationPkg PACKAGE
BEHAVIOUR
terminalConfiguratonBhv BEHAVIOUR
DEFINED AS "The Terminal Configuration managed object class is a class of managed objects that represents instances of ISDN terminal push button and indicator lamp configurations. This managed object class includes the attributes by which the physical Feature Activator (e.g. buttons) and Feature Indicator (e.g. lamps) at the user terminal are functionally assigned. This object class may effectively represent a shared library or unique non-shared object depending on this service.";;
ATTRIBUTES
terminalConfigurationId GET SET-BY-CREATE,
featureActivatorAllDirectoryNumber GET-REPLACE,
featureActivatorsPerDirectoryNumber GET-REPLACE,
featureActivatorsPerStopHunt GET-REPLACE,
featureActivatorsPerHuntMakeBus GET-REPLACE,
featureIndicatorsAllDirectoryNumber GET-REPLACE,
featureIndicatorsPerDirectoryNumber GET-REPLACE,
featureIndicatorsPerStopHunt GET-REPLACE,
featureIndicatorsPerHuntMakeBusy GET-REPLACE;
NOTIFICATIONS
"CCITT Rec. X.721 | ISO/IEC 10165-2 ": attributeValueChange,
"CCITT Rec. X.721 | ISO/IEC 10165-2": objectCreation,
"CCITT Rec. X.721 | ISO/IEC 10165-2": objectDeletion;;;
REGISTERED AS {cAISDNObjectClass 19};

5.2 Terminal Service Profile

terminalServiceProfile MANAGED OBJECT CLASS
DERIVED FROM "CCITT Rec. X.721(1992)": top;
CHARACTERIZED BY
terminalServiceProfilePkg PACKAGE
BEHAVIOUR
terminalServiceProfileBhv BEHAVIOUR
DEFINED AS "The Terminal Service Profile (TSP) object class is a class of managed objects that represents instances of Terminal Service Profiles for self-initializing ISDN terminals on a Basic Rate Interface (BRI). The TSP is a grouping of service profile parameters for one or more terminals on a BRI. Each terminal on a BRI must be initialized with a unique identifier called a Service Profile Identifier (SPID). The SPID uniquely identifies the ISDN terminal to the switch and to the supporting Operations System (OS). See Annex A/Q.932 for details.

The numberOfBChannels attribute limits the B-channel resources that the terminalServiceProfile can use at any point in time. The value of the attribute in this object must be equal to or less than the value of the numberOfBChannels attribute in the associated accessPortProfileIsdn object instance. The default value of –1 for this attribute indicates that all of the accessChannel object instances associated with the accessPortProfileIsdn object are available for use.";;

ATTRIBUTES

terminalServiceProfileId	**GET SET-BY-CREATE,**
"Q.824.0":accessPortProfilePtr	**GET-REPLACE,**
directoryNumberAppearanceIdentifierList	**GET-REPLACE ADD-REMOVE,**
directoryNumberReference	**GET-REPLACE,**
numberOfBChannels	**REPLACE-WITH-DEFAULT**
DEFAULT VALUE CAISDNModule.minusOne	**GET-REPLACE,**
terminalConfigurationPtr	**GET-REPLACE,**
terminalLimit	**REPLACE-WITH-DEFAULT**
DEFAULT VALUE CAISDNModule.one	**GET-REPLACE,**
tspid	**GET-REPLACE;**

NOTIFICATIONS

"CCITT Rec. X.721 | ISO/IEC 10165-2": attributeValueChange,
"CCITT Rec. X.721 | ISO/IEC 10165-2": objectCreation,
"CCITT Rec. X.721 | ISO/IEC 10165-2": objectDeletion;;;

REGISTERED AS {cAISDNObjectClass 20};

6 Bearer Service Object Classes

6.1 Bearer Services

6.1.1 Bearer Service For 384 kbit/s Data

bearerServiceFor384kbpsData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. 824.0":bearerService;
CHARACTERIZED BY
bearerServiceFor384kbpsDataPkg PACKAGE
BEHAVIOUR
bearerServiceFor384kbpsDataBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Circuit-Mode, 384 kbit/s Unrestricted Digital Transmission, 8000 Hz Structured, Demand, Point-To-Point, and Bidirectional Symmetric bearer service. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.6. A call using this bearer service must use channels from single primary rate interfaces as modeled by Access Port.

The numberOfBChannels attribute inherited from the bearerService superclass must indicate either all B-channels are available (–1) or must be a mutiple of 6 to indicate that only some of the underlying B-channels may be used for this bearer service. If all B-channels are indicated by the numberOfBChannels attribute, then on each related Access Port largest mutiple of 6 less than or equal to the total number of B-channels on that AccessPort may be used for this service. For example, if this service is associated with two AccessPort objects, one with 23 B-channels and the other with 24 B-channels, then a –1 in the numberOfBChannels attribute indicates that 18 B-channels may be used from the first AccessPort and that 24 may be used from the second AccessPort.";;
ATTRIBUTES
assignmentOfTimeslots GET-REPLACE;;;
CONDITIONAL PACKAGES
bearerServiceFor384kbpsDataPrimaryICPkg PRESENT IF "an instance supports it.";
REGISTERED AS {cAISDNObjectClass 21};

6.1.2 Bearer Service For 1536 kbit/s Data

bearerServiceFor1536kbpsData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. 824.0":bearerService;
CHARACTERIZED BY
bearerServiceFor1536kbpsDataPkg PACKAGE
BEHAVIOUR
bearerServiceFor1536kbpsDataBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Circuit-Mode, 1536 kbit/s Unrestricted Digital Transmission, 8000 Hz Structured, Demand, Point-To-Point, and Bidirectional Symmetric bearer service. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.7. A call using this bearer service must use channels from a single Access Port.

The numberOfBChannels attribute inherited from the bearerService superclass must indicate either all B-channels are available (–1) or must be a mutiple of 24 to indicate that only some of the underlying B-channels may be used for this bearer service. If all B-channels are indicated by the numberOfBChannels attribute, then on each related Access Port the largest mutiple of 24 less than or equal to the total number of B-channels on each AccessPort may be used for this service. For example, if this service is associated with two AccessPort objects, one with 23 B-channels and the other with 24 B-channels, then a –1 in the numberOfBChannels attribute indicates that 24 B-channels from the second Access Port may be used (and no B-channels may be used from the Access Port with only 23 B-channels).";;;;

CONDITIONAL PACKAGES

bearerServiceFor1536kbpsDataPrimaryICPkg PRESENT IF "an instance supports it.",

assignmentOfTimeslotsPkg PRESENT IF "2Mb/sec interfaces are supported and an instance supports it.";

REGISTERED AS {cAISDNObjectClass 22};

6.1.3 Bearer Service For 1920 kbit/s Data

bearerServiceFor1920kbpsData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. 824.0":bearerService;

CHARACTERIZED BY

bearerServiceFor1920kbpsDataPkg PACKAGE

BEHAVIOUR

bearerServiceFor1920kbpsDataBhv BEHAVIOUR

DEFINED AS "This object class represents the characteristics of the Circuit-Mode, 1920 kbit/s Unrestricted Digital Transmission, 8000 Hz Structured, Demand, Point-To-Point, and Bidirectional Symmetric bearer service. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.8. A call using this bearer service must use channels from a single Access Port.";;;;

CONDITIONAL PACKAGES

bearerServiceFor1920kbpsDataPrimaryICPkg PRESENT IF "an instance supports it.";

REGISTERED AS {cAISDNObjectClass 23};

6.1.4 Bearer Service For Multiple-Rate Data

bearerServiceForMuliple-RateData MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. 824.0":bearerService;

CHARACTERIZED BY

bearerServiceForMultipleRateDataPkg PACKAGE

BEHAVIOUR

bearerServiceForMultipleRateDataBhv BEHAVIOUR

DEFINED AS "This object class represents the characteristics of the Circuit-Mode, Multiple-Rate Unrestricted Digital Transmission, 8000 Hz Structured, Demand, Point-To-Point, and Bidirectional Symmetric bearer service. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.10. A call using this bearer service must use channels from single physical interfaces as modeled by Access Port.

The numberOfBChannels attribute inherited from the bearerService superclass must indicate either all B-channels are available (–1) or must indicate the maximum number of B-channels that may be used for this service.";;

ATTRIBUTES

assignmentOfTimeslots GET-REPLACE;;;

CONDITIONAL PACKAGES

bearerServiceForMultipleRateDataPrimaryICPkg PRESENT IF "an instance supports it.";

REGISTERED AS {cAISDNObjectClass 24};

6.1.5 Circuit 3.1 kHz

The 3.1 kHz audio bearer service object class specifies the characteristics of ISDN audio services.

circuit3D1kHz MANAGED OBJECT CLASS

DERIVED FROM "ITU-T Rec. Q.824.0":bearerService;

CHARACTERIZED BY

circuit3D1kHzPkg PACKAGE

BEHAVIOUR

circuit3D1KHzBhv BEHAVIOUR

DEFINED AS "This object class and its superclass, bearerService, represent the characteristics of the Circuit-Mode, 64 kbit/s, 8 kHz Structured, Usable for Circuit 3.1 kHz Information Transfer bearer service. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.3.";;;;

CONDITIONAL PACKAGES

bearerServiceForAudioICPkg PRESENT IF "inter-exchange carrier subscription is supported.",

networkProvidedTonePkg PRESENT IF "Network Provided Tone subscription is supported.";

REGISTERED AS {cAISDNObjectClass 25};

6.1.6 Circuit Combined Switched Digital Data

This object class is a subclass derived from the Bearer Service Circuit Unrestricted Digital Data Rate Adapted From 56 kbit/s and Bearer Service Circuit Unrestricted Digital Data. The object class thereby represents the combined characteristics of both of its superclasses. An instance of this object class cannot coexist with an instance of either its superclasses for the same directory number assignment.

circuitCombinedSwitchedDigitalData MANAGED OBJECT CLASS

DERIVED FROM

circuitUnrestrictedDigitalData,

circuitUnrestrictedDigitalData;

CHARACTERIZED BY

circuitCombinedSwitchedDigitalDataPkg PACKAGE

BEHAVIOUR

circuitCombinedSwitchedDigitalDataBhv BEHAVIOUR

DEFINED AS "This object class represents a grouping of the following bearer services:

- **Circuit-Mode, 64 kbit/s Unrestricted Digital Data Transmission, 8 kHz Structured bearer service,**
- **Circuit-Mode, 64 kbit/s Unrestricted Digital Data Transmission adapted from 56 kbit/s, 8 kHz Structured, Demand, Point-to-Point, and Bidirectional Symmetric bearer service.**

The grouping of these circuit-mode bearer services is required when the services choice or resources allocation are the same whether the capability is 64 kbit/s or adapted 56 kbit/s. This object class is a subclass of the bearer Service Restricted Data and bearer Service unrestricted Data object classes and inherits the characteristics and behaviours from both superclasses.";;;;

REGISTERED AS {cAISDNObjectClass 26};

6.1.7 Circuit Combined Voice Band

This object class is a subclass derived from the Bearer Service Circuit 3.1 kHz and Bearer Service Speech object classes by multiple inheritance. The object class thereby represents the combined characteristics of both of its superclasses. An instance of this object class cannot coexist with an instance of either its superclasses for the same directory number assignment.

circuitCombinedVoiceBand MANAGED OBJECT CLASS

DERIVED FROM

circuit3D1kHz,

circuitSpeech;

CHARACTERIZED BY

circuitCombinedVoiceBandPkg PACKAGE

BEHAVIOUR

circuitCombinedVoiceBandBhv BEHAVIOUR

DEFINED AS "This object class represents a grouping of the characteristics of the following bearer services:

- **Circuit-Mode, 64 kbit/s, 8 kHz Structured, Usable for 3.1 kHz Audio Information Transfer bearer services.**
- **Circuit-Mode, 64 kbit/s, 8 kHz Structured, Usable for Speech Demand, Point-to-Point, and Bidirectional Symmetric bearer service.**

These bearer services are identified in I.231 and I.232. The grouping of these circuit-mode bearer services is required when the services choice or resources allocation are the same whether the capability is 3.1 KHz or speech. This object class is a subclass of thecircuitSpeech and bearer Service3kHzAudio superclasses and inherits the characteristics and behaviours from both superclasses.";;;;

REGISTERED AS {cAISDNObjectClass 27};

6.1.8 Circuit Multi-Use

The multi-use bearer Service object class specifies the characteristics of ISDN audio services.

circuitMultiUse MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":bearerService;
CHARACTERIZED BY
circuitMultiUsePkg PACKAGE
BEHAVIOUR
circuitMultiUseBhv BEHAVIOUR
DEFINED AS "This object class and its superclass, bearerService, represent the characteristics of the Circuit-Mode, 64 kbit/s, 8 kHz Structured, Usable for MultiUse Information Transfer bearer service. This bearer service and associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.9.";;;;
CONDITIONAL PACKAGES
networkProvidedTonePkg PRESENT IF "Network Provided Tone Subscription is supported.",
circuitMultiUsePrimaryICPkg PRESENT IF "inter-exchange carrier subscription is supported.";
REGISTERED AS {cAISDNObjectClass 28};

