UNIÓN INTERNACIONAL DE TELECOMUNICACIONES

# UIT-T

## Q.824.6
(06/98)

SECTOR DE NORMALIZACIÓN
DE LAS TELECOMUNICACIONES
DE LA UIT

SERIE Q: CONMUTACIÓN Y SEÑALIZACIÓN

Especificaciones del sistema de señalización N.° 7 –
Interfaz Q3

# Descripción de la etapa 2 y de la etapa 3 para la interfaz Q.3 – Administración de los clientes: Gestión de conmutadores de banda ancha

Recomendación UIT-T Q.824.6

(Anteriormente Recomendación del CCITT)

# RECOMENDACIONES DE LA SERIE Q DEL UIT-T

## CONMUTACIÓN Y SEÑALIZACIÓN

*Para más información, véase la Lista de Recomendaciones del UIT-T.*

# RECOMENDACIÓN UIT-T  Q.824.6

## DESCRIPCIÓN DE LA ETAPA 2 Y DE LA ETAPA 3 PARA LA INTERFAZ Q.3 – ADMINISTRACIÓN DE LOS CLIENTES: GESTIÓN DE CONMUTADORES DE BANDA ANCHA

**Orígenes**

La Recomendación UIT-T Q.824.6 ha sido preparada por la Comisión de Estudio 4 (1997-2000) del UIT-T y fue aprobada por el procedimiento de la Resolución N.° 1 de la CMNT el 26 de junio de 1998.

PREFACIO

La UIT (Unión Internacional de Telecomunicaciones) es el organismo especializado de las Naciones Unidas en el campo de las telecomunicaciones. El UIT-T (Sector de Normalización de las Telecomunicaciones de la UIT) es un órgano permanente de la UIT. Este órgano estudia los aspectos técnicos, de explotación y tarifarios y publica Recomendaciones sobre los mismos, con miras a la normalización de las telecomunicaciones en el plano mundial.

La Conferencia Mundial de Normalización de las Telecomunicaciones (CMNT), que se celebra cada cuatro años, establece los temas que han de estudiar las Comisiones de Estudio del UIT-T, que a su vez producen Recomendaciones sobre dichos temas.

La aprobación de Recomendaciones por los Miembros del UIT-T es el objeto del procedimiento establecido en la Resolución N.° 1 de la CMNT.

En ciertos sectores de la tecnología de la información que corresponden a la esfera de competencia del UIT-T, se preparan las normas necesarias en colaboración con la ISO y la CEI.

NOTA

En esta Recomendación, la expresión "Administración" se utiliza para designar, en forma abreviada, tanto una administración de telecomunicaciones como una empresa de explotación reconocida de telecomunicaciones.

PROPIEDAD INTELECTUAL

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*(Ginebra, 1998)*

# 1 Introducción

## 1.1 Alcance

La presente Recomendación especifica la interfaz Q.3 entre un conmutador ATM y la red de gestión de las telecomunicaciones (RGT). La interfaz especificada es la que se encuentra entre elementos de red de la RGT o adaptadores Q que interconectan con sistemas de operaciones (OS, *operation systems*) de la RGT sin mediación y entre OS y dispositivos de mediación, como se define en la Recomendación M.3010 [5].

La configuración mediante la gestión de canales de señalización, incluidos los de señalización de RDSI-BA, queda dentro del alcance de esta Recomendación. La gestión de la administración de los clientes de banda ancha y la configuración para el encaminamiento de llamadas, incluida la del interfuncionamiento con conmutadores de banda estrecha para interfaces de entrada y salida, queda también dentro del alcance de esta Recomendación.

Un conmutador ATM puede incluir la funcionalidad de transconexión ATM, pero esto se especifica por referencia a la Recomendación UIT-T relativa a elementos de red ATM [4] e importando las clases pertinentes de objetos gestionados donde proceda.

Los protocolos existentes se utilizan donde se puede, y el trabajo se centra sobre todo en la definición del modelo de objeto. La definición de la funcionalidad de los sistemas de operaciones de la RGT queda fuera del alcance de la presente Recomendación.

También queda fuera del alcance de esta Recomendación la gestión de la seguridad.

# 2 Referencias

Las siguientes Recomendaciones del UIT-T y otras referencias contienen disposiciones que, mediante su referencia en este texto, constituyen disposiciones de esta Recomendación. Al efectuar esta publicación, estaban en vigor las ediciones indicadas. Todas las Recomendaciones y otras referencias son objeto de revisiones por lo que se preconiza que los usuarios de esta Recomendación investiguen la posibilidad de aplicar las ediciones más recientes de las Recomendaciones y otras referencias citadas a continuación. Se publica periódicamente una lista de las Recomendaciones UIT-T actualmente vigentes.

[1]     Recomendación UIT-T I.311 (1996), *Aspectos generales de red de la red digital de servicios integrados de banda ancha RDSI-BA.*

[2]     Recomendación UIT-T I.363.5 (1996), *Especificación de la capa de adaptación del modo transferencia asíncrono de la red digital de servicios integrados de banda ancha: Capa de adaptación del modo transferencia asíncrono tipo 5.*

[3]     Recomendación UIT-T I.610 (1995), *Principios y funciones de operaciones y mantenimiento de la red digital de servicios integrados de banda ancha.*

[4]     Recomendación UIT-T I.751 (1996), *Gestión desde el punto de vista del elemento de red en modo de transferencia asíncrono.*

[5]     Recomendación UIT-T M.3010 (1996), *Principios para una red de gestión de las telecomunicaciones.*

[6]     Recomendación UIT-T M.3100 (1995), *Modelo genérico de información de red.*

[7]     Recomendación UIT-T Q.2110 (1994), *Protocolo con conexión específico de servicio para la capa de adaptación del modo de transferencia asíncrono de la red digital de servicios integrados de banda ancha.*

[8]     Recomendación UIT-T Q.2130 (1994), *Capa de adaptación del modo de transferencia asíncrono de la red digital de servicios integrados de banda ancha – Función de coordinación específica de servicio para soporte de señalización en la interfaz usuario a red.*

[9]     Recomendación UIT-T Q.2140 (1995), *Capa de adaptación del modo de transferencia asíncrono de la red digital de servicios integrados de banda ancha – Función de coordinación específica de servicio para señalización en la interfaz de nodo de red.*

[10]    Recomendaciones UIT-T Q.2761 (1995), Q.2762 (1995), Q.2763 (1995), Q.2764 (1995), *Grupo de Recomendaciones sobre RDSI-BA de la parte usuario de la red digital de servicios integrados de banda ancha del sistema se señalización N.º 7.*

[11]    Recomendación UIT-T Q.2931 (1995), *Sistema de señalización digital de abonado N.º 2 – Especificación de la capa 3 de la interfaz usuario-red para el control de llamada/conexión básica.*

[12]    Recomendación X.720 del CCITT (1992) | ISO/CEI 10165-1:1993, *Tecnología de la información – Interconexión de sistemas abiertos – Estructura de la información de gestión: Modelo de información de gestión.*

[13]    Recomendación X.721 del CCITT (1992) | ISO/CEI 10165-2:1992, *Tecnología de la información – Interconexión de sistemas abiertos – Estructura de la información de gestión: Definición de la información de gestión.*

[14]    Recomendación X.731 del CCITT (1992) | ISO/CEI 10164-2:1992, *Tecnología de la información – Interconexión de sistemas abiertos – Gestión de sistemas: Función de gestión de estados.*

[15]    Recomendación X.732 del CCITT (1992) | ISO/CEI 10164-3:1992, *Tecnología de la información – Interconexión de sistemas abiertos – Gestión de sistemas: Atributos para la representación de relaciones.*

[16]    Recomendación UIT-T Q.821 (1993), *Descripción de las etapas 2 y 3 de la interfaz Q3 – Vigilancia de alarmas.*

[17]    Especificación del Foro ATM af-nm-0027.000 (1995), CMIP specification for the M4 interface.

## 3       Definiciones, abreviaturas y convenios

## 3.1     Definiciones

En esta Recomendación, se definen los siguientes términos.

**3.1.1    conexión de canal virtual permanente**: Una VCC permanente es una conexión de circuito virtual establecida por la gestión de la configuración, no por el control de la llamada por demanda.

**3.1.2    camino de canal virtual**: Corresponde a una VCC en terminología ATM normalizada.

**3.1.3    punto de terminación de camino de canal virtual**: Corresponde al punto extremo de una VCC y marca la terminación de un flujo F5 OAM, de extremo a extremo.

**3.1.4    punto de terminación de conexión de canal virtual**: Corresponde a un punto intermedio de una VCC y puede marcar la terminación de un flujo F5 OAM de segmento.

**3.1.5    camino de trayecto virtual**: Corresponde a una VPC en terminología ATM normalizada.

**3.1.6    punto de terminación de camino de trayecto virtual**: Corresponde al punto extremo de una VPC y marca la terminación de un flujo F4 OAM de extremo a extremo.

**3.1.7    punto de terminación de conexión de trayecto virtual**: Corresponde a un punto intermedio de una VPC y puede marcar la terminación de un flujo F4 OAM de segmento.

Además, esta Recomendación utiliza términos definidos en otras Recomendaciones del UIT-T:

**flujo F4 OAM**: Véase la Recomendación I.610 [3].

**flujo F5 OAM:** Véase la Recomendación I.610 [3].

**punto de terminación de camino**: Véase la Recomendación M.3100 [6].

**canal virtual**: Véase la Recomendación I.311 [1].

**conexión de canal virtual**: Véase la Recomendación I.311 [1].

**trayecto virtual:** Véase la Recomendación I.311 [1].

**conexión de trayecto virtual**: Véase la Recomendación I.311 [1].


**3.2    Abreviaturas**

A los efectos de la presente Recomendación, se utilizan las siguientes abreviaturas:

NNI        Interfaz red-red (*network-network interface*)

TTP        Punto de terminación de camino (*trail termination point*)

UNI        Interfaz usuario-red (*user-network interface*)

VC         Canal virtual (*virtual channel*)

VCC        Conexión de canal virtual (*virtual channel connection*)

VP         Trayecto virtual (*virtual path*)

VPC        Conexión de trayecto virtual (*virtual path connection*)

## 3.3 Convenios

Los nombres de los objetos y sus características y la ASN.1 asociada que aquí se definen, figuran con inicial mayúscula para indicar el comienzo de la palabra siguiente y los acrónimos se tratan como si fueran palabras.

A lo largo de esta Recomendación, la denominación de los nuevos atributos se efectúa de acuerdo con las siguientes directrices:

–       El nombre de un atributo finaliza con la cadena "Ptr" si con el valor del atributo, y si sólo con el valor del atributo, se trata de identificar un único objeto.

–       El nombre de un atributo finaliza con la cadena "PtrList" si con el valor del atributo, y si sólo con el valor del atributo, se trata de identificar uno o más objetos.

–       El nombre de un atributo se compone del nombre de una clase de objetos seguido de la cadena "Ptr" si con el valor del atributo, y si sólo con el valor del atributo, se trata de identificar una clase de objeto específica.

–       Si con un atributo se trata de identificar clases de objetos diferentes, se da un nombre descriptivo de ese atributo y en el comportamiento (BEHAVIOUR) del atributo se hace una descripción al respecto.

–       El nombre de un atributo finaliza con la cadena "Id" si con el valor del atributo, y si sólo con el valor del atributo, se trata de identificar el nombre de un objeto, en cuyo caso este atributo deberá ser indicado el primero, deberá utilizar NameType (tipo de nombre) ASN.1 y no se deberá utilizar para llevar otra información.