6.1.9 Bearer Service For 64 kbit/s Data (Unrestricted) Rate Adapted From 56 kbit/s

circuitUnrestrictedDigitalDataRateAdaptedFrom56 kbit/s MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. 824.0":bearerService;
CHARACTERIZED BY
circuitUnrestrictedDigitalDataRateAdaptedFrom56kbpsPkg PACKAGE
BEHAVIOUR
circuitUnrestrictedDigitalDataRateAdaptedFrom56kbpsBhv BEHAVIOUR
DEFINED AS "This object represents the characteristics of the Circuit-Mode, 64 kbit/s Unrestricted bearer service as defined in I.231 and I.232 rate adapted to 56 kbit/s according to V.110.";;;;
CONDITIONAL PACKAGES
circuitUnrestrictedDigitalDataPrimaryICPkg PRESENT IF "inter-exchange carrier subscription is supported.";
REGISTERED AS {cAISDNObjectClass 29};

6.1.10 Circuit Speech

The Circuit speech bearer service object class specifies the characteristics of ISDN speech services.

circuitSpeech MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":bearerService;
CHARACTERIZED BY
circuitSpeechPkg PACKAGE
BEHAVIOUR
circuitSpeechBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Circuit-Mode, 64 kbit/s, 8 kHz Structured, Usable for Speech bearer service. This bearer service, and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.231.2. This bearer service is intended to support network characteristics appropriate for speech, such as 4-wire analog transmission, low bit rate voice encoding, and Time Assignment Speech Interpolation (TASI) techniques.";;;;
CONDITIONAL PACKAGES
networkProvidedTonePkg PRESENT IF "Network Provided Tone Subscription is supported.",
circuitSpeechPrimaryICPkg PRESENT IF "inter-exchange carrier subscription is supported.";
REGISTERED AS {cAISDNObjectClass 30};

6.1.11 Circuit Unrestricted Digital Data

The unrestricted digital data bearer service object class specifies the characteristics of ISDN circuit mode data calls using unrestricted digital facilities.

circuitUnrestrictedDigitalData MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":bearerService;
CHARACTERIZED BY
circuitUnrestrictedDigitalDataPkg PACKAGE
BEHAVIOUR
circuitUnrestrictedDigitalDataBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Circuit-Mode, 64 kbit/s Unrestricted Digital Transmission, 8 kHz Structured bearer service. This bearer service and the associated values for the I.210 Transfer and Access attributes, are identified in I.231.1.";;;;

CONDITIONAL PACKAGES
circuitUnrestrictedDigitalDataPrimaryICPkg PRESENT IF "inter-exchange carrier subscription is supported.";
REGISTERED AS {cAISDNObjectClass 31};

6.1.12 Packet

The Packet bearer service object class specifies the characteristics of ISDN Packet services.

packet MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":bearerService;
CHARACTERIZED BY
packetPkg PACKAGE
BEHAVIOUR
packetBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Packet bearer service. The transmission rate of the packet mode service is defined by the associated B- and D-channel characteristics. This bearer service and the associated values for the I.210 Transfer and Access attributes, are identified in I.232. This class is not instantiated, only its subclasses are instatiated.";;
ATTRIBUTES
notificationClass GET-REPLACE,
layer2InfoEntityPtr GET-REPLACE,
layer3InfoEntityPtr GET-REPLACE;;;
REGISTERED AS {cAISDNObjectClass 32};

6.1.13 Packet B-channel

packetBChannel MANAGED OBJECT CLASS
DERIVED FROM packet;
CHARACTERIZED BY
packetBChannelPkg PACKAGE
BEHAVIOUR
packetPacketBChannelBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Packet bearer service running over a B-channel. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.232.";;
ATTRIBUTES
semiPermAccessPacketHandlerDefaultDN GET-REPLACE;;;
REGISTERED AS {cAISDNObjectClass 33};

6.1.14 Packet D-Channel

packetDChannel MANAGED OBJECT CLASS
DERIVED FROM packet;
CHARACTERIZED BY
packetDChannelPkg PACKAGE
BEHAVIOUR
packetDChannelBhv BEHAVIOUR
DEFINED AS "This object class represents the characteristics of the Packet bearer service running over a D-channel. This bearer service and the associated values for the I.210 Information Transfer and Access attributes, are identified in I.232.";;;;
REGISTERED AS {cAISDNObjectClass 34};

7 Operations Support Managed Object Classes

7.1 Service Manager ISDN

serviceManagerISDN MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":serviceManager;
CHARACTERIZED BY
serviceManagerISDNPkg PACKAGE
BEHAVIOUR
serviceManagerISDNBhv BEHAVIOUR
DEFINED AS "The serviceManagerISDN will perform the actions that establish and remove ISDN accesses, services and terminals. In addition, the serviceManagerISDN will perform actions that will change a directory number.";;

ACTIONS
establishISDNAccess invalidReferenceError,
removeISDNAccess invalidReferenceError,
establishISDNService invalidReferenceError,
removeISDNService invalidReferenceError,
changeDirectoryNumber invalidReferenceError;;;
CONDITIONAL PACKAGES
manageISDNTerminalPackage PRESENT IF "supported by Administration.";
REGISTERED AS {cAISDNObjectClass 35};

7.2 Service Manager Retrieve Service

serviceManagerRetrieveService MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Rec. Q.824.0":serviceManager;
CHARACTERIZED BY
serviceManagerRetrieveServicePkg PACKAGE
BEHAVIOUR
serviceManagerRetrieveServiceBhv BEHAVIOUR
DEFINED AS "The serviceManagerCustService is service independent managed object whose action will retrieve all service information related to a given customer service.";;
ACTIONS
retrieveService invalidReferenceError;;;
REGISTERED AS {cAISDNObjectClass 36};

8 Package Templates

8.1 Active Terminal List

activeTerminalListPkg PACKAGE
BEHAVIOUR activeTerminalListPkgBhv BEHAVIOUR
DEFINED AS "This package provides information on the terminal currently active on the access port profile. The activeTerminalList attribute is a get only attribute that is set when a terminal initializes on the access port profile. For terminals with fixed TEI, the TEI is recorded when the terminal is in the Mutliframe Established state. For automatic terminals, the TEI is set when the terminals enter the TEI assigned state. For fully initializing terminals (those using the optional procedures of Q.932), the SPID and USID may also be recorded in this attribute when the terminal initializes.";;
ATTRIBUTES
activeTerminalList GET;
REGISTERED AS {cAISDNPackage 1};

8.2 Assignment Of Timeslots

assignmentOfTimeslotsPkg PACKAGE
BEHAVIOUR
assignmentOfTimeslotsBhv BEHAVIOUR
DEFINED AS "This package provides an attribute whose value is used to determine how wideband channel selection is done."
ATTRIBUTES
assignmentOfTimeslots GET-REPLACE;
REGISTERED AS {cAISDNPackage 2};

8.3 Automatic Negotiation

automaticNegotiationPkg PACKAGE
ATTRIBUTES
automaticXIDnotification GET-REPLACE,
signallingParameterNegotiation GET-REPLACE;
REGISTERED AS {cAISDNPackage 3};

8.4 Bearer Service For Audio IC

bearerServiceForAudioICPkg PACKAGE
ATTRIBUTES
circuitAudioPrimaryIC GET-REPLACE;
REGISTERED AS {cAISDNPackage 4};

8.5 Bearer Service For 384 kbit/s Data Primary IC

bearerServiceFor384kbpsDataPrimaryICPkg PACKAGE
BEHAVIOUR
bearerServiceFor384kbpsDataPrimaryICPkgBhv BEHAVIOUR
DEFINED AS "This package provides an attribute whose value identifies the Inter-Exchange Carrier assigned to the subscriber service this object represents.";;
ATTRIBUTES
bearerServiceFor384kbpsDataPrimary IC GET-REPLACE;
REGISTERED AS {cAISDNPackage 5};

8.6 Bearer Service For 1536 kbit/s Data Primary IC

bearerServiceFor1536kbpsDataPrimaryICPkg PACKAGE
BEHAVIOUR
bearerServiceFor1536kbpsDataPrimaryICPkgBhv BEHAVIOUR
DEFINED AS "This package provides an attribute whose value identifies the Inter-Exchange Carrier assigned to the subscriber service this object represents.";;
ATTRIBUTES
bearerServiceFor1536kbpsDataPrimary IC GET-REPLACE;
REGISTERED AS {cAISDNPackage 6};

8.7 Bearer Service For 1920 kbit/s Data Primary IC

bearerServiceFor1920kbpsDataPrimaryICPkg PACKAGE
BEHAVIOUR
bearerServiceFor1920kbpsDataPrimaryICPkgBhv BEHAVIOUR
DEFINED AS "This package provides an attribute whose value identifies the Inter-Exchange Carrier assigned to the subscriber service this object represents.";;
ATTRIBUTES
bearerServiceFor1920kbpsDataPrimary IC GET-REPLACE;
REGISTERED AS {cAISDNPackage 7};

8.8 Bearer Service For Multiple-Rate Data Primary IC

bearerServiceForMultipleRateDataPrimaryICPkg PACKAGE
BEHAVIOUR
bearerServiceForMultipleRateDataPrimaryICPkgBhv BEHAVIOUR
DEFINED AS "This package provides an attribute whose value identifies the Inter-Exchange Carrier assigned to the subscriber service this object represents.";;
ATTRIBUTES
bearerServiceForMultipleRateDataPrimary IC GET-REPLACE;
REGISTERED AS {cAISDNPackage 8};

8.9 Bearer Service List

bearerServiceListPkg PACKAGE
ATTRIBUTES
bearerServiceList GET-REPLACE
ADD-REMOVE;
REGISTERED AS {cAISDNPackage 9};

8.10 Call Reference

callReferencePkg PACKAGE
BEHAVIOUR
callReferencePkgBhv BEHAVIOUR
DEFINED AS "The maxNumberOfCallReference attribute indicates the maximum number of the simultaneous layer 3 connections for signalling (SAPI = 0 for all TEIs on this Access Port Profile). It must be at least as large as the largest callReferenceBusyLimit attribute (in ISDN Circuit Service Set managed object contained in the Bearer Services).";;
ATTRIBUTES
maxNumberOfCallReference GET-REPLACE;
REGISTERED AS {cAISDNPackage 10};

8.11 Circuit Speech Primary IC

```
circuitSpeechPrimaryICPkg          PACKAGE
        ATTRIBUTES
            circuitSpeechPrimaryIC                                  GET-REPLACE;
REGISTERED AS   {cAISDNPackage 11};
```

8.12 Circuit Multi-Use Primary IC

```
circuitMultiUsePrimaryICPkg        PACKAGE
        ATTRIBUTES
            circuitMultiUsePrimaryIC                                GET-REPLACE;
REGISTERED AS   {cAISDNPackage 12};
```

8.13 Circuit Unrestricted Digital Data Primary IC

```
circuitUnrestrictedDigitalDataPrimaryICPkg        PACKAGE
        ATTRIBUTES
            circuitUnrestrictedDigitalDataPrimaryIC                 GET-REPLACE;
REGISTERED AS   {cAISDNPackage 13};
```

8.14 Circuit Unrestricted Digital Data Rate Adapted From 56 kbit/s Primary IC

```
circuitUnrestrictedDigitalDataRateAdaptedFrom56kbpsPrimaryICPkg        PACKAGE
        ATTRIBUTES
            circuitUnrestrictedDigitalDataRateAdaptedFrom56kbpsPrimaryIC    GET-REPLACE;
REGISTERED AS   {cAISDNPackage 14};
```

8.15 Deactivation Capabilities

```
deactivationCapabilitiesPkg        PACKAGE
        ATTRIBUTES
            deactivationCapabilities                                GET-REPLACE;
REGISTERED AS   {cAISDNPackage 15};
```

8.16 Link Setting

```
linkSettingPkg      PACKAGE
        ATTRIBUTES
            linkLevelWindowSize                                     GET-REPLACE,
            maxBitsPerInformationFrame                              GET-REPLACE,
            maxTransmissionAttempts                                 GET-REPLACE;
REGISTERED AS   {cAISDNPackage 16};
```

8.17 Manage ISDN Terminal

```
manageISDNTerminalPackage      PACKAGE
        ACTIONS
        establishISDNTerminal invalidReferenceError,
        removeISDNTerminal invalidReferenceError;
REGISTERED AS   {cAISDNPackage 17};
```

8.18 Max Combined Thruput B-Channel

```
maxCombinedThruputBChanPkg                  PACKAGE
        BEHAVIOUR
        maxCombinedThruputBChanPkgBhv    BEHAVIOUR
        DEFINED AS   "This package identifies the maximum combined throughput permitted on the B-Channel.";;
        ATTRIBUTES
            maxCombinedThruputClass                                 REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.null                         GET-REPLACE;
REGISTERED AS   {cAISDNPackage 18};
```

8.19 Max Combined Thruput D-Channel

```
maxCombinedThruputDChanPkg                  PACKAGE
        BEHAVIOUR
        maxCombinedThruputDChanPkgBhv       BEHAVIOUR
        DEFINED AS  "This package identifies the maximum combined throughput permitted on the D-Channel.";;
        ATTRIBUTES
            maxCombinedThruputClass                                  REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.null                          GET-REPLACE;
REGISTERED AS  {cAISDNPackage 19};
```

8.20 Network Provided Tone

```
networkProvidedTonePkg          PACKAGE
        ATTRIBUTES
            networkProvidedTones                                     REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.true                          GET-REPLACE;
REGISTERED AS  {cAISDNPackage 20};
```

8.21 nT2ISDN Access Port Profile

```
nT2ISDNaccessPortProfilePkg                 PACKAGE
        BEHAVIOUR
        nT2ISDNAccessPortProfilePkgBhv      BEHAVIOUR
        DEFINED AS  "This object package represents the characteristics of the ISDN Access Port Profile object class to be
        instantied for support of a nT2 (class 2) ISDN interface configuration.";;
        ATTRIBUTES
            earlyCutThruUserProvidedAudibleRing                      GET-REPLACE,
            earlyCutThruRemoteNetworkInterwork                       GET-REPLACE;
REGISTERED AS  {cAISDNPackage 21};
```

8.22 Number Of D-Channel Links

```
numberOfDChannelLinksPkg                    PACKAGE
        BEHAVIOUR
        numberOfDChannelLinksPkgBhv         BEHAVIOUR
        DEFINED AS  "The linkOption attribute is a choice of fixed or an identification of the values for the 4 attributes
        callControlTEItotal, callControlTEIsw, packTEItotal and packTEIsw. The selection of fixed links (which can be
        represented by null) would indicate that there is exactly one signalling data link connection at sapi 0, TEI 0; and one
        packet link at sapi 16, TEI 0. The number of signalling links for the fixed option is 3. This includes one link for the
        signalling access controller at sapi 63, TEI 127.

        The dynamic choice is the default with callControlTEItotal and packTEItotal set to 127 and callControlTEIsw and
        packTEIsw set to 63. Where:

        callControlTEItotal is the total number of TEIs that can be assigned for Call Control,

        callControlTEIsw is either null or is the number of TEIs that can be assigned by the switch for Call Control. The
        null value indicates that the way TEIs are assigned is not controlled.

        packTEItotal is the total number of TEIs that can be assigned for packet,

        packTEIsw is either null or is the number of TEIs that can be assigned by the switch for packet. The null value
        indicates that the way TEIs are assigned is not controlled.

        The number of signalling links must be less than or equal to the sum of callControlTEItotal and packetTEItotal.";;

        ATTRIBUTES
            linkOption                                               REPLACE-WITH-DEFAULT
            DEFAULT VALUE CAISDNModule.linkOptionDefault             GET-REPLACE,
            numberOfDChannelLinks                                    GET-REPLACE;
REGISTERED AS  {cAISDNPackage 22};
```

8.23 Optional Deactivation

```
optionalDeactivationPkg          PACKAGE
        ATTRIBUTES
            deactivationCapabilities                                    GET-REPLACE;
REGISTERED AS   {cAISDNPackage 23};
```

8.24 Selection Procedures

```
selectionProceduresPkg   PACKAGE
        ATTRIBUTES
            channelSelection                                            GET-REPLACE;
REGISTERED AS   {cAISDNPackage 24};
```

8.25 DCE Timers

```
x25DCETimersPkg        PACKAGE
        ATTRIBUTES
            "ITU-T Rec. X.282":t1Timer                                  GET-REPLACE,
            "ITU-T Rec. X.282":t2Timer                                  GET-REPLACE,
            "ITU-T Rec. X.282":t3Timer                                  GET-REPLACE,
            "ITU-T Rec. X.282":t4Timer                                  GET-REPLACE,
            "ITU-T Rec. X.282":n1                                       GET-REPLACE,
            "ITU-T Rec. X.282":n2                                       GET-REPLACE,
            "ITU-T Rec. X.282":k                                        GET-REPLACE;
REGISTERED AS   {cAISDNPackage 25};
```

9 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.

9.1 Access Channel Pointer List

```
accessChannelPtrList          ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.AccessChannelPtrList;
MATCHES FOR SET-INTERSECTION, SET-COMPARISON;
        DEFINED AS  "This is a set-valued attribute whose value(s) points to one or more instances of the Access Channel
        object class.";;
REGISTERED AS   {cAISDNAttribute 1};
```

9.2 Active Terminal List

```
activeTerminalList        ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDN Module.ActiveTerminalList;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        activeTerminalListBhv   BEHAVIOUR
        DEFINED AS  "This attribute identifies the active terminals on the interface by the spid, tei., and usid. It is used to
        support maintenance. Spid and usid are allowed to be NULL if spid initialization procedures are not used.";;
REGISTERED AS   {cAISDNAttribute 2};
```

9.3 Assignment Of Timeslots

```
assignmentOfTimeslots          ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.AssignmentOfTimeslots;
MATCHES FOR EQUALITY;
```

BEHAVIOUR
AssignmentOfTimeslotsBehaviour BEHAVIOUR
DEFINED AS "This attribute identifies how timeslots are assigned for wideband (e.g. 384k/sec) bearer services. The channels must always be with a single physical interface (as modeled by access port). However, within the interface the channels may be assigned to:

- **fixed positions of contiguous channels (such as specified by Annex A/I.431 and Annex B/I.431);**
- **loating positions of contiguous channels (the channels must be contiguous but may start at any position within the physical interface that can support that number of contiguous channels;**
- **flexibly to any channels available within the physical interface without regard to whether the channels are contiguous or not.**

Note that this attribute controls how calls are offered to subscribers. It is a network provider option what channel assignments are accepted from subscribers.";;
REGISTERED AS {cAISDNAttribute 3};

9.4 Automatic XID Notification

automaticXIDnotification ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
automaticXIDnotificationBhv BEHAVIOUR
DEFINED AS "The XID frames may be exchanged only after the link has been made active. Exchange of XID frames before the link is made active is controlled by "automaticXIDnotification". This Boolean value attribute controls the exchange of XID frames between the switch and the user equipment. A "True" value of the attribute indicates that XID frames can be exchanged between the link controller in the switch and user equipment. A "False" value of the attribute indicates that XID frames cannot be exchanged.";;
REGISTERED AS {cAISDNAttribute 4};

9.5 Bearer Service For 384 kbit/s Data Primary IC

bearerServiceFor384kbpsDataPrimaryIC ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.PrimaryIC;
MATCHES FOR EQUALITY;
BEHAVIOUR
bearerServiceFor384kbpsDataPrimaryICBhv BEHAVIOUR
DEFINED AS "This attribute identifies the Primary Inter-Exchange Carrier (PIC) selected by the ISDN 384 kbit/s Data Service Subscriber.";;
REGISTERED AS {cAISDNAttribute 5};

9.6 Bearer Service For 1536 kbit/s Data Primary IC

bearerServiceFor1536kbpsDataPrimaryIC ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.PrimaryIC;
MATCHES FOR EQUALITY;
BEHAVIOUR
bearerServiceFor1536kbpsDataPrimaryICBhv BEHAVIOUR
DEFINED AS "This attribute identifies the Primary Inter-Exchange Carrier (PIC) selected by the ISDN 1536 kbit/s Data Service Subscriber.";;
REGISTERED AS {cAISDNAttribute 6};

9.7 Bearer Service For 1920 kbit/s Data Primary IC

bearerServiceFor1920DataPrimaryIC ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.PrimaryIC;
MATCHES FOR EQUALITY;
BEHAVIOUR
bearerServiceFor1920kbpsDataPrimaryICBhv BEHAVIOUR
DEFINED AS "This attribute identifies the Primary Inter-Exchange Carrier (PIC) selected by the ISDN 1920 kbit/s Data Service Subscriber.";;
REGISTERED AS {cAISDNAttribute 7};

9.8 Bearer Service For Multiple-Rate Data Primary IC

bearerServiceForMultipleRateDataPrimaryIC ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.PrimaryIC;
MATCHES FOR EQUALITY;
BEHAVIOUR
bearerServiceForMultipleRateDataPrimaryICBhv BEHAVIOUR
DEFINED AS "This attribute identifies the Primary Inter-Exchange Carrier (PIC) selected by the ISDN Multiple-Rate kbit/s Data Service Subscriber.";;
REGISTERED AS {cAISDNAttribute 8};

9.9 Bearer Service List

bearerServiceList ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.BearerServiceList;
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
BEHAVIOUR
bearerServiceListBhv BEHAVIOUR
DEFINED AS "The bearerServiceList attribute is a list of one or more bearerService types.";;
REGISTERED AS {cAISDNAttribute 9};

9.10 Bit Rate Of Primary Rate Interface

bitRateOfPrimaryRateInterface ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.BitRateOfPrimaryRateInterface;
MATCHES FOR SET-INTERSECTION, SET-COMPARISON;
BEHAVIOUR
bitRateOfPrimaryRateInterfaceBhv BEHAVIOUR
DEFINED AS "This attribute indicates bit rate of Primary rate interface. When the value of this attribute is "rate1544", the bit rate of interface is 1544 kbit/s.When the value of this attribute is "rate2048", the bit rate of interface is 2048 kbit/s.";;
REGISTERED AS {cAISDNAttribute 10};

9.11 Calling Number Screening Id

callingNumberScreeningId ATTRIBUTE
WITH ATTRIBUTE SYNTAX CAISDNModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
callingNumberScreeningIdBhv BEHAVIOUR
DEFINED AS "This is the naming attribute of the calling number screening managed object. If the string choice for the syntax is used, matching on the substings is permitted. If the number choice for the syntax is used, then matching on the ordering is permitted.";;
REGISTERED AS {cAISDNAttribute 11};

9.12 Catalogued Layer Entity LAPD Id

cataloguedLayerEntityLAPDId ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CACommonModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
cataloguedLayerEntityLAPDIdBhv BEHAVIOUR
DEFINED AS "This is a naming attribute of the Access Channel managed object. 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 {cAISDNAttribute 12};

9.13 Circuit Audio Primary IC

```
circuitAudioPrimaryIC          ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.PrimaryIC;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        circuitAudioPrimaryICBhv    BEHAVIOUR
        DEFINED AS "This attribute represents the Primary Inter-Exchange Carrier (PIC) selected by the
        bearerServiceAudio service subscriber.";;
REGISTERED AS  {cAISDNAttribute 13};
```

9.14 Circuit Multi-Use Primary IC

```
circuitMultiUsePrimaryIC            ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.PrimaryIC;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        circuitMultiUsePrimaryICBhv       BEHAVIOUR
        DEFINED AS "This attribute represents the Primary Inter-Exchange Carrier (PIC) selected by the
        circuitMultiUse service subscriber.";;
REGISTERED AS  {cAISDNAttribute 14};
```

9.15 Circuit Unrestricted Digital Data Rate Adapted From 56 kbit/s Primary IC

```
circuitUnrestrictedDigitalDataRateAdaptedFrom56kbpsPrimaryIC          ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.PrimaryIC;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        circuitUnrestrictedDigitalDataRateAdaptedFrom56kbpsPrimaryICBhv  BEHAVIOUR
        DEFINED AS "This attribute represents the Primary Inter-Exchange Carrier (PIC) selected by the
        circuitUnrestrictedDigitalDataRateAdaptedFrom56kbps service subscriber.";;
REGISTERED AS  {cAISDNAttribute 15};
```

9.16 Circuit Speech Primary IC

```
circuitSpeechPrimaryIC              ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.PrimaryIC;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        circuitSpeechPrimaryICBhv         BEHAVIOUR
        DEFINED AS  "This attribute represents the Primary Inter-Exchange Carrier (PIC) selected by the CircuitSpeech
        service subscriber.";;
REGISTERED AS  {cAISDNAttribute 16};
```

9.17 Circuit Unrestricted Digital Data Primary IC

```
circuitUnrestrictedDigitalDataPrimaryIC          ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.PrimaryIC;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        circuitUnrestrictedDigitalDataPrimaryICBhv       BEHAVIOUR
        DEFINED AS "This attribute represents the Primary Inter-Exchange Carrier (PIC) selected by the
        circuitUnrestrictedDigitalData service subscriber.";;
REGISTERED AS  {cAISDNAttribute 17};
```

9.18 Calling Party Default Directory Number

```
callingPartyDefaultDN               ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.CallingPartyDefaultDirectoryNumber;
MATCHES FOR EQUALITY;
```

BEHAVIOUR
callingPartyDefaultDNBhv BEHAVIOUR
DEFINED AS "The attribute is applicable only if the Calling Party Number Provision Necessary attribute is set to the boolean value FALSE. The value(s) of this attribute is the calling party number default Directory Number(s) to be used for billing purposes when the calling party numbers are not provided by the CPE. The attribute value choices may be either one Default Directory Number with the choice ALL specified (indicating that the Default DN applies to all bearer services assigned to the Directory Number), or a list of Directory Numbers per bearer service. The attribute value set may be 1 to 3 sequences. The form of each sequence within the value set is: <Directory Number>,<bearer service>|ALL
The bearer service(s) type must be part of the set of values of the bearer service attribute.";;
REGISTERED AS {cAISDNAttribute 18};

9.19 Calling Party Number Discard Control

callingPartyNumberDiscardCtrl ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
callingPartyNumberDiscardCtrlBhv BEHAVIOUR
DEFINED AS "When the value of this attribute is "TRUE" (default), the switch discards user supplied Directory Numbers, Directory Numbers not screened or that failed screening, and calling party numbers when they occur and uses a single default Directory Number as the calling party number. If the attribute value is "FALSE", the discard feature does not apply. If the Calling Party Number Provision Necessary attribute = "TRUE", then the value of this attribute should be "FALSE". This attribute is only applicable to ISDN services.";;
REGISTERED AS {cAISDNAttribute 19};