–       El nombre de un atributo se compone del nombre de una clase de objeto seguido de la cadena "Id" si con el valor del atributo, y si sólo con el valor del atributo, se trata de identificar el nombre de la clase de objeto que tiene ese atributo.

## 4 Visión general

Los diagramas del modelo de información que siguen se han diseñado para aclarar las relaciones entre las diferentes clases de objetos del modelo.

1)      Modelos de relaciones entre entidades que muestran las relaciones de los diferentes objetos gestionados.

2)      Jerarquía de herencia que muestra cómo se derivan, unos de otros, los objetos gestionados (es decir, los diferentes trayectos de características heredadas de los diferentes objetos gestionados).

Los diagramas sólo tienen por objeto aclarar la exposición. La especificación formal, utilizando plantillas de directrices para la definición de objetos gestionados (GDMO, *guidelines for the definition of managed objects*) y las definiciones de tipos ASN.1 constituyen la información que interesa a efectos de las implementaciones.

## 4.1    Modelos de relaciones entre entidades

En los diagramas se utilizan los siguientes convenios:
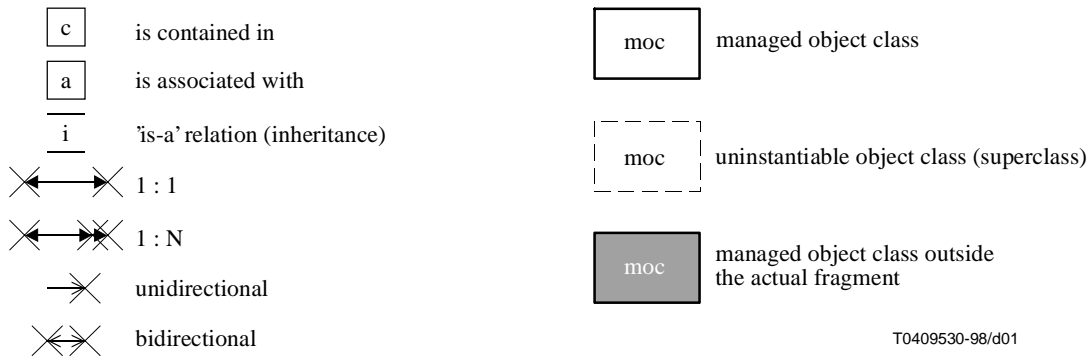


**Figura 1/Q.824.6 – Convenios utilizados en los diagramas de los modelos
de relación entre entidades**

Cuando la direccionalidad de la contenencia no está clara, se puede identificar por las implicaciones ya que la clase de raíz es única.

Los elementos de la red de conmutación ATM se presentan mediante instancias de la clase atmSwitch y ésta contiene, bien directamente o bien indirectamente, todos los demás objetos gestionados que representan partes del conmutador ATM.

### 4.1.1    Modelado genérico de ATM

El modelado de ATM está restringido a caminos bidireccionales por lo que siempre hay un canal hacia atrás a efectos de OAM.

Las interfaces con el elemento de red de conmutación ATM son las interfaces usuario-red (UNI, *user-network interface*) etiquetadas por instancias de la clase UNI, y las interfaces red-red (NNI, *network-network interface*) etiquetadas por instancias de la clase intraNNI si la interfaz está conectada al mismo operador de red que el elemento de red o por instancias de la clase interNNI si la interfaz está conectada a un operador de red diferente. Los objetos gestionados que etiquetan las interfaces están contenidos en la instancia de managedElementR1 que representa el conmutador ATM y apuntan a una instancia de clase tcAdaptorTTPBidirectional que representa la adaptación de la capa ATM a la infraestructura física subyacente.
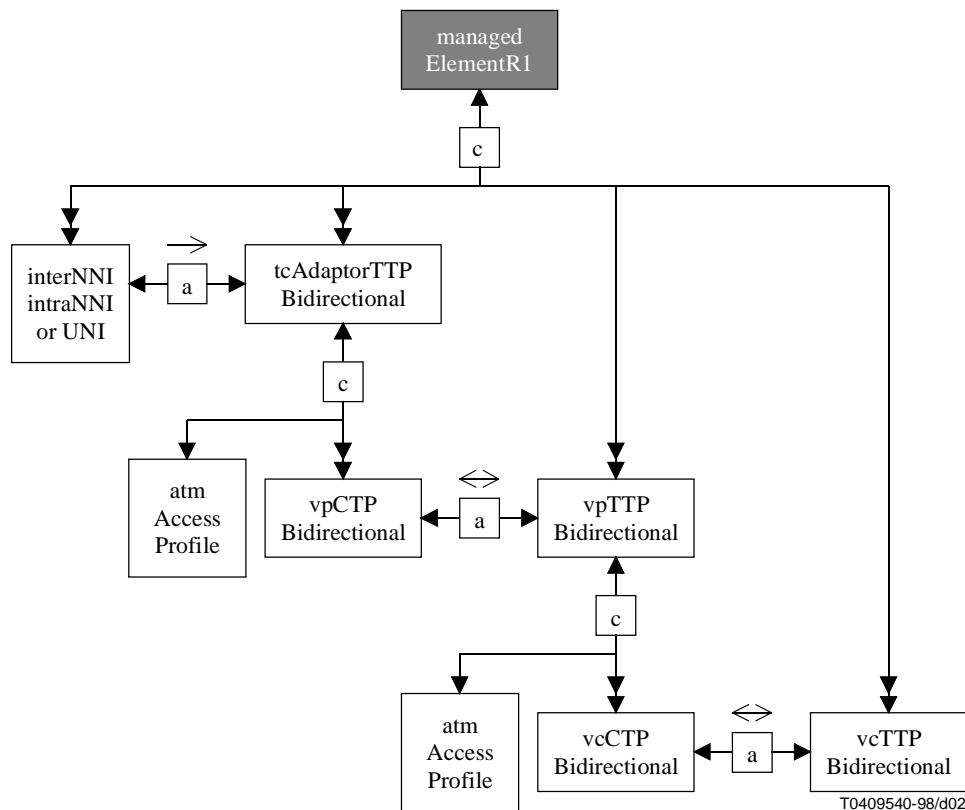
**Figura 2/Q.824.6 – Modelo de relaciones entre entidades – Interfaces ATM**

Las instancias de tcAdaptorTTPBidirectional están contenidas en la instancia de managedElementR1. La adaptación a una infraestructura física, representada por una instancia de tcAdaptorTTPBidirectional, sirve a varios caminos de trayecto virtual que pasan a través de la interfaz asociada. Los puntos intermedios de esos caminos, que son servidos por la adaptación, están representados por instancias de la clase vpCTPBidirectional, que están contenidas en la misma instancia de tcAdaptorTTPBidirectional. La instancia de tcAdaptorTTPBidirectional puede contener también una instancia de atmAccessProfile que caracteriza los trayectos virtuales.

Una instancia de atmAccessProfile puede estar contenida también en una instancia de vpTTPBidirectional, que representa el punto extremo de un camino de trayecto virtual, para caracterizar los canales virtuales servidos por el camino de trayecto virtual. Los puntos intermedios de los caminos de canal virtual están representados por instancias de vcTTPBidirectional, que están contenidas en la instancia de vpTTPBidirectional. Los puntos extremos de los caminos de canal virtual están representados por instancias de vcTTPBidirectional. Las instancias de vpTTPBidirectional y vcTTPBidirectional están contenidas en la instancia de managedElementR1.

Puntos extremos de caminos de trayecto virtual (vpTTPBidirectional) deben ser asociados directamente con puntos intermedios (vpCTPBidirectional) utilizando punteros recíprocos hacia arriba y hacia abajo. Estos punteros se han de utilizar para asociar los puntos extremos de caminos de conexiones virtuales (vcTTPBidirectional) con sus puntos intermedios (vcCTPBidirectional). Una transconexión flexible de dos puntos intermedios en el mismo nivel virtual (ya sea trayecto o canal) viene representada por una instancia de atmCrossConnection. Estas instancias están contenidas en una instancia de atmFabric que representa la gestión de la funcionalidad de transconexión y que está contenida en la instancia de managedElementR1. Los punteros hacia arriba y hacia abajo se pueden utilizar para asociar un objeto punto de terminación de conexión (CTP, *connection termination point*) con un objeto TTP, o para asociar objetos CTP en una transconexión, pero no ambas cosas simultáneamente.
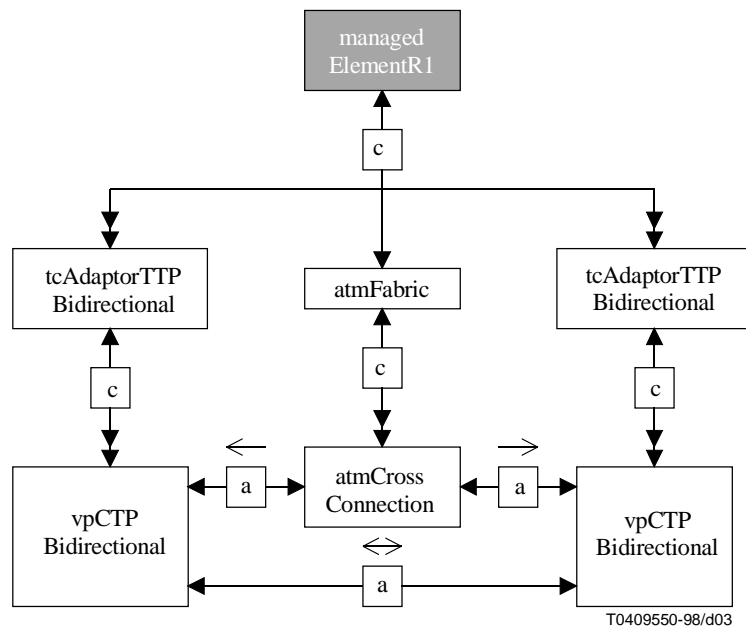
**Figura 3/Q.824.6 – Ejemplo de instanciación – Transconexión VP**
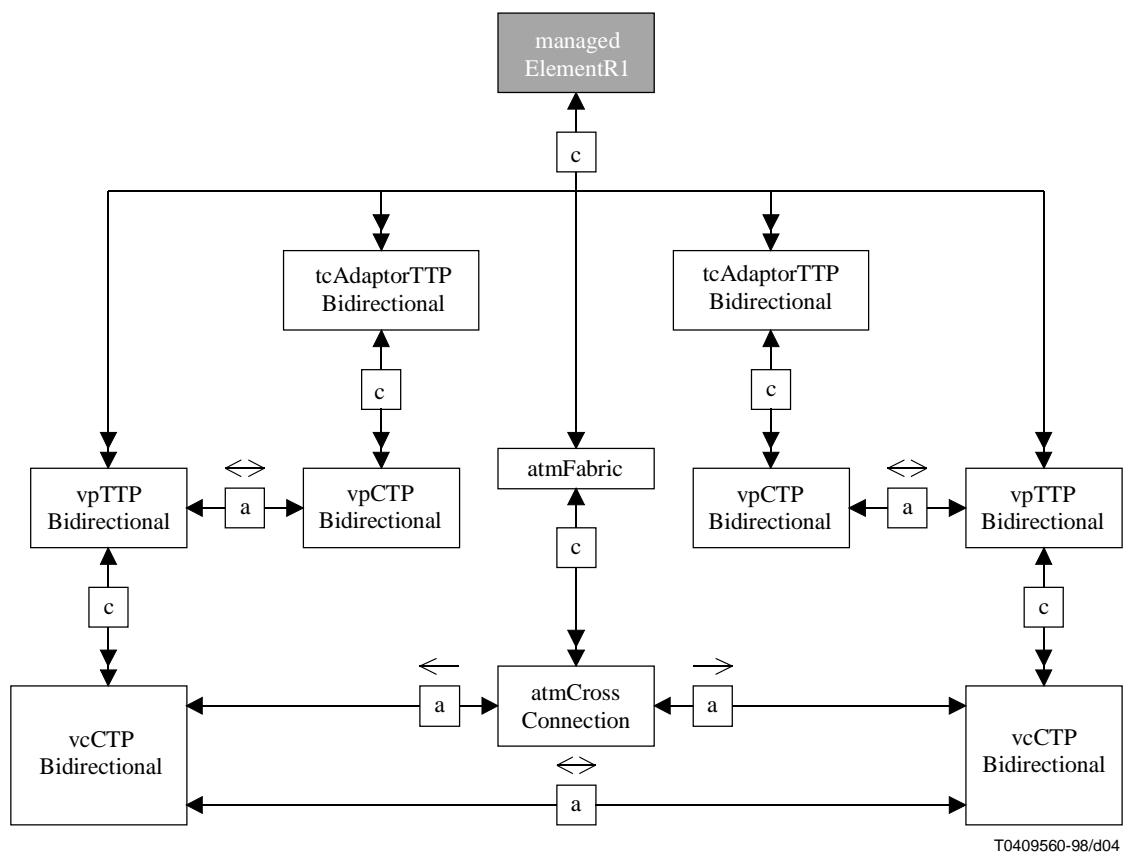


**Figura 4/Q.824.6 – Ejemplo de instanciación – Transconexión VC**

La supervisión de la calidad de funcionamiento y la supervisión de la continuidad utilizando flujos OAM se modela mediante instancias de bidirectionalPerformanceMonitor (supervisor de calidad de funcionamiento bidireccional) y bidirectionalContinuityMonitor (supervisor de continuidad bidireccional) que están contenidas dentro de los puntos extremos o puntos intermedios

apropiados de los caminos de trayecto virtual o de los caminos de conexión virtual (vpTTPBidirectional, vpCTPBidirectional, vcTTPBidirectional o vcCTPBidirectional). Los flujos OAM de puesta en bucle y alarma son tratados directamente por las instancias que representan los puntos extremos o puntos intermedios. Las anomalías de encabezamiento de célula ATM se registran como instancias de cellHeaderAbnormalityLogRecord contenidas en una instancia de fichero registro cronólogico que está contenido en la instancia de atmSwitch.
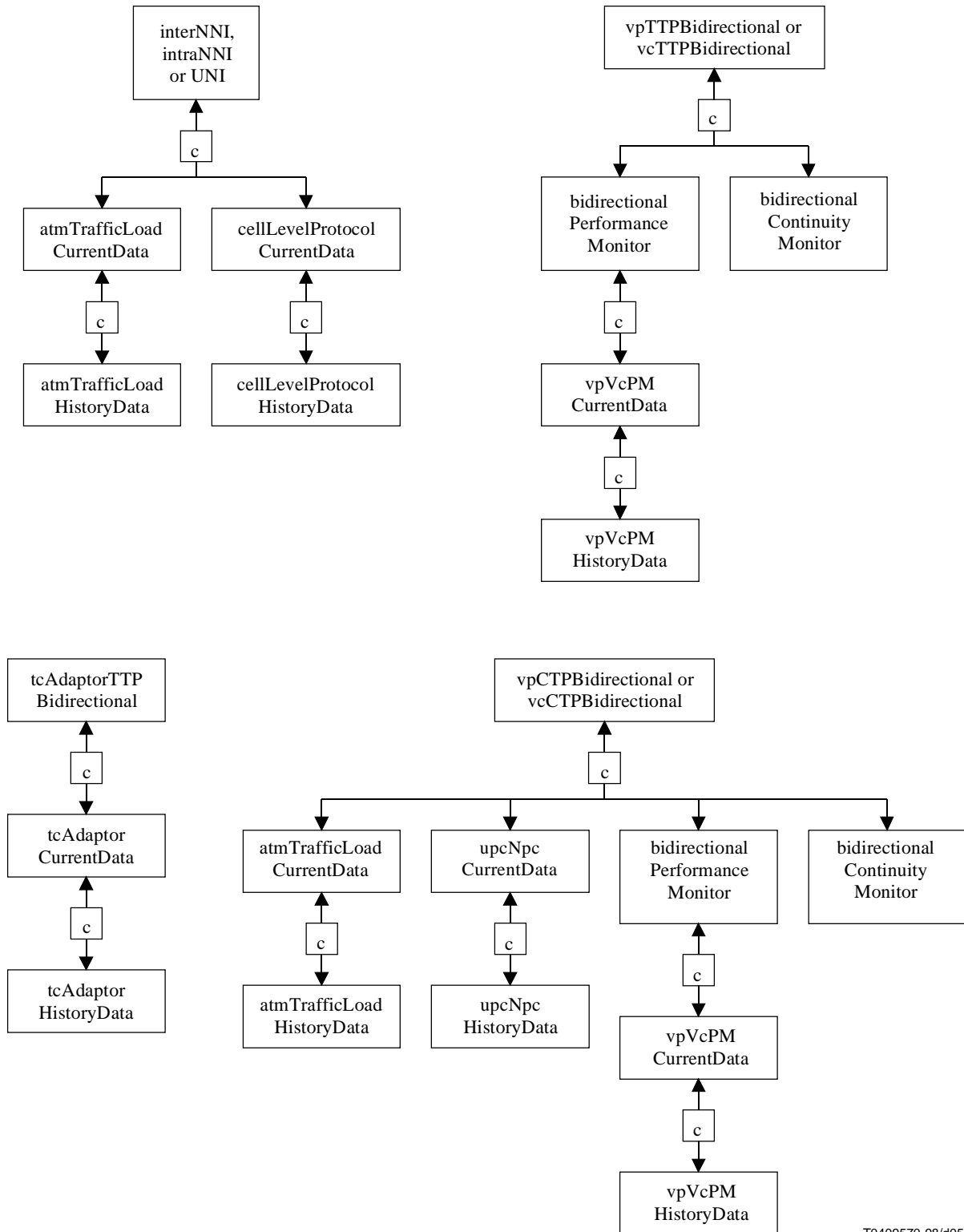


**Figura 5/Q.824.6 – Diagrama de relaciones entre entidades – Gestión de averías y de la calidad de funcionamiento ATM**

La información estadística que está siendo recogida viene representada por los objetos currentData y la que se recopiló anteriormente viene representada por los objetos historyData. Los objetos historyData están contenidos en los objetos currentData, contenidos a su vez en el objeto gestionado que representa el origen de la información estadística. La estadística del número de células entrantes y salientes está representada por instancias de atmTrafficLoadCurrentData y atmTrafficLoadHistoryData contenidas (directa o indirectamente) en los objetos gestionados que representan las interfaces o representan puntos intermedios en los caminos. Las estadísticas sobre células descartadas están representadas por instancias de cellLevelProtocolCurrentData y cellLevelProtocolHistoryData contenidas (directa o indirectamente) en los objetos gestionados que representan las interfaces. Las estadísticas sobre errores de encabezamiento están representadas por instancias de tcAdaptorCurrentData y tcAdaptorHistoryData contenidas (directa o indirectamente) en tcAdaptorTTP que representa la función de adaptación. Las estadísticas sobre el apuntamiento del tráfico de acuerdo con los descriptores de tráfico están representadas por instancias de upcNpcCurrentData y upcNpcHistoryData contenidas (directa o indirectamente) en los objetos gestionados que representan las interfaces o representan puntos intermedios en los caminos. Las estadísticas recogidas mediante los flujos de supervisión de la calidad de funcionamiento F4 y F5 están representadas por instancias de vpVcPMCurrentData y vpVcPMHistoryData que están contenidas (directa o indirectamente) en los objetos gestionados que representan el modelado de la supervisión de la calidad de funcionamiento mediante flujos OAM.

## 4.1.2   Modelado del interfuncionamiento y la capa de adaptación ATM
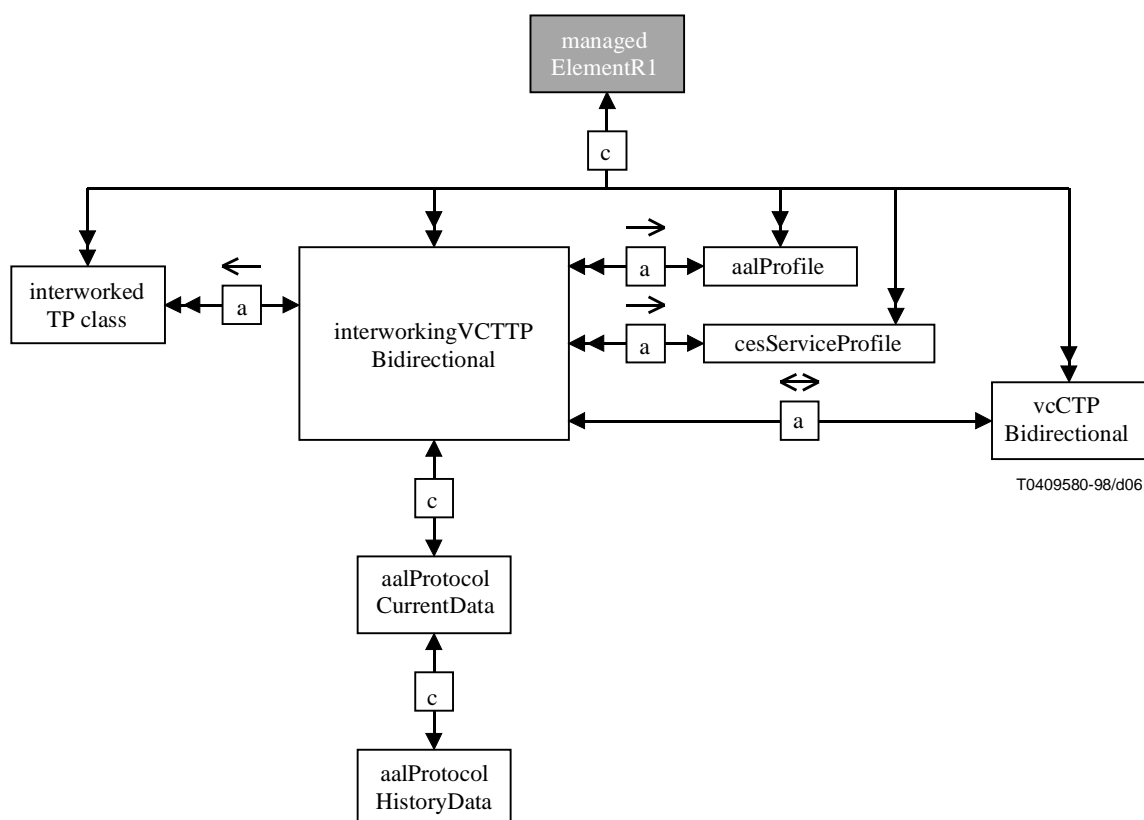


**Figura 6/Q.824.6 – Diagrama de relaciones entre entidades – Modelado del interfuncionamiento y la capa de adaptación ATM**