9.20 Calling Party Number Provision Necessary

callingPartyNumberProvisionNecessary ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
callingPartyNumberProvisionNecessaryBhv BEHAVIOUR
DEFINED AS "When the value of this attribute is FALSE, the call processing will accept any call originations from this access line without the calling party number information being given. When the value of this attribute is FALSE, the value of the callingPartyDefaultDN attribute is assumed as the originating directory number for billing purposes. The default value of this attribute is FALSE.
The attribute value TRUE means that calling party information is required by call processing and if the information is not provided by the CPE on a call origination, the call processing should reject the call.";;
REGISTERED AS {cAISDNAttribute 20};

9.21 Calling Party Valid Directory Number List

callingPartyValidDirectoryNumberList ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.CallingPartyValidDirectoryNumberList;
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
BEHAVIOUR
callingPartyValidDirectoryNumberListBhv BEHAVIOUR
DEFINED AS "This set-value attribute identifies the individual directory numbers that originate calls from an instance of the ISDN Access Port object class.";;
REGISTERED AS {cAISDNAttribute 21};

9.22 Catalogued Access Port ISDN Primary Rate Id

cataloguedAccessPortISDNPrimaryRateId ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
cataloguedAccessPortISDNPrimaryRateIdBhv 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 {cAISDNAttribute 22};

9.23 Catalogued Access Port Profile ISDN Id

cataloguedAccessPortProfileISDNId ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
cataloguedAccessPortProfileISDNIdBhv 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 {cAISDNAttribute 23};

9.24 Catalogued Layer Entity DSS 1 ID

cataloguedLayerEntityDSS1Id ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
cataloguedLayerEntityDSS1IdBhv 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 {cAISDNAttribute 24};

9.25 Channel Selection

channelSelection ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ChannelSelection;
MATCHES FOR EQUALITY;
BEHAVIOUR
channelSelectionBhv BEHAVIOUR
DEFINED AS "This attribute is used to set the B-channel selection procedure from the network to the user. The selection procedure is shown in 5.2.3.1/Q.931. The value byNetwork(0) means that the channel is indicated by the network which corresponds to items 1) and 2) in 5.2.3.1/Q.931 and by user (1) means that any channel is acceptable which corresponds to item 3) in 5.2.3.1/Q.931.";;
REGISTERED AS {cAISDNAttribute 25};

9.26 D-channel Packet Default Directory Number

dChannelPacketDefaultDirectoryNumber ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.DirectoryNumber;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelPacketDefaultDirectoryNumberBhv BEHAVIOUR
DEFINED AS "The value of this attribute is a Numeric string representing a particular default Directory Number (Directory Number) from the set of Directory Numbers listed in the DChannelDirectoryNumberList attribute. This Directory Number is used when no X.25 Calling Address is provided due to the caller using in-band procedures.";;
REGISTERED AS {cAISDNAttribute 26};

9.27 D-Channel Packet Directory Number List

dChannelPacketDirectoryNumberList ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.DirectoryNumberList;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelPacketDirectoryNumberListBhv BEHAVIOUR
DEFINED AS "The value(s) of this attribute are 1 or more Numeric strings representing the Directory Numbers (Directory Number) that provide a Directory Number screening set for use over a D-Channel packet connection (LAPD SAPI address field set to Packet Control).";;
REGISTERED AS {cAISDNAttribute 27};

9.28 D-Channel Primary Pointer

dChannelPrimaryPtr ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ObjectInstance;
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
BEHAVIOUR
dChannelPrimaryPtrBhv BEHAVIOUR
DEFINED AS "The dChannelPrimaryPtr attribute of the ISDN Access Port Profile Primary Rate object class and identifies the primary D-Channel object.";;
REGISTERED AS {cAISDNAttribute 28};

9.29 D-Channel Secondary Pointer

dChannelSecondaryPtr ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ObjectInstance;
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
BEHAVIOUR
dChannelSecondaryPtrBhv BEHAVIOUR
DEFINED AS "This is pointer to the optional backup D-Channel primary rate resource object instance for a Primary Rate Access.";;
REGISTERED AS {cAISDNAttribute 29};

9.30 D-Channel T301

dChannelT301 ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelT301Bhv BEHAVIOUR
DEFINED AS "This attribute provides the value of call control timer T301 defined in Q.931.";;
REGISTERED AS {cAISDNAttribute 30};

9.31 D-Channel T303

dChannelT303 ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelT303Bhv BEHAVIOUR
DEFINED AS "This attribute provides the value of call control timer T303 defined in Q.931.";;
REGISTERED AS {cAISDNAttribute 31};

9.32 D-Channel T304

dChannelT304 ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelT304Bhv BEHAVIOUR
DEFINED AS "This attribute provides the value of call control timer T304 defined in Q.931.";;
REGISTERED AS {cAISDNAttribute 32};

9.33 D-Channel T305

```
dChannelT305                    ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT305Bhv         BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T305 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 33};
```

9.34 D-Channel T306

```
dChannelT306                    ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT306Bhv         BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T306 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 34};
```

9.35 D-Channel T307

```
dChannelT307                    ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT307Bhv         BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T307 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 35};
```

9.36 D-Channel T308

```
dChannelT308                    ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT308Bhv         BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T308 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 36};
```

9.37 D-Channel T309

```
dChannelT309                    ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT309Bhv         BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T309 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 37};
```

9.38 D-Channel T310

```
dChannelT310                    ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
```

```
        BEHAVIOUR
        dChannelT310Bhv        BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T310 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 38};
```

9.39 D-Channel T312

```
dChannelT312                ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT312Bhv        BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T312 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 39};
```

9.40 D-Channel T314

```
dChannelT314                ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT314Bhv        BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T314 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 40};
```

9.41 D-Channel T316

```
dChannelT316                ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT316Bhv        BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T316 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 41};
```

9.42 D-Channel T317

```
dChannelT317                ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT317Bhv        BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T317 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 42};
```

9.43 D-Channel T320

```
dChannelT320                ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
        BEHAVIOUR
        dChannelT320Bhv        BEHAVIOUR
        DEFINED AS  "This attribute provides the value of call control timer T320 defined in Q.931.";;
REGISTERED AS  {cAISDNAttribute 43};
```

9.44 D-Channel T321

dChannelT321 ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelT321Bhv BEHAVIOUR
DEFINED AS "This attribute provides the value of call control timer T321 defined in Q.931.";;
REGISTERED AS {cAISDNAttribute 44};

9.45 D-Channel T322

dChannelT322 ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelT322Bhv BEHAVIOUR
DEFINED AS "This attribute provides the value of call control timer T322 defined in Q.931.";;
REGISTERED AS {cAISDNAttribute 45};

9.46 D-Channel T330

dChannelT330 ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DChannelT3xx;
MATCHES FOR EQUALITY;
BEHAVIOUR
dChannelT330Bhv BEHAVIOUR
DEFINED AS "This attribute provides the value of call control timer T330 defined in Q.931.";;
REGISTERED AS {cAISDNAttribute 46};

9.47 Deactivation Capabilities

deactivationCapabilities ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
deactivationCapabilitiesBhv BEHAVIOUR
DEFINED AS "This attribute indicates whether the exchange supports deactivation or not. In the APP, this attribute is a boolean with the true value stating that the APP supports deactivation by the user; the false value indicates that the APP supports only permanent deactivation. In the layer 2 entity, this attribute indicates whether signalling or information entity support deactivation by the user or not. The attribute is a boolean; the false value is only possible if the same attribute in the ISDN APP is also false.";;
REGISTERED AS {cAISDNAttribute 47};

9.48 Directory Number Appearance Identifier List

directoryNumberAppearanceIdentifierList ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule. DirectoryNumberAppearanceIdentifierList;
MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
BEHAVIOUR
directoryNumberAppearanceIdentifierBhv BEHAVIOUR
DEFINED AS "This attribute identifies the terminal controlled call appearance identifier information for each DN associated with the Terminal Service Profile. These call appearance identifiers are not used for call set-up or for compatibility checks for incoming calls. This information is simply used for associating a DN with a particular key on a terminal. This attribute also identifies the default bearer service associated with each terminal controlled call appearance. This BS information can be used in originating calls, if not overridden by the user.";;
REGISTERED AS {cAISDNAttribute 48};

9.49 Directory Number Reference

directoryNumberReference ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.DirectoryNumberReference;
MATCHES FOR EQUALITY;
BEHAVIOUR
directoryNumberReferenceBhv BEHAVIOUR
DEFINED AS "The function of this set-valued attribute is to assign a logical number (integer) to each Directory Number/Bearer service pair associated with this TSP. This attribute is used in the attribute value structure of the Feature Activators per Directory Number/BS (FADN) and Feature Indicators per Directory Number/BS (FIDN) attributes of the Terminal Configuration object class instance associated with this TSP. The set of value(s) of this attribute are each of the following sequence:

<DirectoryNumberR>,<DirectoryNumber>,<BS>

where:

DirectoryNumberR is an integer in the range from 1 to 128, which is the Directory Number/BS reference number used by attributes of the associated TCGN object associated with this TSP object,

Directory Number is the Directory Number to which the DirectoryNumberR is assigned.

BS is the ISDN bearer service contained in the Directory Number Profile managed object.";;
REGISTERED AS {cAISDNAttribute 49};

9.50 DTE Compatibility

dTECompatibilty ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.DTECompatibility;
MATCHES FOR EQUALITY;
BEHAVIOUR
dTECompatibiltyBhv BEHAVIOUR
DEFINED AS "The value of this attribute provides compatibility with DTE built to 1980, 1984, 1988 or 1993 X.25 specifications.";;
REGISTERED AS {cAISDNAttribute 50};

9.51 Early Cut Thru Remote Network Interwork

earlyCutThruRemoteNetworkInterwork ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
earlyCutThruRemoteNetworkInterworkBhv BEHAVIOUR
DEFINED AS "This attribute indicates whether the procedures described in Annex K/Q.931are activated or not. It is a boolean value that is associated with the attribute earlyCutThruUserProvidedAudibleRing. If earlyCutThruUserProvidedAudibleRing is true, earlyCutThruRemoteNetworkInterwork must be true to allow the PBX to return the tone back towards the network.";;
REGISTERED AS {cAISDNAttribute 51};

9.52 Early Cut Thru User Provided Audible Ring

earlyCutThruUserProvidedAudibleRing ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
earlyCutThruUserProvidedAudibleRingBhv BEHAVIOUR
DEFINED AS "This attribute indicates whether the exchange provides users with tone or not. It is a boolean, with the true value indicating that the exchange is not providing the tones while early cut through is provided.";;
REGISTERED AS {cAISDNAttribute 52};

9.53 Feature Activators All Directory Number

featureActivatorsAllDirectoryNumber ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureActivator;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureActivatorsAllDirectoryNumberBhv BEHAVIOUR
DEFINED AS "This attribute, (FA), is a set-valued attribute of the Terminal Configuration object class. This attribute identifies Feature Activators for features which have the same value for all Directory Number/BSs on an ISDN terminal. This attribute identifies Feature Activators for TSP features to be applied to all Directory Number/BS pairs identified on an ISDN terminal. At least 64 feature activators should be assignable for the combination of the FA and FADirectoryNumber TCGN features. Each value in the set is a sequence of data items in the following format:
n, <ObjectID>
where: an integer in the range of 0 to 16383, identifying a Feature Activator value to be sent by an ISDN terminal when the user activates a key, The identifier of a Service Feature Object, in ASN.1 format.";;
REGISTERED AS {cAISDNAttribute 53};

9.54 Feature Activators Per Directory Number

featureActivatorsPerDirectoryNumber ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureActivator;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureActivatorsPerDirectoryNumberBhv BEHAVIOUR
DEFINED AS "This attribute is a set-valued attribute of the Terminal Configuration object class. This attribute identifies Feature Activators for TSP features requiring different values for each Directory Number/BS pair on an ISDN terminal. This feature is operable only for specific Directory Number/CT pairs identified by the Directory Number Reference attribute in the TSP object associated with this TCGN object. At least 64 feature activators should be assignable for the combination of the FA and FADirectoryNumber TCGN features. Each value in the set is a sequence of data items in the following format: n, m, <ObjectID>
where: an integer in the range of 0 to 16383, identifying a Feature Activator value to be sent by an ISDN terminal when the user activates a key, an integer in the range of 1 to 128, representing the Directory Number Reference that specifically identifies a Directory Number/BS pair to which the Feature Activator is assigned, The identifier of a Service Feature Object in ASN.1 format.";;
REGISTERED AS {cAISDNAttribute 54};

9.55 Feature Activators Per Hunt Make Busy

featureActivatorsPerHuntMakeBusy ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureActivator;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureActivatorsPerHuntMakeBusyBhv BEHAVIOUR
DEFINED AS "This attribute identifies Feature Activators used to activate and deactivate the Hunt Make Busy application on an ISDN Terminal.";;
REGISTERED AS {cAISDNAttribute 55};

9.56 Feature Activators Per Stop Hunt

featureActivatorsPerStopHunt ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureActivator;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureActivatorsPerStopHuntBhv BEHAVIOUR
DEFINED AS "This attribute identifies Feature Activators used to activate and deactivate the Stop Hunt application on an ISDN terminal.";;
REGISTERED AS {cAISDNAttribute 56};

9.57 Feature Indicators All Directory Number

featureIndicatorsAllDirectoryNumber ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureIndicator;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureIndicatorsAllDirectoryNumberBhv BEHAVIOUR
DEFINED AS "This set-valued attribute identifies Feature Indicators at an ISDN terminal for features which have the same value for all Directory Number/BS. At least 64 feature indicators may be assignable to a given terminal. Each attribute value in the set is a sequence of data items in the following format:

n,<Object ID>

where:

n = an integer in the range of 0 to 16383, identifying a Feature Indicator value to be received by an ISDN terminal to light a particular lamp at the terminal,

Object ID = The identifier a supplementary feature to be which this indicator is assigned.";;
REGISTERED AS {cAISDNAttribute 57};

9.58 Feature Indicators Per Directory Number

featureIndicatorsPerDirectoryNumber ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureIndicatorsPerDirectoryNumber;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureIndicatorsPerDirectoryNumberBhv BEHAVIOUR
DEFINED AS "This attribute is a set-valued attribute of the Terminal Configuration (TCGN) object class. This attribute identifies Feature Indicators for TSP features requiring different values for each Directory Number/BS pair on an ISDN terminal. This feature indication applies only for specific Directory Number/CT pairs identified by the Directory Number Reference attribute in the TSP object associated with this TCGN object. At least 64 feature activators should be assignable for the combination of the FI and FIDirectoryNumber TCGN features. Each value in the set is a sequence of data items in the following format:
n, m, <Object ID>
where: An integer in the range of 0 to 16383, identifying a Feature Indicator or value to be returned to an ISDN terminal indicating the status of the assigned feature, an integer in the range of 1 to 128, representing the Directory Number Reference, (DirectoryNumberR), that specifically identifies a DirectoryNumber/BS pair to which the Feature Indicator is assigned, The identifier of a Service Feature Object in ASN.1 format. ";;
REGISTERED AS {cAISDNAttribute 58};

9.59 Feature Indicators Per Hunt Make Busy

featureIndicatorsPerHuntMakeBusy ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureActivatorValue;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureIndicatorsPerHuntMakeBusyBhv BEHAVIOUR
DEFINED AS "This attribute identifies the Feature Indicator that displays the status of the Make Busy application on an ISDN terminal.";;
REGISTERED AS {cAISDNAttribute 59};

9.60 Feature Indicators Per Stop Hunt

featureIndicatorsPerStopHunt ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.FeatureActivatorValue;
MATCHES FOR EQUALITY;
BEHAVIOUR
featureIndicatorsPerStopHuntBhv BEHAVIOUR

DEFINED AS "This attribute identifies the Feature Indicator that displays the status of the Stop Hunt application on an ISDN terminal.";;
REGISTERED AS {cAISDNAttribute 60};

9.61 Incoming Default Thruput Class

incomingDefaultThruputClass ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ThruputClass;
MATCHES FOR EQUALITY;
BEHAVIOUR
incomingDefaultThruputClassBhv BEHAVIOUR
DEFINED AS "The values of this attribute identify selections of the default throughput class for the incoming direction on the B- or D-Channels. ";;
REGISTERED AS {cAISDNAttribute 61};

9.62 Incoming Max Packet Size

incomingMaxPacketSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.PacketSize;
MATCHES FOR EQUALITY;
BEHAVIOUR
incomingMaxPacketSizeBhv BEHAVIOUR
DEFINED AS "The function of this attribute is to allow the subscriber to choose a maximum packet size (different from the default of 128 provided by the network) for the incoming direction on the B- or D-Channels.

The enumerated choice value of this attribute is one of the following, representing the maximum allowable packet size for a logical channel which does not include Private Virtual Circuits (PVC).

- **16 (octets)**
- **32 (octets)**
- **64 (octets)**
- **128 (octets)**
- **256 (octets)**
- **512 (octets)**
- **1024 (octets)**
- **2048 (octets)**
- **4096 (octets)";;**

REGISTERED AS {cAISDNAttribute 62};

9.63 Incoming Window Size

incomingWindowSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.WindowSize;
MATCHES FOR EQUALITY;
BEHAVIOUR
incomingWindowSizeBhv BEHAVIOUR
DEFINED AS "This attribute is an attribute of the Packet Switched Subscriber Services object class. The value of this attribute allows for the subscription to non-standard default window sizes for the incoming direction. The attribute value is an integer whose range of permissible values depends upon the value of the Packet Level Sequencing (PLSQ) attribute. If modulo 8 sequencing is specified by PLSQ, the permissible range of the IWS integer is 1 to 7. If modulo 128 is specified by PLSQ, the range of permissible values for IWS is 1 to 60 (61 to 127 is desirable).";;
REGISTERED AS {cAISDNAttribute 63};

9.64 Interface Type

interfaceType ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.InterfaceType;
MATCHES FOR EQUALITY;
BEHAVIOUR
interfaceTypeBhv BEHAVIOUR

DEFINED AS "This attribute indicates whether channel access is provided via a basic or a primary rate interface.";;
REGISTERED AS {cAISDNAttribute 64};

9.65 Layer 2 Info Entity Pointer

layer2InfoEntityPtr ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ObjectInstance;
MATCHES FOR EQUALITY;
BEHAVIOUR
layer2InfoEntityPtrBhv BEHAVIOUR
DEFINED AS "This attribute is used as a pointer to an instance of the Layer2InfoEntity managed object class.";;
REGISTERED AS {cAISDNAttribute 65};

9.66 Layer Entity LAPD Pointer

layerEntityLAPDPtr ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ObjectInstance;
MATCHES FOR EQUALITY;
BEHAVIOUR
layerEntityLAPDPtrBhv BEHAVIOUR
DEFINED AS "This attribute is used as a pointer to an instance of the Layer2LAPDEntity managed object class.";;
REGISTERED AS {cAISDNAttribute 66};

9.67 Layer 3 Info Entity Pointer

layer3InfoEntityPtr ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.ObjectInstance;
MATCHES FOR EQUALITY;
BEHAVIOUR
layer3InfoEntityPtrBhv BEHAVIOUR
DEFINED AS "This attribute is used as a pointer to an instance of the Layer3InfoEntity managed object class.";;
REGISTERED AS {cAISDNAttribute 67};

9.68 Link Level Window Size

linkLevelWindowSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.WindowSize;
MATCHES FOR EQUALITY;
BEHAVIOUR
linkLevelWindowSizeBhv BEHAVIOUR
DEFINED AS "This attribute specifies the link layer window size as defined in Q.921. The linkLevelWindowSize attribute value determines the number of packets allowed in a packet window. The permissible values of this attribute are a range of integer values between 1 and 60, with the following conditions:

- **if the linkLevelFrameSequence attribute is 0, (Modulo 8 frame sequence), the value range of the linkLevelWindowSize attribute is 1 to 7,**
- **if the linkLevelFrameSequence attribute is 1, (Modulo 128 frame sequence), the value range of the linkLevelWindowSize attribute is 1 to 127.";;**

REGISTERED AS {cAISDNAttribute 68};

9.69 Link Option

linkOption ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.LinkOption;
MATCHES FOR EQUALITY;

BEHAVIOUR
linkOptionBhv BEHAVIOUR
DEFINED AS "This attribute defines whether the user has subscribed to dynamic or static tei assignment.";;
REGISTERED AS {cAISDNAttribute 69};

9.70 Max Bits Per Information Frame

maxBitsPerInformationFrame ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.MaxBitsPerInformationFrame;
MATCHES FOR EQUALITY;
BEHAVIOUR
maxBitsPerInformationFrameBhv BEHAVIOUR
DEFINED AS "This attribute determines the maximum number of bits allowed in the Information frame on LAPB over the B-Channel. The values permissible for this attribute is a single choice from the following enumerated list: 2120, 4168, 8264, 16456, 32840.";;
REGISTERED AS {cAISDNAttribute 70};

9.71 Max Combined Thruput Class

maxCombinedThruputClass ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.MaxCombinedThruputClass;
MATCHES FOR EQUALITY;
BEHAVIOUR
maxCombinedThruputClassBhv BEHAVIOUR
DEFINED AS "This attribute determines the maximum value for the sum of the throughput classes allowed on the B-channel before the switch classifies that the channel is busy. The attribute value is either an alphanumeric string "NULL" (default) or a discrete numeric rate value.";;
REGISTERED AS {cAISDNAttribute 71};

9.72 Max Number of Call Reference

maxNumberOfCallReference ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.MaxNumberOfCallReference;
MATCHES FOR EQUALITY;
BEHAVIOUR
maxNumberOfCallReferenceBhv BEHAVIOUR
DEFINED AS "This attribute indicates the maximum number of the simultaneous layer 3 connections for signalling (SAPI = 0 for all TEIs on this Access Port Profile).";;
REGISTERED AS {cAISDNAttribute 72};

9.73 Max Transmission Attempts

maxTransmissionAttempts ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.MaxTransmissionAttempts;
MATCHES FOR EQUALITY;
BEHAVIOUR
maxTransmissionRequestsBhv BEHAVIOUR
DEFINED AS "This attribute specifies the maximum number of attempts allowed on the B-Channel to complete a successful transmission. The value of this attribute is an integer in the range from 2 through 15, directly representing the maximum permissable attempts. The default value of this attribute is 3.";;
REGISTERED AS {cAISDNAttribute 73};

9.74 Network Provided Tones

networkProvidedTones ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
networkProvidedTonesBhv BEHAVIOUR

DEFINED AS "This attribute indicates that a tone and/or announcement is to be provided by the network to indicate the progress or otherwise the status of a call. It is a Boolean attribute with a deafult value of true, as defined in I.231, which means that tones are provided by the network.";;

REGISTERED AS {cAISDNAttribute 74};

9.75 Network User Identification

networkUserIdentification ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

networkUserIdentificationBhv BEHAVIOUR

DEFINED AS "This is a boolean attribute that determines Network User Identification (NUI) capability for a Packet Mode user. When the value of this attribute is TRUE, the interface is configured to allow NUI selection facility to be provided to the network for billing, security or network management purposes on a per call basis. When FALSE, the NUI capability is not assigned to this access interface.";;

REGISTERED AS {cAISDNAttribute 75};

9.76 Network User Id Override

networkUserIdentificationOverride ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

networkUserIdentificationOverrideBhv BEHAVIOUR

DEFINED AS "This is a boolean attribute that determines Network User Identification (NUI) override capabilty. This attribute value is applicable only if the networkUserId attribute value is TRUE, indicating that the interface is configured to allow NUI selection facility to be provided to the network for billing, security or network management purposes on a per call basis. When this attribute value is TRUE, the interface is configured so that the NUI information may be associated with a user profile that will be used for the duration of the call. When FALSE, the NUI Override capability is not assigned to this access interface.";;

REGISTERED AS {cAISDNAttribute 76};

9.77 Network User Id Selection

networkUserIdentificationSelection ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAOptionalUserFacilitiesModule.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

networkUserIdentificationSelectionBhv BEHAVIOUR

DEFINED AS "This is a boolean attribute that determines Network User Identification (NUI) Selection and Acceptance capability. This attribute value is applicable only if the networkUserIdentification attribute value is TRUE, indicating that the interface is configured to allow NUI selection facility to be provided to the network for billing, security or network management purposes on a per call basis. When the value of this attribute is TRUE, the NUI selection may be signalled in Call Accepted packets. When FALSE, the NUI Selection is not permitted in Call Accepted packets.";;

REGISTERED AS {cAISDNAttribute 77};

9.78 Network UserId Supplement

networkUserIdentificationSupplement ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAOptionalUserFacilitiesModule.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

networkUserIdentificationSupplementBhv BEHAVIOUR

DEFINED AS "This is a boolean attribute that determines Network User Identification (NUI) Supplemental User Identification (SUI) capabilty. This attribute value is applicable only if the networkUserIdentification attribute value is TRUE, indicating that the interface is configured to allow NUI selection facility to be provided to the network for billing, security or network management purposes on a per call basis. When the value of this attribute is TRUE, the Packet Handler Function (PHF) is configured to signal SUI information. When FALSE, the PHF is not configured for SUI.";;

REGISTERED AS {cAISDNAttribute 78};

9.79 Network UserId User Validate

networkUserIdentificationUserValidate ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAOptionalUserFacilitiesModule.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

networkUserIdentificationUserValidateBhv BEHAVIOUR

DEFINED AS "This is a boolean attribute that determines Network User Identification (NUI) user validation capabilty. This attribute value is applicable only if the networkUserIdentification attribute value is TRUE, indicating that the interface is configured to allow NUI selection facility to be provided to the network for billing, security or network management purposes on a per call basis. When the attribute value is TRUE, validated NUI values may be passed over the interface from the user to the network and unvalidated NUI values may be passed over the interface from the network to the user. The default value is FALSE, indicating that user validation is not allowed.";;

REGISTERED AS {cAISDNAttribute 79};

9.80 Notification Class

notificationClass ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.NotificationClass;

MATCHES FOR EQUALITY;

BEHAVIOUR

notificationClassBhv BEHAVIOUR

DEFINED AS "The value of this attribute indicates whether the packet bearer service is "without notification", "with conditional notification" or "with systematic notification" as described in X.31 and Q.931.";;

REGISTERED AS {cAISDNAttribute 80};

9.81 Number Of D-Channel Links

numberOfDChannelLinks ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.NumberOfDChannelLinks;

MATCHES FOR EQUALITY;

BEHAVIOUR

numberOfDChannelLinksBhv BEHAVIOUR

DEFINED AS "This attribute indicates the max number of D-Channel links on the basic rate access. This includes signalling links and links used for other services (e.g. packets).";;

REGISTERED AS {cAISDNAttribute 81};

9.82 Outgoing Default Thruput Class

outgoingDefaultThruputClass ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.ThruputClass;

MATCHES FOR EQUALITY;

BEHAVIOUR

outgoingDefaultThruputClassBhv BEHAVIOUR

DEFINED AS "The values of this attribute identify selections of the default throughput class for the outgoing direction on the B- or D-Channels.";;

REGISTERED AS {cAISDNAttribute 82};

9.83 Outgoing Max Packet Size

outgoingMaxPacketSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.PacketSize;
MATCHES FOR EQUALITY;
BEHAVIOUR
outgoingMaxPacketSize Bhv BEHAVIOUR
DEFINED AS "The function of this attribute is to allow the subscriber to choose a maximum packet size (different than the default of 128 provided by the network) for the outcoming direction on the B- or D-Channels.