## 4.1.3    Modelado de la administración de cliente de banda ancha
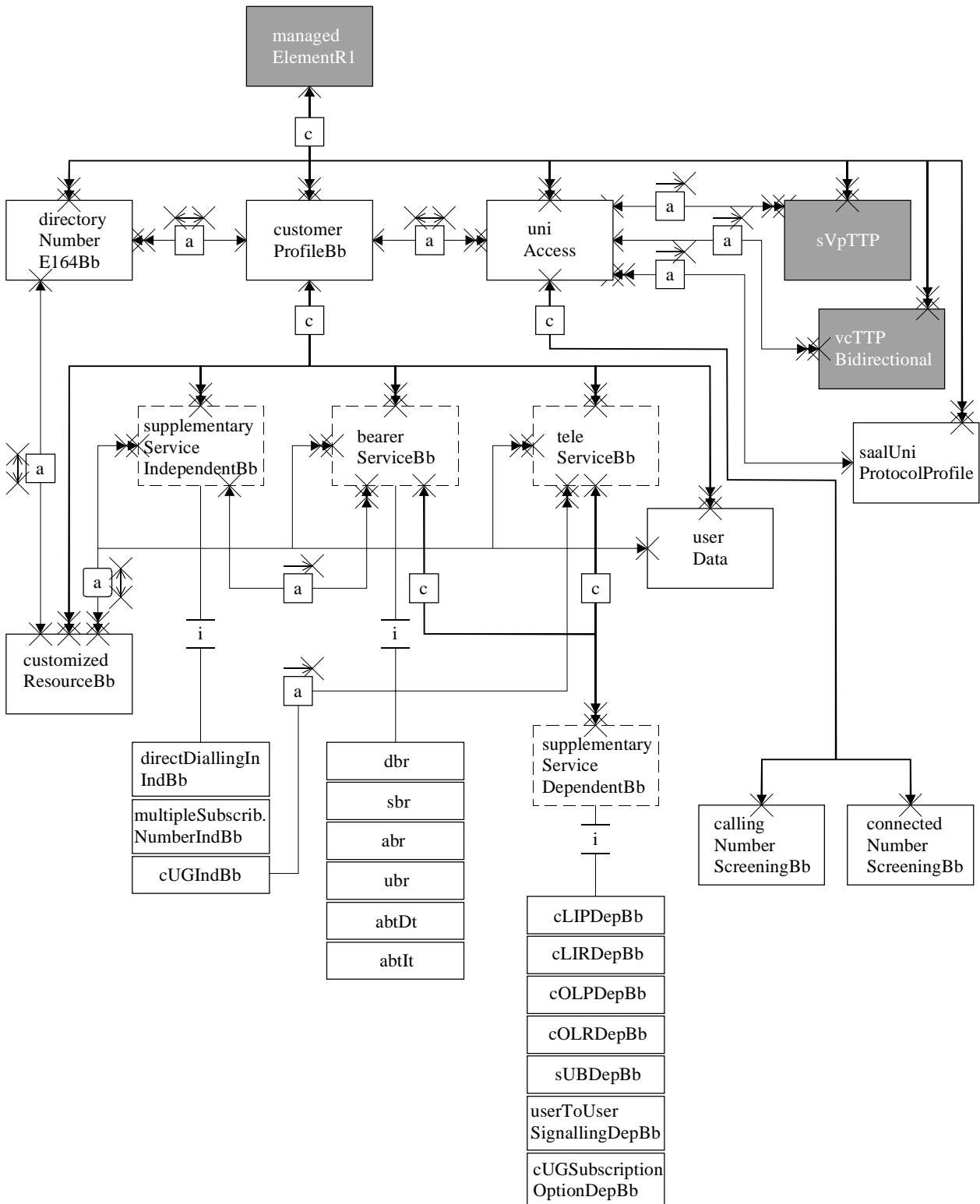


**Figura 7/Q.824.6 – Diagrama de relaciones entre entidades – Administración de cliente de banda ancha**

## 4.1.4 Modelado de encaminamiento de banda ancha

all object classes beside virtualPathGroup,
crCircuitEndPointSubgroup and crCircuitEndPoint
are contained in managedElementR1
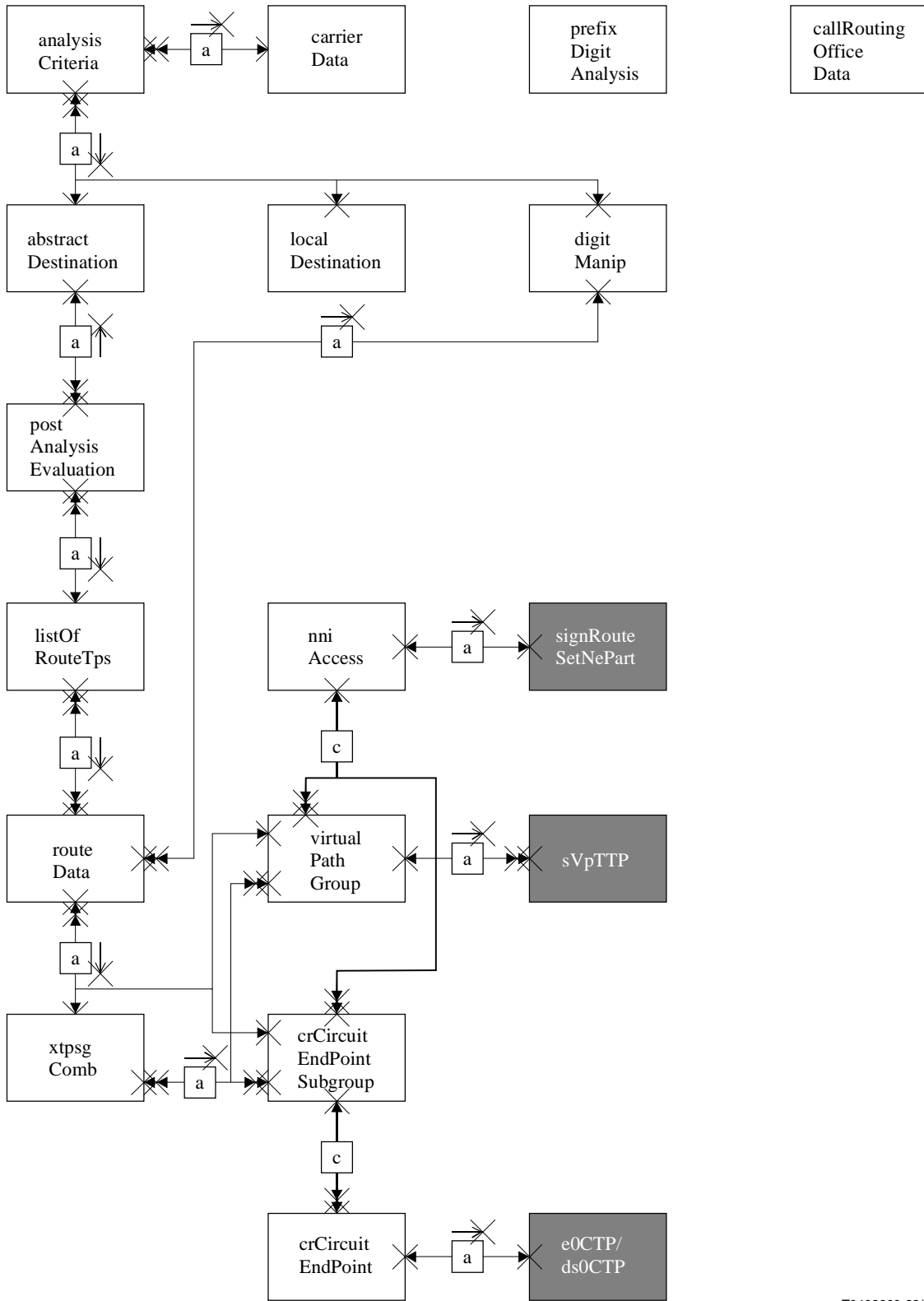


**Figura 8/Q.824.6 – Diagrama de relaciones entre entidades – Gestión de encaminamiento de llamada de banda ancha**

## 4.2 Jerarquía de herencia

Las figuras 9 a 13 muestran las relaciones de herencia desde el objeto de nivel más alto (Recomendación X.721 [13], "tope") hasta los objetos gestionados definidos en la presente Recomendación.
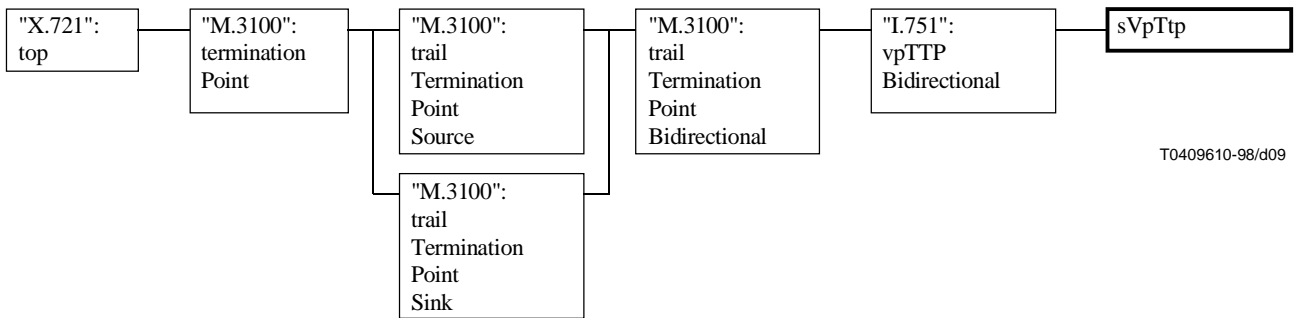


**Figura 9/Q.824.6 – Jerarquía de herencia – Fragmento genérico ATM**
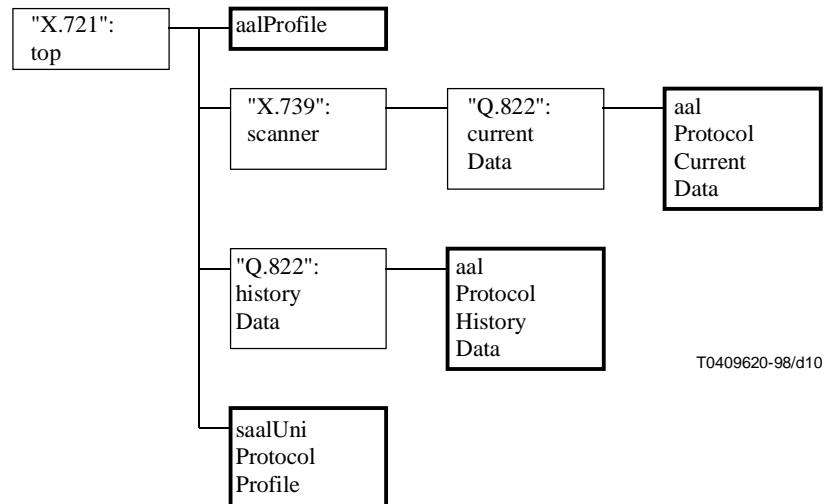


**Figura 10/Q.824.6 – Jerarquía de herencia – Fragmentos de capa de adaptación y señalización ATM**
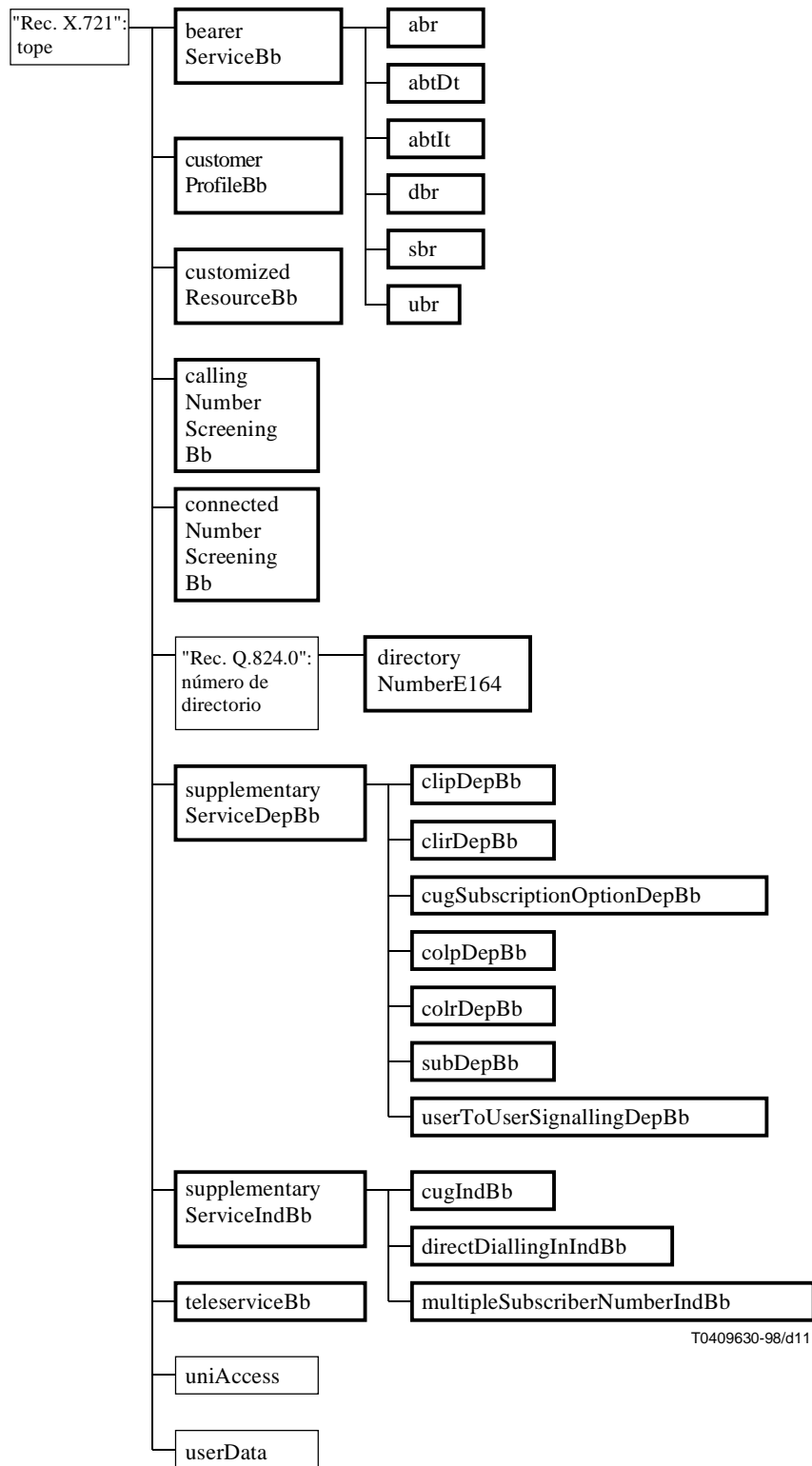
**Figura 11/Q.824.6 – Jerarquía de herencia – Fragmento de administración de cliente de banda ancha**

```
"X.721":        abstractDestination
top
                analysisCriteria

                crCircuitEndPointBb

                crCircuitEndPointSubgroupBb

                callRoutingOfficeData

                carrierData

                digitManip

                listOfRouteTps

                localDestination

                nniAccess

                prefixDigitAnalysis

                postAnalysisEvaluation

                routeData

                virtualPathGroup

                xtpsgComb
```

T0409640-98/d12
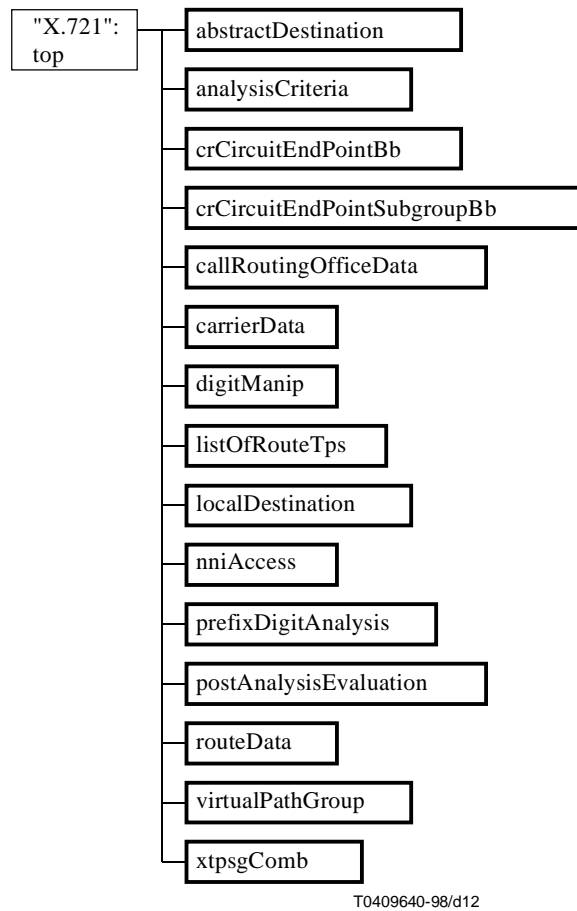
**Figura 12/Q.824.6 – Jerarquía de herencia – Fragmento de encaminamiento de llamadas de interfuncionamiento de banda ancha y banda estrecha**



```
"X.721":      cesServiceProfile
top

              "M.3100":      "M.3100":        "M.3100":        "I.751":        interworking
              termination    trail            trail            vcTTP          VcTtpBidirectional
              Point          Termination      Termination      Bidirectional
                             Point            Point
                             Source           Bidirectional

                             "M.3100":
                             trail
                             Termination
                             Point
                             Sink
```

T0409650-98/d13
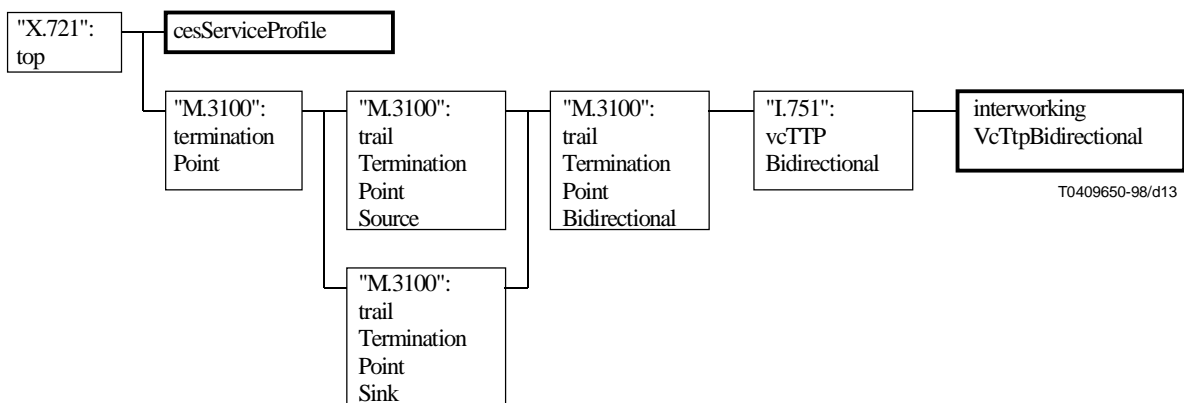
**Figura 13/Q.824.6 – Jerarquía de herencia – Fragmento de interfuncionamiento de servicio de emulación de circuito**

# 5 Definiciones formales

En esta cláusula se dan las definiciones formales de las clases de objetos gestionados, vinculaciones de nombres, lotes generales, comportamientos, atributos, acciones y notificaciones.

## 5.1 Clases de objetos

En esta subcláusula se especifican las clases de objetos de todos los objetos gestionados utilizados en el modelo de información de gestión. Estas clases de objetos se definen aquí o bien por referencia a otras especificaciones. Las clases de objetos gestionados que se definen en otro lugar y que sólo se utilizan a efectos de contenencia no se incluyen, pero se identifican mediante las vinculaciones de nombres de las clases aquí especificadas.

Los caminos unidireccionales se modelan mediante objetos bidireccionales con el descriptor de tráfico en el sentido no utilizado fijado a un valor nulo.

Se puede instanciar la siguiente clase definida en la Recomendación M.3100 [6]:

– **managedElementR1 (elemento gestionado R1)**

Se pueden instanciar las siguientes clases definidas en la Recomendación I.751 [4]:

– **"I.751": atmAccessProfile (Rec. I.751: perfil de acceso ATM);**

– **"I.751": atmCrossConnection (Rec. I.751: transconexión ATM);**

– **"I.751": atmCurrentData (Rec. I.751: datos actuales ATM);**

– **"I.751": atmFabric (Rec. I.751: estructura ATM);**

– **"I.751": atmTrafficLoadCurrentData (Rec. I.751: datos actuales de carga de tráfico ATM);**

– **"I.751": atmTrafficLoadHistoryData (Rec. I.751: datos históricos de carga de tráfico ATM);**

– **"I.751": bidirectionalContinuityMonitor (Rec. I.751: monitor de continuidad bidireccional);**

– **"I.751": bidirectionalPerformanceMonitor (Rec. I.751: monitor de calidad de funcionamiento bidireccional);**

– **"I.751": cellHeaderAbnormalityLogRecord (Rec. I.751: anotación de registro de anomalías de encabezamiento célula);**

– **"I.751": cellLevelProtocolCurrentData (Rec. I.751: datos actuales de protocolo a nivel de célula);**

– **"I.751": cellLevelProtocolHistoryData (Rec. I.751: datos históricos de protocolo a nivel de célula);**

– **"I.751": interNNI (Rec. I.751: interNNI);**

– **"I.751": intraNNI (Rec. I.751: intraNNI);**

– **"I.751": tcAdaptorCurrentData (Rec. I.751: datos actuales de adaptador TC)**

– **"I.751": tcAdaptorHistoryData (Rec. I.751: datos históricos de adaptador TC);**

– **"I.751": tcAdaptorTTPBidirectional (Rec. I.751: TTP de adaptador TC bidireccional);**

– **"I.751": uni (Rec. I.751: uni);**

– **"I.751": upcNpcCurrentData (Rec. I.751: datos actuales de UPC/NPC);**

– **"I.751": upcNpcHistoryData (Rec. I.751: datos históricos de UPC/NPC);**

– **"I.751": vcCTPBidirectional (Rec. I.751: CTP de VC bidireccional);**

– **"I.751": vcTTPBidirectional (Rec. I.751: TTP de VC bidireccional);**

– **"I.751": vpCTPBidirectional (Rec. I.751: CTP de VP bidireccional);**

– **"I.751": vpTTPBidirectional (Rec. I.751: TTP de VP bidireccional);**

– **"I.751": vpVcPMCurrentData (Rec. I.751: datos actuales de PM de VP/VC);**

– **"I.751": vpVcPMHistoryData (Rec. I.751: datos históricos de PM de VP/VC);**

Se puede instanciar la siguiente clase definida en la Recomendación X.721 [13]:

– **fichero registro cronológico.**

### 5.1.1 Fragmento genérico ATM

#### 5.1.1.1 TTP de trayecto virtual de conmutador (sVpTtp)

```
sVpTtp MANAGED OBJECT CLASS
      DERIVED FROM "Rec. I.751":vpTTPBidirectional;
      CHARACTERIZED BY
            sVpTtpPkg PACKAGE
                  BEHAVIOUR sVpTtpBeh;
                  ATTRIBUTES
                        vpType
                              GET-REPLACE;;;
            CONDITIONAL PACKAGES
                  blockedForMaintenancePkg
                        PRESENT IF "requested by the managing system",
                  maintenanceSignallingRunningPkg
                        PRESENT IF "requested by the managing system.",
                  propagationDelayPkg
                        PRESENT IF "supported by the managing system",
                  remoteBlockingPkg
                        PRESENT IF "requested by the managing system.";
REGISTERED AS {managedObjectClass 1};

sVpTtpBeh BEHAVIOUR
      DEFINED AS
            "A switch virtual path TTP is an object class representing the endpoint of an ATM VPC at a
            switching network element.";
```