The enumerated choice value of this attribute is one of the following, representing the maximum allowable packet size for a logical channel which does not include Private Virtual Circuits (PVC).: 16, 32, 64, 128, 256, 512, 1024, 2048, or 4096 octets.";;
REGISTERED AS {cAISDNAttribute 83};

9.84 Outgoing Window Size

outgoingWindowSize ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.WindowSize;
MATCHES FOR EQUALITY;
BEHAVIOUR
outgoingWindowSizeBhv BEHAVIOUR
DEFINED AS "This attribute specifies the packet window size for outgoing packet transmissions in LAPB. The value of this attribute allows for the subscription to non-standard default window sizes for the outgoing direction. The attribute value is an integer whose range of permissible values depends upon the value of the packetLevelSequence attribute. If modulo 8 sequencing is specified by the packetLevelSequence attribute, the permissible range is an integer between 1 and 7. If modulo 128 is specified by the packetLevelSequence attribute, the range of permissible values is 1 to 60 (61 to 127 is desirable).";;
REGISTERED AS {cAISDNAttribute 84};

9.85 Screen Calling Party Number

screenCallingPartyNumber ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;
MATCHES FOR EQUALITY;
BEHAVIOUR
screenCallingPartyNumberBhv BEHAVIOUR
DEFINED AS "This is a boolean attribute. When the value of this attribute is TRUE, the switch will screen calling party number information for validity when provided on a call by the user equipment. The attribute value FALSE is the default and will prohibit the switch from screening calling party numbers. If the attribute value is FALSE, then the Calling Party Number Default DN attribute is required. If the Calling Party Number Provision Necessary attribute value is TRUE, then this attribute must also be TRUE.";;
REGISTERED AS {cAISDNAttribute 85};

9.86 Semi-Permanent Access Packet Handler Default Directory Number

semiPermAccessPacketHandlerDefaultDN ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.SemiPermAccessPacketHandlerDefaultDN;
MATCHES FOR EQUALITY;
BEHAVIOUR
semiPermAccessPacketHandlerDefaultDNBhv BEHAVIOUR
DEFINED AS " The values of this attribute value identifies the Directory Number assigned to each access channels to be used as the default DN if a DN is not included in the outgoing set-up message to a nailed-up B-channel.";;
REGISTERED AS {cAISDNAttribute 86};

9.87 Signalling Parameter Negotiation

signallingParameterNegotiation ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNAttributeModule.Boolean;

MATCHES FOR EQUALITY;

BEHAVIOUR

signallingParameterNegotiationBhv BEHAVIOUR

DEFINED AS "This is a boolean attribute. The attribute value TRUE allows the use of signalling parameter negotiation, providing that the switch supports XID frames.";;

REGISTERED AS {cAISDNAttribute 87};

9.88 Terminal Configuration Id

terminalConfigurationId ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.NameType;

MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;

BEHAVIOUR

terminalConfigurationIdBhv 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 {cAISDNAttribute 88};

9.89 Terminal configuration Pointer

terminalConfigurationPtr ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.ObjectInstance;

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

BEHAVIOUR

terminalConfigurationPtrBhv BEHAVIOUR

DEFINED AS "This attribute is used as a pointer to an instance of the terminal Configuration managed object class.";;

REGISTERED AS {cAISDNAttribute 89};

9.90 TSP ID

tspid ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNModule.TSPID;

MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;

BEHAVIOUR

tspidBhv BEHAVIOUR

DEFINED AS "The value of this attribute is a numeric string of up to 18 numeric characters that identify the subscriber ISDN Basic Rate CPE profiles from a human user perspective. Prior to CPE initialization, a terminalServiceProfile (TSP) object instance is created including an assignment of a tspid attribute by the service provider's Service Order Process. Prior to using the terminal, a serviceProfileIdentifier (SPID) is entered by the subscriber at the CPE. The SPID, provided to the subscriber at Service Order time by the Administration, includes the TSPID as a component. The other componenet of the SPID is the terminalIdentifier (TID) that identifies at protocol layer 3 the particular CPE terminal being initialized.";;

REGISTERED AS {cAISDNAttribute 90};

9.91 Terminal Limit

terminalLimit ATTRIBUTE

WITH ATTRIBUTE SYNTAX

CAISDNAttributeModule.TerminalLimit;

MATCHES FOR EQUALITY;

BEHAVIOUR

terminalLimitBhv BEHAVIOUR

DEFINED AS "This attribute is an integer in the range from 0 to 62 which identifies the maximum number of Basic Rate ISDN terminals that can share an instance of the TSP object class. A value of 0 stops service for the terminalServiceProfile.";;

REGISTERED AS {cAISDNAttribute 91};

9.92 Terminal Service Profile

terminalServiceProfileId ATTRIBUTE
WITH ATTRIBUTE SYNTAX
CAISDNModule.NameType;
MATCHES FOR EQUALITY, ORDERING, SUBSTRINGS;
BEHAVIOUR
terminalServiceProfileIdBhv 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 {cAISDNAttribute 92};

10 Parameter Templates

invalidReferenceError PARAMETER
CONTEXT SPECIFIC-ERROR;
WITH SYNTAX CAISDNModule.ObjectInstance;
BEHAVIOUR
invalidReferenceErrorBehaviour BEHAVIOUR
DEFINED AS "This error is sent to the Managing System when a CMIP request would cause an object to point to an object instance which is either non-existent, not of an appropriate type or not in an appropriate state. The invalid reference pointer value (an object instance name) of the request is returned to the managing system along with the error message.";;
REGISTERED AS {cAISDNParameter 1};

11 Name Bindings

11.1 Catalogued Access Port ISDN

cataloguedAccessPortISDN-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS cataloguedAccessPortISDN AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "CCITT Rec. M.3100":managedElement AND SUBCLASSES;
WITH ATTRIBUTE cataloguedAccessPortISDNId;
CREATE;
DELETE;
REGISTERED AS {cAISDNNameBinding 3};

11.2 Calling Number Screening

callingNumberScreening-accessPortProfileISDN NAME BINDING
SUBORDINATE OBJECT CLASS callingNumberScreening AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS accessPortProfileISDN AND SUBCLASSES;
WITH ATTRIBUTE callingNumberScreeningId;
CREATE
WITH-AUTOMATIC-INSTANCE-NAMING,
WITH-REFERENCE-OBJECT;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {cAISDNNameBinding 4};

11.3 Catalogued Access Port Profile ISDN Primary Rate

cataloguedAccessPortProfileISDN-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS cataloguedAccessPortProfileISDN AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "CCITT Rec. M.3100(1992)":managedElement AND SUBCLASSES;
WITH ATTRIBUTE cataloguedAccessPortProfileISDNId;
CREATE;
DELETE;
REGISTERED AS {cAISDNNameBinding 5};

11.4 Catalogued Layer Entity LAPD

```
cataloguedLayerEntityLAPD-managedElement                    NAME BINDING
        SUBORDINATE OBJECT CLASS cataloguedLayerEntityLAPD AND SUBCLASSES;
        NAMED BY
        SUPERIOR OBJECT CLASS "CCITT Rec. M.3100(1992)":managedElement AND SUBCLASSES;
        WITH ATTRIBUTE cataloguedLayerEntityLAPDId;
        CREATE;
        DELETE;
REGISTERED AS   {cAISDNNameBinding 6};
```

11.5 Catalogued Layer Entity DSS 1

```
cataloguedLayerEntityDSS1-managedElement      NAME BINDING
        SUBORDINATE OBJECT CLASS cataloguedLayerEntityDSS1 AND SUBCLASSES;
        NAMED BY
        SUPERIOR OBJECT CLASS "CCITT Rec. M.3100":managedElement AND SUBCLASSES;
        WITH ATTRIBUTE cataloguedLayerEntityDSS1Id;
        CREATE;
        DELETE;
REGISTERED AS   {cAISDNNameBinding 7};
```

11.6 Terminal Configuration

```
terminalConfiguration-managedElement NAME BINDING
        SUBORDINATE OBJECT CLASS terminalConfiguration AND SUBCLASSES;
        NAMED BY
        SUPERIOR OBJECT CLASS "CCITT Rec. M.3100(1992)":managedElement AND SUBCLASSES;
        WITH ATTRIBUTE terminalConfigurationId;
        CREATE;
        DELETE;
REGISTERED AS   {cAISDNNameBinding 11};
```

11.7 Terminal Service Profile

```
terminalServiceProfile-managedElement NAME BINDING
        SUBORDINATE OBJECT CLASS terminalServiceProfile AND SUBCLASSES;
        NAMED BY
        SUPERIOR OBJECT CLASS "CCITT Rec. M.3100(1992)":managedElement AND SUBCLASSES;
        WITH ATTRIBUTE terminalServiceProfileId;
        CREATE;
        DELETE;
REGISTERED AS   {cAISDNNameBinding 12};
```

11.8 X.25 Network User Identification

```
x25NetworkUserIdentification-accessPortProfileISDN    NAME BINDING
        SUBORDINATE OBJECT CLASS x25NetworkUserIdentification AND SUBCLASSES;
        NAMED BY
        SUPERIOR OBJECT CLASS accessPortProfileISDN 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   {cAISDNNameBinding 13};
```

11.9 Layer Entity X25PLP Shared

```
layerEntityX25PLPShared-managedElement  NAME BINDING
        SUBORDINATE OBJECT CLASS layerEntityX25PLPShared AND SUBCLASSES;
```

NAMED BY
SUPERIOR OBJECT CLASS managedElement AND SUBCLASSES;
WITH ATTRIBUTE layerEntityId;
CREATE;
DELETE;
REGISTERED AS {cACommonNameBinding 14};

12 Service Provisioning Actions

12.1 Change Directory Number

changeDirectoryNumber ACTION
BEHAVIOUR
changeDirectoryNumberBhv BEHAVIOUR
DEFINED AS "This action is used to change the Directory Number for a given customer service. The action request identifies the customer service with the old Directory Number Name. The request also indicates the new Directory Number Name to use and the intercept Treatment Termination to apply to the old Directory Number Name.

The action verifies that the old directoryNumberName is in service, and that the new Directory NumberName and interceptTreatment are valid. The new directoryNumberName is considered valid if it exists and does not have a relationship with a customerProfile or its subclasses (it is not in service). If not, the agent returns an invalid reference error.

The action sets the interceptTreatmentOrigin and interceptTreatmentTerm of the new Directory NumberName based on the values of those attributes of the old DirectoryNumberName and then sets the value of interceptTreatmentTerm of the old DirectoryNumberName to the value provided by the action request information.

Moreover, the relationship of the customerProfile or its subclasses associated with the old DirectoryNumberName is deleted and replaced by a relationship with the old DirectoryNumberName.";;
MODE CONFIRMED;
WITH INFORMATION SYNTAX
SpmAttributeModule.ChangeDirectoryNumberRequest;
REGISTERED AS {cAISDNAction 1};

12.2 Establish ISDN Access

establishISDNAccess ACTION
BEHAVIOUR
establishISDNAccessBhv BEHAVIOUR
DEFINED AS "The action first verifies that the access port trail termination point name identified in the service is valid. If it is not valid the agent returns an invalid reference error. The access port trail termination point name is considered valid if all of the following conditions are met:

- **an instance of accessPortTrailTerminationPoint exists for the name provided in the action;**
- **the accessPortTrailTerminationPoint can support ISDN services.**

Depending on the actual syntax selected, a different behaviour will apply for the remaining of the action execution:

- **if a servicePackage is provided, the service is instantiated based on the definition provided by a service package and the instantiateISDNAccesslServicePackageBehaviour applies;**
- **if a copyCommand is selected, the service is instantiated based on the definition provided by an already existing service and the copyISDNAccessCommandBehaviour applies.**

In all cases, if the action is successful, the reply will indicate so and will also contain the list of names of the object instances just created. Otherwise the action leaves the MIB unaffected (unchanged) and returns the specified error message .";,

copyISDNAccessCommandBehaviour BEHAVIOUR
DEFINED AS "The action verifies that the source Access Port Profile Name in the service is valid. If it is not valid the agent returns an invalid reference error. The existing Access Port Profile Name is considered valid if it exists and supports ISDN service.

The action creates a duplicate of the accessPortProfile subtree of the service identified by the existing Acces Port Profile Name.";,

instantiateISDNAccessServicePackageBhv BEHAVIOUR

DEFINED AS "The action determines the existence of the service package name provided in the action request parameters. If it does not exist, the agent returns an invalid reference error.