### 5.1.2 Fragmento de capa de adaptación ATM

#### 5.1.2.1 Perfil AAL (aalProfile)

```
aalProfile MANAGED OBJECT CLASS
      DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2":top;
      CHARACTERIZED BY
            aalProfilePkg PACKAGE
                  BEHAVIOUR aalProfileBeh;
                  ATTRIBUTES
                  aalProfileId
                        GET,
                  aalType
                        GET;;;
      CONDITIONAL PACKAGES
            aalTypeOneProfilePkg
                  PRESENT IF "the aalType attribute is set to aal1",
            aalTypeThreeFourProfilePkg
                  PRESENT IF "the aalType attribute is set to aal34",
            aalTypeFiveProfilePkg
                  PRESENT IF "the aalType attribute is set to aal5";
REGISTERED AS {managedObjectClass 2};
```

**aalProfileBeh BEHAVIOUR**

    **DEFINED AS**

        **"The aalProfile object class is a managed support object used to organize data that describes the AAL processing functions of the ATM NE. The attribute aalType identifies the type of AAL processing (i.e., AAL1, AAL3/4, or AAL5). The AAL profiling information is contained in packages which are present based on the value of the aalType attribute. ";**

## 5.1.2.2 Datos actuales de protocolo AAL (aalProtocolCurrentData)

**aalProtocolCurrentData MANAGED OBJECT CLASS**

    **DERIVED FROM "ITU-T Rec. Q.822": currentData;**

    **CHARACTERIZED BY**

        **aalProtocolCurrentDataPkg PACKAGE**

            **BEHAVIOUR aalProtocolCurrentDataBeh;;;**

    **CONDITIONAL PACKAGES**

        **aalTypeOnePerformanceParameterPkg**

            **PRESENT IF "AAL Type 1 processing is being performed",**

        **aalTypeThreeFourPerformanceParameterPkg**

            **PRESENT IF "AAL Type 3/4 processing is being performed",**

        **aalTypeFivePerformanceParameterPkg**

            **PRESENT IF "AAL Type 5 processing is being performed";**

**REGISTERED AS {managedObjectClass 3};**

**aalProtocolCurrentDataBeh BEHAVIOUR**

    **DEFINED AS**

        **"The aalProtocolCurrentData object is a managed support object that contains the current performance monitoring data collected as a result of performing Segmentation and Reassembly (SAR) Level and Convergence Sublayer (CS) protocol monitoring. The granularityPeriod attribute inherited from the scanner object class shall be set to 15 minutes. Instances of this object class shall be inherently created by the managed system whenever an instance of the Interworking VCC Termination Point object class is created that represents AAL functions.";**

## 5.1.2.3 Datos históricos de protocolo AAL (aalProtocolHistoryData)

**aalProtocolHistoryData MANAGED OBJECT CLASS**

    **DERIVED FROM "ITU-T Rec. Q.822": historyData;**

    **CHARACTERIZED BY**

        **aalProtocolHistoryDataPkg PACKAGE**

            **BEHAVIOUR aalProtocolHistoryDataBeh;;;**

    **CONDITIONAL PACKAGES**

        **aalTypeOnePerformanceParameterHistoryDataPkg**

            **PRESENT IF "AAL Type 1 processing is being performed",**

        **aalTypeThreeFourPerformanceParameterHistoryDataPkg**

            **PRESENT IF "AAL Type 3/4 processing is being performed",**

        **aalTypeFivePerformanceParameterHistoryDataPkg**

            **PRESENT IF "AAL Type 5 processing is being performed";**

**REGISTERED AS {managedObjectClass 4};**

**aalProtocolHistoryDataBeh BEHAVIOUR**

    **DEFINED AS**

        **"The aalProtocolHistoryData object is a managed support object that contains the past performance monitoring data collected as a result of performing Segmentation and Reassembly (SAR) Level and Convergence Sublayer (CS) protocol monitoring. Instances of this object class can only be created locally by an agent (managed system) according to the value of the historyRetention attribute specified in the aalProtocolCurrentData object.";**

### 5.1.3 Fragmento de señalización

### 5.1.3.1 Perfil de protocolo UNI de SAAL (saalUniProtocolProfile)

```
saalUniProtocolProfile MANAGED OBJECT CLASS
      DERIVED FROM "ITU-T Rec. X.721 | ISO/IEC 10165-2": top;
      CHARACTERIZED BY
            saalUniProtocolProfilePkg PACKAGE
                  BEHAVIOUR saalUniProtocolProfileBeh;
                  ATTRIBUTES
                        saalUniProtocolProfileId
                              GET SET-BY-CREATE,
                        bufferRelease
                              DEFAULT VALUE ASN1DefinedTypesModule.bufferReleaseDefault
                              GET SET-BY-CREATE,
                        maxCc
                              DEFAULT VALUE ASN1DefinedTypesModule.maxCcDefault
                              GET SET-BY-CREATE,
                        maxInformationFieldLength
                              DEFAULT VALUE
                              ASN1DefinedTypesModule.maxInformationFieldLengthDefault
                              GET SET-BY-CREATE,
                        maxLengthSscopUuField
                              DEFAULT VALUE
                              ASN1DefinedTypesModule.maxLengthSscopUuFieldDefault
                              GET SET-BY-CREATE,
                        maxPd
                              DEFAULT VALUE ASN1DefinedTypesModule.maxPdDefault
                              GET SET-BY-CREATE,
                        maxSscopCreditToPeer
                              DEFAULT VALUE ASN1DefinedTypesModule.maxSscopCreditToPeerDefault
                              GET SET-BY-CREATE,
                        maxStat
                              DEFAULT VALUE ASN1DefinedTypesModule.maxStatDefault
                              GET SET-BY-CREATE,
                        sscopTimerCc
                              DEFAULT VALUE ASN1DefinedTypesModule.sscopTimerCcDefault
                              GET SET-BY-CREATE,
                        sscopTimerIdle
                              DEFAULT VALUE ASN1DefinedTypesModule.sscopTimerIdleDefault
                              GET SET-BY-CREATE,
                        sscopTimerKeepAlive
                              DEFAULT VALUE ASN1DefinedTypesModule.sscopTimerKeepAliveDefault
                              GET SET-BY-CREATE,
                        sscopTimerNoResponse
                              DEFAULT VALUE ASN1DefinedTypesModule.sscopTimerNoResponseDefault
                              GET SET-BY-CREATE,
                        sscopTimerPoll
                              DEFAULT VALUE ASN1DefinedTypesModule.sscopTimerPollDefault
                              GET SET-BY-CREATE;;;
            CONDITIONAL PACKAGES
                  "ITU-T Rec. M.3100":createDeleteNotificationsPackage
                        PRESENT IF "supported by an instance of this class",
                  pollAfterRetransmissionPkg
                        PRESENT IF "an instance supports this national option";
      REGISTERED AS {managedObjectClass 5};
```

**saalUniProtocolProfileBeh BEHAVIOUR**
    **DEFINED AS**
        "The saalUniProtocolProfile is a broadband-specific object class which comprises attributes
        required for SSCOP, SSCF-UNI and Layer Management for UNI.";

## 5.1.4      Fragmento de administración de cliente de banda ancha

### 5.1.4.1      Velocidad binaria disponible (abr)

**abr MANAGED OBJECT CLASS**
    **DERIVED FROM bearerServiceBb;**
    **CHARACTERIZED BY**
        **abrPkg PACKAGE**
            **BEHAVIOUR abrBeh;;;**
**REGISTERED AS {managedObjectClass 6};**

**abrBeh BEHAVIOUR**
    **DEFINED AS**
        "This subclass of 'bearer service' represents the adaptation of connection-oriented data with
        available bit rate.";

### 5.1.4.2      Transferencia de bloques ATM con transmisión retardada (abtDt)

**abtDt MANAGED OBJECT CLASS**
    **DERIVED FROM bearerServiceBb;**
    **CHARACTERIZED BY**
        **abtDtPkg PACKAGE**
            **BEHAVIOUR abtDtBeh;;;**
**REGISTERED AS {managedObjectClass 7};**

**abtDtBeh BEHAVIOUR**
    **DEFINED AS**
        "This subclass of 'bearer service' represents the adaptation of connection-oriented data with ATM
        block transfer with delayed transmission.";

### 5.1.4.3      Transferencia de bloques ATM con transmisión intermedia (abtIt)

**abtIt MANAGED OBJECT CLASS**
    **DERIVED FROM bearerServiceBb;**
    **CHARACTERIZED BY**
        **abtItPkg PACKAGE**
            **BEHAVIOUR abtItBeh;;;**
**REGISTERED AS {managedObjectClass 8};**

**abtItBeh BEHAVIOUR**
    **DEFINED AS**
        "This subclass of 'bearer service' represents the adaptation of connection-oriented data with ATM
        block transfer with immediate transmission.";

### 5.1.4.4      Servicio portador para banda ancha (bearerServiceBb)

**bearerServiceBb MANAGED OBJECT CLASS**
    **DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2": top;**
    **CHARACTERIZED BY**
        **customizedResourcePointersBehPkg,**
        **bearerServiceBbPkg PACKAGE**

```
            BEHAVIOUR bearerServiceBbBeh;
            ATTRIBUTES
                    "ITU-T Q.824.0":bearerServiceId
                            GET SET-BY-CREATE,
                    "CCITT Rec. X.721 | ISO/IEC 10165-2": administrativeState
                            GET-REPLACE,
                    "ITU-T Q.824.0":customizedResourcePtrList
                            DEFAULT VALUE ASN1DefinedTypesModule.emptySet
                            GET;
            NOTIFICATIONS
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":stateChange,
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange;;;
REGISTERED AS {managedObjectClass 9};

bearerServiceBbBeh BEHAVIOUR
    DEFINED AS
            "The Bearer Service object class represents the common aspects of the bearer services. While the
            Bearer Service object class is not instantiated, it is a superclass from which specialized subclasses are
            derived and instantiated.";
```

## 5.1.4.5    Presentación de la identificación de la línea llamante dependiente para banda ancha (clipDepBb)

```
clipDepBb    MANAGED OBJECT CLASS
    DERIVED FROM supplementaryServiceDepBb;
    CHARACTERIZED BY
            clipBbPkg;
            CONDITIONAL PACKAGES
                    twoCallingPartyNumberDeliveryPkg
                            PRESENT IF "supplied by the managing system";
REGISTERED AS {managedObjectClass 10};
```

## 5.1.4.6    Restricción de la identificación de la línea llamante dependiente para banda ancha (clirDepBb)

```
clirDepBb    MANAGED OBJECT CLASS
    DERIVED FROM supplementaryServiceDepBb;
    CHARACTERIZED BY
            clirBbPkg;
REGISTERED AS {managedObjectClass 11};
```

## 5.1.4.7    Cribado de número llamante para banda ancha (callingNumberScreeningBb)

```
callingNumberScreeningBb        MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
    CHARACTERIZED BY
            callingNumberScreeningPkg PACKAGE
                    BEHAVIOUR callingNumberScreeningBeh;
                    ATTRIBUTES
                            "ITU-T Q.824.1": callingNumberScreeningId
                                    GET SET-BY-CREATE,
                            screenNumber
                                    DEFAULT VALUE ASN1DefinedTypesModule.defaultScreenNumber
                                    GET-REPLACE,
                            defaultDirectoryNumber
                                    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 {managedObjectClass 12};


**callingNumberScreeningBeh BEHAVIOUR**

    **DEFINED AS**

        **"This object identifies characteristics used for the screening of the Calling Party Directory Number as described in Rec. Q.2951.3. Only one object of this object class shall be contained in the superior object instance."**;


## 5.1.4.8 Grupo cerrado de usuarios independiente para banda ancha (cugIndBb)

**cugIndBb MANAGED OBJECT CLASS**

    **DERIVED FROM supplementaryServiceIndBb;**

    **CHARACTERIZED BY**

        **cugBbPkg PACKAGE**

            **BEHAVIOUR cugBbBeh;**

            **ATTRIBUTES**

                **cugIndex**

                    **GET SET-BY-CREATE,**

                **cugInterlockCode**

                    **GET SET-BY-CREATE,**

                **cugDataNetworkIdentification**

                    **GET SET-BY-CREATE,**

                **cugBarring GET-REPLACE,**

                **"ITU-T Q.824.0":servicePtrList**

                    **DEFAULT VALUE ASN1DefinedTypesModule.emptySet**

                    **GET-REPLACE ADD-REMOVE;;;**

REGISTERED AS {managedObjectClass 13};


**cugBbBeh BEHAVIOUR**

    **DEFINED AS**

        **"This managed object class is used to store the closed user group general subscription options specified by ITU-T Rec. Q.2955.1. This package is instantiated by for each Closed User Group. When the value of cugBarring is outgoingCallsBarred, this CUG must not be a preferential Closed User Group (denoted by preferredCugIndex in cugSubscriptionOption managed object). An object of this class can only deleted, if it is not referenced by a cugSubscriptionOption(Independent) object.**

        **The 'customizedResourcePtrList' and the 'servicePtrList' can only be used mutually exclusive. This means that one of them has to be empty."**;


## 5.1.4.9 Opción de abono a grupo cerrado de usuarios dependiente para banda ancha (cugSubscriptionOptionDepBb)

**cugSubscriptionOptionDepBb MANAGED OBJECT CLASS**

    **DERIVED FROM supplementaryServiceDepBb;**

    **CHARACTERIZED BY**

        **cugSubscriptionOptionBbPkg;**

REGISTERED AS {managedObjectClass 14};

### 5.1.4.10 Presentación de la identificación de línea conectada dependiente para banda ancha (colpDepBb)

colpDepBb   MANAGED OBJECT CLASS
    DERIVED FROM supplementaryServiceDepBb;
    CHARACTERIZED BY
        colpBbPkg;
REGISTERED AS {managedObjectClass 15};


### 5.1.4.11 Restricción de la identificación de la línea conectada dependiente para banda ancha (colrDepBb)

colrDepBb   MANAGED OBJECT CLASS
    DERIVED FROM supplementaryServiceDepBb;
    CHARACTERIZED BY
        colrBbPkg;
REGISTERED AS {managedObjectClass 16};


### 5.1.4.12 Cribado de número conectado para banda ancha (connectedNumberScreeningBb)

connectedNumberScreeningBb   MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
    CHARACTERIZED BY
        connectedNumberScreeningPkg PACKAGE
            BEHAVIOUR connectedNumberScreeningBeh;
            ATTRIBUTES
                connectedNumberScreeningId
                    GET SET-BY-CREATE,
                screenNumber
                    DEFAULT VALUE ASN1DefinedTypesModule.defaultScreenNumber
                    GET-REPLACE,
                defaultDirectoryNumber
                    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 {managedObjectClass 17};

connectedNumberScreeningBeh BEHAVIOUR
    DEFINED AS
        "This object identifies characteristics used for the screening of the Connected Line Directory Number as described in Rec. Q.2951.5. Only one object of this object class shall be contained in the superior object instance.";


### 5.1.4.13 Perfil de cliente para banda ancha (customerProfileBb)

customerProfileBb MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
    CHARACTERIZED BY
        customerProfilePointersBehPkg,
        customerProfileBbPkg PACKAGE
            BEHAVIOUR customerProfileBbBeh;
            ATTRIBUTES

```
                    "ITU-T Q.824.0":customerProfileId
                            GET SET-BY-CREATE,
                    accessPtrList
                            GET-REPLACE ADD-REMOVE,
                    "ITU-T Q.824.0":directoryNumberPtrList
                            GET-REPLACE ADD-REMOVE;;;
REGISTERED AS {managedObjectClass 18};

customerProfileBbBeh BEHAVIOUR
        DEFINED AS
                "The Customer Profile represents a single point of reference used to bind together a range of
                services and resources for customer administration purposes. It is a class of managed objects
                representing the characteristics of the Directory Number(s) (DN) assigned to an individual
                subscriber, independent of the access type and bearer service. Each instance of the customer profile
                object class includes a Directory Number Pointer List attribute that represents the Directory
                Number(s) assigned to the customer profile object and an Access Pointer List attribute that
                represents Access(es) also assigned to the customer profile object.
                Objects which are related through direct or indirect containment or by a direct pointer relationship
                with a customerProfileBb object can not be related in the same way to a different customerProfileBb
                object.
                More than one entry in the 'directoryNumberPtrList' are allowed only if a
                'multipleSubscriberNumberIndBb' object is contained in this 'customerProfileBb' object.";
```

## 5.1.4.14   Recurso personalizado para banda ancha (customizedResourceBb)

```
customizedResourceBb MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2": top;
        CHARACTERIZED BY
                customizedResourcePointersBehPkg,
                customizedResourceBbPkg PACKAGE
                        BEHAVIOUR customizedResourceBbBeh;
                        ATTRIBUTES
                                "ITU-T Q.824.0":customizedResourceId
                                        GET SET-BY-CREATE,
                                "ITU-T Q.824.0":bearerServicePtrList
                                        GET-REPLACE ADD-REMOVE,
                                "ITU-T Q.824.0":directoryNumberPtrList
                                        GET-REPLACE ADD-REMOVE,
                                "ITU-T Q.824.0":teleServicePtrList
                                        GET-REPLACE ADD-REMOVE,
                                supplementaryServiceIndBbPtrList
                                        GET-REPLACE ADD-REMOVE,
                                userDataPtr
                                        GET-REPLACE;;;
REGISTERED AS {managedObjectClass 19};

customizedResourceBbBeh BEHAVIOUR
        DEFINED AS
                "The Customized Resource object is a class of managed objects that represents the service
                provisioning for a subscriber. It allows association of a set of services and/or one userData object to
                one or more Directory Numbers.
                When no customized resource objects are contained in a customer profile object, then all
                services/userData contained in this customer profile object are applicable to all directory numbers
                associated with this customer profile object.
                If one or more customized resource objects are contained in a customer profile object, then only
                these services/userData (contained in this customer profile object) are applicable to a certain
                directory number (associated with the customer profile object) which are explicitly associated to this
                directory number object using a customized resource object.
                Only one entry shall be contained in the directoryNumberPtrList.
                The teleServicePtrList attribute points to instances of the class teleserviceBb or its subclasses.";
```

### 5.1.4.15 Velocidad binaria determinística (dbr)

**dbr MANAGED OBJECT CLASS**
    **DERIVED FROM bearerServiceBb;**
    **CHARACTERIZED BY**
        **dbrPkg PACKAGE**
            **BEHAVIOUR dbrBeh;;;**
**REGISTERED AS {managedObjectClass 20};**

**dbrBeh BEHAVIOUR**
    **DEFINED AS**
        **"This subclass of 'bearer service' represents the adaptation of connection-oriented data with deterministic (constant) bit rate and timing relation between sender and receiver.";**

### 5.1.4.16 Marcación directa de extensiones independiente para banda ancha (directDiallingInIndBb)

**directDiallingInIndBb MANAGED OBJECT CLASS**
    **DERIVED FROM supplementaryServiceIndBb;**
    **CHARACTERIZED BY**
        **directDiallingInIndBbPkg PACKAGE**
            **BEHAVIOUR directDiallingInIndBbBeh;**
            **ATTRIBUTES**
                **cdpnRepresentationType**
                    **GET-REPLACE;;;**
        **CONDITIONAL PACKAGES**
            **"ITU-T Q.824.2":digitsOptionPkg**
                **PRESENT IF "if supported by administration";**
**REGISTERED AS {managedObjectClass 21};**

**directDiallingInIndBbBeh BEHAVIOUR**
    **DEFINED AS**
        **"This Supplementary Service enables a user to call directly via a public ISDN to a user on a private ISDN by use of the public ISDN numbering plan as described in ITU-T Rec. Q.2951.1.**
        **Only one object of this class shall be contained within the superior managed object. The customizedResourcePtrList derived from the supplementaryServiceIndBb shall be empty.";**

### 5.1.4.17 Número de directorio E.164 (directoryNumberE164)

**directoryNumberE164 MANAGED OBJECT CLASS**
    **DERIVED FROM "ITU-T Q.824.0":directoryNumber;**
    **CHARACTERIZED BY**
        **customerProfilePointersBehPkg,**
        **directoryNumberE164Pkg PACKAGE**
            **BEHAVIOUR directoryNumberE164Beh;**
            **ATTRIBUTES**
                **"ITU-T Q.824.0":e164DirectoryNumber**
                    **GET SET-BY-CREATE,**
              **localDestinationPtr**
                    **GET SET-BY-CREATE;;;**
**REGISTERED AS {managedObjectClass 22};**

**directoryNumberE164Beh BEHAVIOUR**

    **DEFINED AS**

        "The E.164 Directory Number object class represents directory numbers belonging to the
international public telecommunication numbering plan as defined in ITU-T E.164. The E.164
Directory Number is a single-valued, read-only attribute, set only at creation time. The E.164
Directory Number is updated implicitly if the attribute values of the referenced localDestination
object are modified. The routingBlockPtrPkg inherited from the directoryNumber object class shall
not be present.

        Only one entry shall be contained in the customizedResourcePtrList.";

### 5.1.4.18 Números múltiples de abonado independiente para banda ancha (multipleSubscriberNumberIndBb)

**multipleSubscriberNumberIndBb      MANAGED OBJECT CLASS**

    **DERIVED FROM supplementaryServiceIndBb;**

    **CHARACTERIZED BY**

        **multipleSubscriberNumberIndBbPkg PACKAGE**

            **BEHAVIOUR multipleSubscriberNumberIndBbBeh;**

            **ATTRIBUTES**

                **"ITU-T Q.824.2": assocDefaultDN**

                    **GET-REPLACE,**

                **cdpnRepresentationType**

                    **GET-REPLACE;;;**

        **CONDITIONAL PACKAGES**

            **"ITU-T Q.824.2": networkOptionsPkg**

                **PRESENT IF "if supported by administration.";**

**REGISTERED AS {managedObjectClass 23};**

**multipleSubscriberNumberIndBbBeh BEHAVIOUR**

    **DEFINED AS**

        "The MSN supplementary service provides the possibility for assigning multiple numbers (not
necessarily consecutive) to a single public or private interface as described in ITU-T Rec. Q.2951.2.
This enables the selection of multiple distinct terminals attached to the same interface.

        The service provider shall fix the length of the numbers to be transmitted to the user's installation.
They may comprise the least significant digit up to the full ISDN number as defined in CCITT
Rec. E.164. The digit(s) significant for terminal differentiation shall be an integral part of the ISDN
numbering scheme.

        If the attribute 'cdpnRepresentationType' has the value 'unknown', the 'networkOptionsPkg' must
be present to determine the number of digits to be transmitted to the user.

        Only one object of this class shall be contained within the superior managed object. The
customizedResourcePtrList derived from the supplementaryServiceIndBb shall be empty.";

### 5.1.4.19 Velocidad binaria estadística (sbr)

**sbr MANAGED OBJECT CLASS**

    **DERIVED FROM bearerServiceBb;**

    **CHARACTERIZED BY**

        **sbrPkg PACKAGE**

            **BEHAVIOUR sbrBeh;**

            **ATTRIBUTES**

                **timingRelation**

                    **GET-REPLACE;;;**

**REGISTERED AS {managedObjectClass 24};**

sbrBeh BEHAVIOUR
    DEFINED AS
        "This subclass of 'bearer service' represents the adaptation of connection-oriented data with
        statistical (variable) bit rate (SBR 1/2/3).";

### 5.1.4.20 Subdireccionamiento dependiente para banda ancha (subDepBb)

subDepBb    MANAGED OBJECT CLASS
    DERIVED FROM supplementaryServiceDepBb;
    CHARACTERIZED BY
        subBbPkg;
REGISTERED AS {managedObjectClass 25};

### 5.1.4.21 Servicio suplementario dependiente para banda ancha (supplementaryServiceDepBb)

supplementaryServiceDepBb MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2": top;
    CHARACTERIZED BY
        supplementaryServiceDepBbPkg PACKAGE
            BEHAVIOUR
                supplementaryServiceDepBbBeh;
            ATTRIBUTES
                "ITU-T Q.824.0":supplementaryServiceId
                    GET SET-BY-CREATE,
                "CCITT Rec. X.721 | ISO/IEC 10165-2": administrativeState
                    GET-REPLACE;
            NOTIFICATIONS
                "CCITT Rec. X.721 | ISO/IEC 10165-2": stateChange,
                "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 {managedObjectClass 26};

supplementaryServiceDepBbBeh BEHAVIOUR
    DEFINED AS
        "This object class is defined to allow the creation of specific supplementary service subclasses for
        those supplementary services that are defined by ITU-T to be configurable on a per bearer or
        teleservice basis. Supplementary services, as defined in I.210, are services that can only be used in
        conjunction with another bearer service or another teleservice.
        While the supplementaryServiceDepBb object class is not instantiated, it is a superclass from which
        specialized subclasses are derived and instantiated.";

### 5.1.4.22 Servicio suplementario independiente para banda ancha (supplementaryServiceIndBb)

supplementaryServiceIndBb MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2": top;
    CHARACTERIZED BY
        customizedResourcePointersBehPkg,
        supplementaryServiceIndBbPkg PACKAGE
            BEHAVIOUR supplementaryServiceIndBbBeh;
            ATTRIBUTES
                "ITU-T Q.824.0":supplementaryServiceId
                    GET SET-BY-CREATE,
                "CCITT Rec. X.721 | ISO/IEC 10165-2": administrativeState
                    GET-REPLACE,