The action creates a duplicate of the accessPortProfile containment subtree of the service package for use by the new service.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX

CAISDNAttributeModule.EstablishISDNAccessRequest;

WITH REPLY SYNTAX CAISDNAttributeModule.CreatedInstancesName;

REGISTERED AS {cAISDNAction 2};

12.3 Remove ISDN Access

removeISDNAccess ACTION

BEHAVIOUR

removeISDNAccessBhv BEHAVIOUR

DEFINED AS "This action removes an ISDN Access that is not associated with any CustomerProfile. In addition, all contained object classes, and all associated supplementary service object classes based on the Access Port Profile Name parameter in the action request.

The action verifies that the access port service profile name exists, and that there are no associated customer profiles. If not the agent returns an invalid reference error.

The name of all the deleted object instances is sent back as a reply to the managing system.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX

CAISDNAttributeModule.RemoveISDNAccessRequest;

WITH REPLY SYNTAX CAISDNAttributeModule.DeletedInstancesName;

REGISTERED AS {cAISDNAction 3};

12.4 Establish ISDN Service

establishISDNService ACTION

BEHAVIOUR

establishISDNServiceBhv BEHAVIOUR

DEFINED AS "The action first verifies that the directory number name(s) and termination point name identified in the service are valid. If either is not valid the agent returns an invalid reference error. The directory number name is considered valid if it exists and does not have a relationship with a customerProfile or its subclasses and its administrative state is unlocked. The termination point name is considered valid if all of the following conditions are met:

- **an instance of accessPortTrailTerminationPoint exists for the termination point name provided in the action;**
- **the accessPortTrailTerminationPoint can support ISDN services, either with or without a physical line card change.**

Depending on the actual syntax selected, a different behaviour will apply for the remaining of the action execution:

- **if a servicePackage is provided, the service is instantiated based on the definition provided by a service package and the instantiateServicePackageBehaviour applies;**
- **if a copyCommand is selected, the service is instantiated based on the definition provided by an already existing service and the copyCommandBehaviour applies.**

In all cases, if the action is successful, the reply will indicate so and will also contain the list of names of the object instances just created. Otherwise the action leaves the MIB unaffected (unchanged) and returns the specified error message.";,

copyISDNServiceCommandBehaviour BEHAVIOUR

DEFINED AS "The action verifies that the existing Customer Profile, Directory Number Name(s) and existing Termination Point Name identified in the service are valid. If any are not valid the agent returns an invalid reference error. The existing Directory Number Name(s) is considered valid if it exists and it is in service (has a relationship with the specified customerProfile and an accessPortProfile) on the specified existing Termination Point Name.

If the existing Termination Point Name is not provided, the existing Directory Number Name(s) must be in service on only one office equipment. Otherwise, the agent returns an invalid reference error with a NULL value for the Existing Service Office Equipment Number Name.

The action creates a duplicate of the customerProfile or its subclasses and accessPortProfile containment subtrees of the service identified by the existing Directory Number Name and existing Termination Point Name (if provided) for use by the new service, and create the following relationships:

- **directoryNumber - customerProfile or its subclasses**
- **customerProfile or its subclasses - accessPortProfile**
- **accessPortProfile - accessPortTrailTerminationPoint.**

If an accessPortProfile already exists in association with the accessPortProfileTrailTerminationPoint, then a new one does not need to be instantiated.";;

MODE CONFIRMED;
WITH INFORMATION SYNTAX
CAISDNAttributeModule.EstablishISDNServiceRequest;
WITH REPLY SYNTAX CAISDNAttributeModule.CreatedInstancesName;
REGISTERED AS {cAISDNAction 4};

12.5 Remove ISDN Service

removeISDNService ACTION
BEHAVIOUR
removeISDNServiceBhv BEHAVIOUR
DEFINED AS "This action removes an ISDN Service based on the Directory Number Name and Bearer Service parameters in the action request. Removing an ISDN Service consists of removing the Bearer Service, all contained objects, and all associated supplementary service objects. If the last bearer service is removed, the Customer profile or its subclasses object that contained the removed bearer service is also removed.

The action verifies that the directory number name exists. If not the agent returns an invalid reference error.

The name of all the deleted object instances is sent back as a reply to the managing system.";;

MODE CONFIRMED;
WITH INFORMATION SYNTAX
CAISDNAttributeModule.RemoveISDNServiceRequest;
WITH REPLY SYNTAX CAISDNAttributeModule.DeletedInstancesName;
REGISTERED AS {cAISDNAction 5};

12.6 Establish ISDN Terminal

establishISDNTerminal ACTION
BEHAVIOUR
establishISDNTerminalBhv BEHAVIOUR
DEFINED AS "The action first verifies that the TSPID and access port profile name identified in the service are valid. If either is not valid the agent returns an invalid reference error. TSPID is considered valid if it is not assigned in to any existing TSP object instance. The access port profile name is considered valid if all of the following conditions are met:

- **an instance of accessPortProfile exists for the name provided in the action;**
- **the accessPortProfile can support ISDN services.**

Depending on the actual syntax selected, a different behaviour will apply for the remaining of the action execution:

- **if a ""servicePackage"" is provided, the service is instantiated based on the definition provided by a service package and the instantiateISDNTerminalServicePackageBehaviour applies;**
- **if a ""copyCommand"" is selected, the service is instantiated based on the definition provided by an already existing service and the copyISDNTerminalCommandBehaviour applies.**

In all cases, if the action is successful, the reply will indicate so and will also contain the list of names of the object instances just created. Otherwise the action leaves the MIB unaffected (unchanged) and returns the specified error message .";,

copyISDNTerminalCommandBhv BEHAVIOUR
DEFINED AS "The action verifies that the source Terminal Service Profile Name in the service is valid. If it is not valid the agent returns an invalid reference error. The existing Terminal Service Profile Name is considered valid if it exists.

The action creates a duplicate of the terminalServiceProfile subtree of the service identified by the existing Terminal Service Profile Name.";,

instantiateISDNTerminalServicePackageBhv BEHAVIOUR
DEFINED AS "The action determines the existence of the service package and (optional) terminal configuration names provided in the action request parameters. If either does not exist, the agent returns an invalid reference error.

The action creates a duplicate of the terminalServiceProfile containment subtree of the service package for use by the new service.";;

MODE CONFIRMED;
WITH INFORMATION SYNTAX
CAISDNAttributeModule.EstablishISDNTerminalRequest;
WITH REPLY SYNTAX CAISDNAttributeModule.CreatedInstancesName;
REGISTERED AS {cAISDNAction 6};

12.7 Remove ISDN Terminal

removeISDNTerminal ACTION
BEHAVIOUR
removeISDNTerminalBhv BEHAVIOUR
DEFINED AS "This action removes a Terminal Service Profile, all contained objects, and all associated supplementary service objects based on the Terminal Service Profile Name parameter in the action request.

The action verifies that the terminal service profile name exists. If not the agent returns an invalid reference error.

The name of all the deleted object instances is sent back as a reply to the managing system.";;

MODE CONFIRMED;
WITH INFORMATION SYNTAX
CAISDNAttributeModule.RemoveISDNTerminalRequest;
WITH REPLY SYNTAX CAISDNAttributeModule.DeletedInstancesName;
REGISTERED AS {cAISDNAction 7};

12.8 Retrieve Service

retrieveService ACTION
BEHAVIOUR
retrieveCustomerServiceBhv BEHAVIOUR
DEFINED AS "This action is used to retrieve a customer service identified by either the Directory Number Name or the Termination Point Name. When both are present, only the part of the service common to both will be retrieved.

If either the Directory Number Name or the Termination Point Name do not exist, no service exists and the agent returns an invalid reference error. If the Directory Number Name is not in service on the specified Termination Point Name then an invalid Reference error is returned to the managing system.

Otherwise, the action is successful and linked replies contain the objects in the customer service profile according to the following rules:

If the action request contains only the directory number name, then the object instances returned are all of the following:

- **the directoryNumber,**
- **the customerProfile or its subclasses related to the directoryNumber, and its contained object instances,**
- **all the accessPortProfiles related to the customerProfile or its subclasses, and their contained object instances,**
- **the terminationPoints related to all the accessPortProfiles.**

If the action request contains only the termination point name, then the object instances returned are all of the following:

- **the terminationPoint with the attribute officeEquipment equal to that of the action request parameter,**
- **the accessPortProfile related to the terminationPoint, and its contained object instances,**
- **all the customerProfile or its subclassess related to the accessPortProfile, and their contained object instances,**
- **the directoryNumbers related to all the customerProfile or its subclassess.**

If the action request contains both the directory number name and the termination point name, then the object instances returned are all of the following:

- **the directoryNumber,**
- **the customerProfile or its subclasses related to the directoryNumber, and its contained object instances,**
- **the terminationPoint with the attribute officeEquipment equal to that of the action request parameter,**
- **the accessPortProfile related to the terminationPoint, and its contained object instances.";;**

MODE CONFIRMED;
WITH INFORMATION SYNTAX
CAISDNModule. RetrieveCustomerServiceRequest;
WITH REPLY SYNTAX CAISDNModule. RetrieveCustomerServiceReply;
REGISTERED AS {cAISDNAction 8};

13 Type Definitions

CAISDNModule {itu-t(0) recommendation(0) q(17) ca(824) dot(127) isdn(1) informationModel(0) asn1Modules(2) cAISDNModule(0)}

DEFINITIONS ::= BEGIN

-- *EXPORTS Everything;*

IMPORTS
InterceptTreatmentTerm,
NumberOfBChannels,
DirectoryNumber,
DirectoryNumberList
FROM CACommonModule {itu-t(0) recommendation(0) q(17) ca(824) dot(127) common(0) informationModel(0) asn1Modules(2) cACommonModule(0)}

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

k,
n1,
n2,
sequenceModulus,
t1Timer,
t2Timer,
t3Timer,
t4Timer
FROM DLM {joint-iso-ccitt network-layer(15) management(0) asn1Module(2) 0}

dBitModification,
defaultPacketSize,
defaultThroughputClass,
defaultWindowSize,
extendedPacketSequencing,
fastSelectAcceptance,
flowControlParameterNegotiation,
nonStandardDefaultPacketSizes,
nonStandardDefaultWindowSizes,
onlineFacilityRegistration,
packetRetransmission,
throughputClassNegotiation
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,
ChannelNumber,
NameType,
ObjectList,
Pointer,

```
PointerOrNull
FROM ASN1DefinedTypesModule {ccitt recommendation m(13) gnm(3100) informationModel(0) asn1Modules(2)
asn1DefinedTypesModule(0)};

q824-1InformationModel OBJECT IDENTIFIER ::= {itu-t(0) recommendation(0) q(17) ca(824) dot(127) isdn(1)
informationModel(0)}
cAISDNObjectClass OBJECT IDENTIFIER ::= {q824-1InformationModel managedObjectClass(3)}
cAISDNPackage OBJECT IDENTIFIER ::= {q824-1InformationModel package(4)}
cAISDNParameter OBJECT IDENTIFIER ::= {q824-1InformationModel parameter(5)}
cAISDNAttribute OBJECT IDENTIFIER ::= {q824-1InformationModel attribute(7)}
cAISDNNameBinding OBJECT IDENTIFIER ::= {q824-1InformationModel nameBinding(6)}
cAISDNAction OBJECT IDENTIFIER ::= {q824-1InformationModel action(9)}

-- default value definitions --
false Boolean ::= FALSE
true Boolean ::= TRUE
null NULL ::= NULL
minusOne INTEGER ::= –1
emptySet AccessChannelPtrList ::= { }
two INTEGER ::= 2
baud9600 ThruputClass ::= baud9600
size128 PacketSize ::= size128
dte84 DTECompatibility ::= dte84
linkOptionDefault LinkOption ::= dynamic :{callControlTEItotal      64
                                           callControlTEIsw       63
                                           packTEItotal           64
                                           packTEIsw              63}

-- supporting productions --

DTECompatibility ::= ENUMERATED {
        dte80           (0),
        dte84           (1),
        dte88           (2),
        dte93           (3)
        }
AccessChannelPtrList    ::= SET OF ObjectInstance
ActiveTerminalList ::= SET OF SEQUENCE {
        spid                [0]  ServiceProfileIdentifier,
        tei                 [1]  TerminalEndPointIdentifier,
        usid                [2]  UserServiceId }
AppearanceInfo ::= SEQUENCE {
        callAppearanceId        CallAppearanceIdentifier,
        defaultBearerService    BearerService}
AssignmentOfTimeslots   ::= ENUMERATED {
        fixed           (0),
        floating        (1),
        flexible        (2)}
BearerServiceList       ::= SET OF BearerService
BearerService ::=       ENUMERATED {
                        speech(0),
                        audio3D1(1),
                        audio7(2),
                        audioComb(3),
                        cmd56(4),
                        cmd64(5),
                        cmdComb(6)}
BitRateOfPrimaryRateInterface ::= ENUMERATED{
                                  bitRate1544   (0)
                                  bitRate2048   (1)}
CallAppearanceIdentifier ::= INTEGER
CallingPartyDefaultDirectoryNumber ::= CHOICE {
        noDefault           NULL,
        directoryNumber     DirectoryNumber,        -- ALL Bearer Services
        perBearerService    SET OF SEQUENCE {
            directoryNumber     DirectoryNumber,
            bearerService       BearerService}}
```

```
CallingPartyValidDirectoryNumberList ::= SET OF DirectoryNumber
ChangeDirectoryNumberRequest ::= SEQUENCE {
        oldDirectoryNumberName      ObjectInstance,
        oldDirectoryNumberIntercept InterceptTreatmentTerm,
        newDirectoryNumberName      ObjectInstance}
ChannelSelection ::= ENUMERATED {byNetwork (0), byUser (1)}
CopyISDNAccessCommandDescription ::= SEQUENCE {
        sourceAPPName           ObjectInstance,
        tpNameList              SET OF ObjectInstance}
CopyISDNServiceCommandDescription ::= SEQUENCE {
        sourceCustomerProfileName       ObjectInstance,
        accessPortName                  ObjectInstance,
        resourceDescription             SET OF SEQUENCE {
                                        sourceDirectoryNumber  ObjectInstance,
                                        newDirectoryNumber  ObjectInstance}}
CopyISDNTerminalCommandDescription ::= SEQUENCE {
        sourceTerminalName      ObjectInstance,
        aPPName                 ObjectInstance,
        sPId                    IA5String (SIZE(1..18))}
CreatedInstancesName ::= SET OF ObjectInstance
DChannelT3xx ::= INTEGER -- number of seconds
DeletedInstancesName ::= SET OF ObjectInstance
DirectoryNumberAppearanceIdentifierList ::= SEQUENCE {
        directoryNumber         DirectoryNumber,
        COMPONENTS OF AppearanceInfo}
DirectoryNumberReference ::= SEQUENCE {dnr INTEGER (1..128),
                                       dn DirectoryNumber,
                                       bs BearerService}
Dynamic ::= SEQUENCE {
callControlTEItotal     INTEGER,  --  total number of TEIs that can be assigned to signalling
callControlTEIsw        FlexType,
packTEItotal        INTEGER,  --  total number of TEIs that can be assigned to the packet.
packTEIsw           FlexType}
EstablishISDNAccessRequest ::= CHOICE {
        servicePackageISDNAccess        [0] ServicePackageISDNAccessDescription,
        copyISDNAccessCommand           [1] CopyISDNAccessCommandDescription }
EstablishISDNServiceRequest ::= CHOICE {
        servicePackageISDN              [0] ServicePackageISDNDescription,
        copyISDNServiceCommand          [1] CopyISDNServiceCommandDescription }
EstablishISDNTerminalRequest ::= CHOICE {
        servicePackageISDNTerminal      [0] ServicePackageISDNTerminalDescription,
        copyISDNTerminalCommand         [1] CopyISDNTerminalCommandDescription }
FlexType ::= CHOICE {
                switchAssigned      INTEGER,
                uncontrolled        NULL}
MasterFeatureList ::= GraphicString(SIZE(1 .. 7))
FeatureActivatorValue ::= INTEGER(0..16383)
FeatureActivatorsAllDirectoryNumber ::= SET OF SEQUENCE {
        featureActivatorValue       FeatureActivatorValue,
        masterFeatureList           MasterFeatureList}
FeatureActivatorsPerDirectoryNumber ::= SET OF SEQUENCE {
        featureActivatorValue       FeatureActivatorValue,
        directoryNumberReference    INTEGER(1..128),
        masterFeatureList           MasterFeatureList}
FeatureIndicatorsAllDirectoryNumber ::= SET OF SEQUENCE {
        featureActivatorValue       FeatureActivatorValue,
        masterFeatureList           MasterFeatureList}
FeatureIndicatorsPerDirectoryNumber ::= SET OF SEQUENCE {
        featureActivatorValue       FeatureActivatorValue,
        directoryNumberReference    INTEGER(1..128),
        masterFeatureList           MasterFeatureList}
InterfaceType ::= ENUMERATED {
        basic       (0),
        primary     (1)
        }
```

```
LinkOption      ::= CHOICE {fixed NULL, dynamic Dynamic}
MaxBitsPerInformationFrame::= INTEGER
MaxCombinedThruputClass   ::= CHOICE {
maxCombinedThruput    MaxCombinedThruput,
        null                  NULL}
MaxCombinedThruput ::= ENUMERATED {
baud16000                     (0),
baud18000                     (1),
baud20000                     (2),
baud22000                     (3),
baud24000                     (4),
baud26000                     (5),
baud28000                     (6),
baud30000                     (7),
baud32000                     (8),
baud64000                     (9),
baud72000                     (10),
baud80000                     (11),
baud88000                     (12),
baud96000                     (13),
baud104000                    (14),
baud112000                    (15),
baud120000                    (16),
baud128000                    (17)
}
MaxNumberOfCallReference ::= INTEGER
MaxTransmissionAttempts     ::= INTEGER
NotificationClass ::= ENUMERATED {
                noNotificationClass(1),          -- without notification
                conditionalNotificationClass(2),  -- with conditional notification
                unconditionalNotificationClass(3)}
NumberOfDChannelLinks ::= INTEGER (1..256)
PacketSize ::= ENUMERATED {
size16                  (0),
size32                  (1),
size64                  (2),
size128                 (3),
size256                 (4),
size512                 (5),
size1024                (6),
size2048                (7),
size4096                (8)}
PossibleServicePackages         SERVICE-PACKAGE-SPECIFIC-DATA ::= {...}
PrimaryIC       ::= IA5String
RemoveISDNAccessRequest ::= ObjectInstance
RemoveISDNServiceRequest ::= SEQUENCE {
        directoryNumberName   ObjectInstance,
        bearerServiceName ObjectInstance}
RemoveISDNTerminalRequest ::= ObjectInstance
RetrieveCustomerServiceRequest ::= SEQUENCE {
        tpName                [0] ObjectInstance OPTIONAL,
        directoryNumber       [1] ObjectInstance OPTIONAL,
        partyLineIdentifier   [2] PartyLineIdentifier OPTIONAL
--      PartyLineIdentifier is a parameter required to identify a particular customer when muliple customers are
--      provided service on a single analog line.
        }
RetrieveCustomerServiceReply ::= SET OF ObjectInstance
SemiPermAccessPacketHandlerDefaultDirectoryNumber ::= SET OF
                SEQUENCE { defaultDirectoryNumber  DirectoryNumber,
                        bChannel          ChannelNumber}
ServiceProfileIdentifier ::= CHOICE {
        null                  NULL,
        spid                  IA5String(SIZE(3 .. 20))}
ServicePackageISDNAccessDescription ::= SEQUENCE {
        servicePackageName    ObjectInstance,
        accessPortName    ObjectInstance}
ServicePackageISDNDescription ::= SEQUENCE {
        servicePackageName
```

```
        SERVICE-PACKAGE-SPECIFIC-DATA. & servicePackageName ({PossibleServicePackages}),
        accessPortName      ObjectInstance,
        serviceDescription  SET OF SEQUENCE {
            templateDirectoryNumberName     ObjectInstance,
            directoryNumberName             ObjectInstance,
            serviceRequestInfo
        SERVICE-PACKAGE-SPECIFIC-DATA. & ServiceRequestInfo ({PossibleServicePackages}
{@service PackageName})     OPTIONAL}}
ServicePackageISDNTerminalDescription ::= SEQUENCE {
        servicePackageName      ObjectInstance,
        aPPName                 ObjectInstance,
        sPId                            IA5String (SIZE(1..18)),
        terminalConfigurationName   ObjectInstance OPTIONAL}
TerminalEndPointIdentifier  ::= CHOICE { auto  NULL,
                                         non-Auto  INTEGER(0...126)}
TerminalLimit ::= INTEGER(0..62)
TerminalServiceProfilePtrList ::= SET OF ObjectInstance
ThruputClass ::= ENUMERATED {
baud75                  (0),
baud150                 (1),
baud300                 (2),
baud600                 (3),
baud1200                (4),
baud2400                (5),
baud4800                (6),
baud9600                (7),
baud19200               (8),
baud48000               (9),
baud56000               (10),
baud64000               (11)}
TSPID ::= IA5String (SIZE(1..18))
UserServiceId ::= CHOICE {
        null                NULL,
        uid                 INTEGER(0 .. 126)}
WindowSize    ::= CHOICE    {lowRange       [0] INTEGER(1..7),
                             highRange      [1] INTEGER(61..167)}
```

END -- *Type definitions* --

14 Actions

This clause contains the parameter templates for the services defined in the previous clauses.

14.1 Conventions

The definition of each service in this Recommendation includes a table that lists the parameters of its primitives. For a given primitive, the presence of each parameter is described by one of the following values:

- M The parameter is mandatory.
- (=) The value of the parameter is equal to the body of the parameter in the column to the left.
- U Use of the parameter is a service-user option – the parameter is not present in the interaction.
- C The parameter is conditionally present – the conditions are defined by the text that describes the parameter.

14.2 Change Directory Number

The Change Directory Number service is used to allow a managing system (OS) to request a change in the directory number for a given customer service by the agent. This action uses the CMIS M-ACTION service. Table 1 gives the parameters for this action.

TABLE 1/Q.824.1

Change Directory Number Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
ChangeDirectoryNumberRequest	M	–
Old Directory Number Name	M	
Old Directory Number Intercept	M	
New Directory Number Name	M	
Current Time	–	U
Errors	–	C

14.3 Establish ISDN Access

The Establish ISDN Access service is used to allow a managing system (OS) to request that an ISDN Access service be created by the agent. This action uses the CMIS M-ACTION service. Table 2 gives the parameters for this action.

TABLE 2/Q.824.1

Establish ISDN Access Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Service Package ISDN Access	C1	–
Service Package Name	M	–
TP Name	M	–
Copy ISDN Access Command	C1	–
Source APP Name	M	–
tp Name List	M	–
Current Time	–	U
Action Result	–	M
Created Instances Name	–	M
Errors	–	C
C1 Either Service Package ISDN Access or Copy ISDN Access Command must be present.		

14.4 Establish ISDN Service

The Establish ISDN Service service is used to allow a managing system (OS) to request that an ISDN Service be created by the agent. This action uses the CMIS M-ACTION service. Table 3 gives the parameters for this action.

TABLE 3/Q.824.1

Establish ISDN Service Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Service PackageISDN	C1	–
Service Package Name	M	–
tp Name	M	–
Service Description	M	–
Copy ISDN Access Command	C1	–
Source Customer Profile Name	M	–
tp Name	M	–
Resource Description	M	–
Current Time	–	U
Action Result	–	M
Created Instances Name	–	M
Errors	–	C
C1 Either the Service Package ISDN or the Copy ISDN Service Command must be present.		

14.5 Establish ISDN Terminal

The Establish ISDN Terminal service is used to allow a managing system (OS) to request that an ISDN Terminal service be created by the agent. This action uses the CMIS M-ACTION service. Table 4 gives the parameters for this action.

TABLE 4/Q.824.1

Establish ISDN Terminal Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Service Package ISDN Terminal	C1	–
Service Package Name	M	–
APP Name	M	–
TSPID	M	–
Termination Configuration Name	U	–
Copy ISDN Terminal Command	C1	–
Source Terminal Name	M	–
APP Name	M	–
TSPID	M	–
Current Time	–	U
Action Result	–	M
Created Instances Name	–	M
Errors	–	C
C1 One of Service Package ISDN Terminal or Copy ISDN Terminal Command must be present.		

14.6 Remove ISDN Access

The Remove ISDN Access service is used to allow a managing system (OS) to request that an ISDN Access service be removed by the agent. This action uses the CMIS M-ACTION service. Table 5 gives the parameters for this action.

TABLE 5/Q.824.1

Remove ISDN Access Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Remove ISDN Access Request	M	–
Current Time	–	U
Action Result	–	M
Deleted Instances Name	–	M
Errors	–	C

14.7 Remove ISDN Service

The Remove ISDN Service service is used to allow a managing system (OS) to request that an ISDN Service be removed by the agent. This action uses the CMIS M-ACTION service. Table 6 gives the parameters for this action.

TABLE 6/Q.824.1

Remove ISDN Service Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Directory Number Name	M	–
Bearer Service	M	–
Current Time	–	U
Action Result	–	M
Remove Instances Name	–	M
Errors	–	C

14.8 Remove ISDN Terminal

The Remove ISDN Terminal service is used to allow a managing system (OS) to request that an ISDN Terminal service be removed by the agent. This action uses the CMIS M-ACTION service. Table 7 gives the parameters for this action.

TABLE 7/Q.824.1

Remove ISDN Terminal Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	C
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Remove ISDN Terminal	M	–
Current Time	–	U
Action Result	–	M
Delete Instances Name	–	M
Errors	–	C

14.9 Retrieve Customer Service

The RetrieveCustomerService service is used to allow a managing system (OS) to request to retrieve a customer service identified by either the Directory Number Name or the Termination Point Name. When both are present, only the common part of the service to both will be retrieved. This M-ACTION service does not modify any objects or attributes. Table 8 provides the parameters for this action.

TABLE 8/Q.824.1

Retrieve Customer Service Parameters

Parameter name	Req./Ind.	Rsp./Cnf.
Invoke Identifier	M	M=
Linked Identifier	–	M
Mode	M	–
Base Object Class	M	–
Base Object Instance	M	–
Scope	U	–
Filter	U	–
Managed Object Class	–	C
Managed Object Instance	–	C
Access Control	U	–
Synchronization	U	–
Action Type	M	C(=)
Action Information	M	–
Termination Point Name	U	–
Directory Number Name	U	–
Party Line Identifier	U	–
Current Time	–	U
Action Result	–	M
RetrieveCustomerServiceReply	–	M
Errors	–	C