```
                    "ITU-T Q.824.0":customizedResourcePtrList
                            DEFAULT VALUE ASN1DefinedTypesModule.emptySet
                            GET;
                NOTIFICATIONS
                        "CCITT Rec. X.721 | ISO/IEC 10165-2": stateChange,
                        "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 {managedObjectClass 27};
```

**supplementaryServiceIndBbBeh BEHAVIOUR**
        **DEFINED AS**
                **"This object class is defined to allow the creation of specific supplementary service subclasses for those supplementary services that are defined by ITU-T to be independent of any particular bearer/teleservice. Supplementary services, as defined in I.210, are services that can only be used in conjunction with another bearer service or another teleservice.**
                **While the supplementaryServiceIndBb object class is not instantiated, it is a superclass from which specialized subclasses are derived and instantiated.";**


## 5.1.4.23   Teleservicio para banda ancha (teleserviceBb)

```
teleserviceBb MANAGED OBJECT CLASS
        DERIVED FROM   "CCITT Rec. X.721 | ISO/IEC 10165-2": top;
        CHARACTERIZED BY
                customizedResourcePointersBehPkg,
                teleserviceBbPkg PACKAGE
                        BEHAVIOUR teleserviceBbBeh;
                        ATTRIBUTES
                                "ITU-T Q.824.0":teleserviceId
                                        GET SET-BY-CREATE,
                                "ITU-T Q.824.0":bearerServicePtr
                                        GET-REPLACE,
                                "CCITT Rec. X.721 | ISO/IEC 10165-2": administrativeState
                                        GET-REPLACE,
                                "ITU-T Q.824.0":customizedResourcePtrList
                                        DEFAULT VALUE ASN1DefinedTypesModule.emptySet
                                        GET;
                        NOTIFICATIONS
                                "CCITT Rec. X.721 | ISO/IEC 10165-2": stateChange;;;
REGISTERED AS {managedObjectClass 28};
```

**teleserviceBbBeh BEHAVIOUR**
        **DEFINED AS**
                **"The teleservices managed object class defines a communication service that makes available layer 1 – layer 7 capabilities.**
                **While the teleserviceBb object class is not instantiated, it is a superclass from which specialized subclasses are derived and instantiated.";**


## 5.1.4.24   Acceso UNI (uniAccess)

```
uniAccess MANAGED OBJECT CLASS
        DERIVED FROM "Rec. X.721 | ISO/IEC 10165-2":top;
        CHARACTERIZED BY
                "CCITT Rec. X.721 | ISO/IEC 10165-2":administrativeStatePackage,
                customerProfilePointersBehPkg,
                uniAccessPkg PACKAGE
```

BEHAVIOUR uniAccessBeh;
ATTRIBUTES
uniAccessId
GET SET-BY-CREATE,
signallingStandard
GET-REPLACE,
customerProfilePtr
DEFAULT VALUE ASN1DefinedTypesModule.defaultNULL
GET,
tpAndVpciSigPtrList
GET-REPLACE
ADD-REMOVE,
connectionIdOffering
DEFAULT VALUE ASN1DefinedTypesModule.connectionIdOfferingDefault
GET-REPLACE;;;
CONDITIONAL PACKAGES
maintenanceSignallingRunningPkg
PRESENT IF "requested by the managing system.",
searchMethodPkg
PRESENT IF "supplied by the managing system.",
signallingChannelPtrPkg
PRESENT IF "non-associated signalling is used for this object instance",
signallingTypePkg
PRESENT IF "the managed system supports associated signalling";
REGISTERED AS {managedObjectClass 29};

uniAccessBeh BEHAVIOUR
DEFINED AS
"This managed object represents a group of VPs coming from the same User Network Interface (UNI). The VPs can be distributed over one or more physical interfaces. One physical interface can contain VPs of several object instances of the object class uniAccess.

In the case of non-associated signalling, all VPs of one uniAccess object instance are controlled by the same signalling channel and there is only one signalling channel for the group. In the case of associated signalling there is one signalling channel, typically VCI = 5, for each VP in the group.

Non-associated signalling is assumed if the signallingTypePkg is not present in a uniAccess object instance.

If the administrativeState attribute is set to locked, all signalled virtual connections shall be released. PVCs are not influenced by this attribute.

It is not requested (but allowed) that the VPC which contains the signalling VCC be contained in the tpAndVpciSigPtrList. If this VPC is contained in the list then it can be used for on-demand connections controlled by this signalling VCC. If the VPC is not in the list then it cannot be used for on-demand connections controlled by the identified signalling VC.";

## 5.1.4.25    Velocidad binaria no especificada (ubr)

ubr MANAGED OBJECT CLASS
DERIVED FROM bearerServiceBb;
CHARACTERIZED BY
ubrPkg PACKAGE
BEHAVIOUR ubrBeh;;;
REGISTERED AS {managedObjectClass 30};

ubrBeh BEHAVIOUR
DEFINED AS
"This subclass of 'bearer service' represents the adaptation of connection-oriented data with unspecified bit rate.";

## 5.1.4.26   Datos de usuario (userData)

userData MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2": top;
    CHARACTERIZED BY
        customizedResourcePointersBehPkg,
        userDataPkg PACKAGE
            BEHAVIOUR userDataBeh;
            ATTRIBUTES
                userDataId
                    GET SET-BY-CREATE,
                "ITU-T Q.824.0":customizedResourcePtrList
                    DEFAULT VALUE ASN1DefinedTypesModule.emptySet
                    GET,
                subscriberCategory
                    DEFAULT VALUE ASN1DefinedTypesModule.subscriberCategoryDefault
                    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;;;
        CONDITIONAL PACKAGES
            originMarkPkg
                PRESENT IF "supplied by the managing system" ,
            preferredCarrierPkg
                PRESENT IF "carrier specific routing is supplied" ;
REGISTERED AS {managedObjectClass 31};

userDataBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the properties of a certain subscriber (user). The properties may be either
        valid for the whole superior customerProfile or for a certain directory number only, depending from
        the use of customizedResource objects.
        Only one 'userData' object with an empty 'customizedResourcePtrList' shall be contained in a
        customerProfile object." ;


## 5.1.4.27   Señalización de usuario a usuario dependiente para banda ancha (userToUserSignallingDepBb)

userToUserSignallingDepBb    MANAGED OBJECT CLASS
    DERIVED FROM supplementaryServiceDepBb;
    CHARACTERIZED BY
        userToUserSignallingBbPkg;
REGISTERED AS {managedObjectClass 32};


## 5.1.5   Fragmento de encaminamiento de llamada de interfuncionamiento de banda ancha y banda estrecha


## 5.1.5.1   Destino abstracto (abstractDestination)

abstractDestination MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
    CHARACTERIZED BY
        abstractDestinationPkg PACKAGE
            BEHAVIOUR abstractDestinationBeh;

```
                    ATTRIBUTES
                         abstractDestinationId
                               GET SET-BY-CREATE;
                    NOTIFICATIONS
                         "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                         "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                         "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
          CONDITIONAL PACKAGES
               maxDigitsPkg
                    PRESENT IF "supplied by managing system" ,
               ringTimeLimitPkg
                    PRESENT IF "supplied by managing system" ;
REGISTERED AS {managedObjectClass 33};

abstractDestinationBeh BEHAVIOUR
     DEFINED AS
          "This entity is a result of digit processing in the originating, transit or gateway exchange.";
```

## 5.1.5.2     Criterios de análisis (analysisCriteria)

```
analysisCriteria MANAGED OBJECT CLASS
     DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
     CHARACTERIZED BY
          analysisCriteriaPkg PACKAGE
               BEHAVIOUR analysisCriteriaBeh;
               ATTRIBUTES
                    analysisCriteriaId
                         GET SET-BY-CREATE,
                    activeTargetPtr
                         GET-REPLACE,
                    callingPartyCategory
                         GET-REPLACE,
                    origin
                         GET-REPLACE ;
               NOTIFICATIONS
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
          CONDITIONAL PACKAGES
               carrierDataPtrPkg
                    PRESENT IF "the target is carrier dependent",
               destinationCodePkg
                    PRESENT IF "in any case with exception of the case of one Point of Presence of the
                    carrier " ,
               destinationTypePkg
                    PRESENT IF "destinationCodePkg is present";
REGISTERED AS {managedObjectClass 34};

analysisCriteriaBeh BEHAVIOUR
     DEFINED AS
          "This entity describes the management information needed to manage the internal digit trees.";
```

## 5.1.5.3     Punto extremo de circuito de encaminamiento de llamada para banda ancha (crCircuitEndPointBb)

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

"CCITT Rec. X.721 | ISO/IEC 10165-2":administrativeStatePackage,
crCircuitEndPointBbPkg PACKAGE
    BEHAVIOUR crCircuitEndPointBbBeh;
    ATTRIBUTES
        crCircuitEndPointId
            GET SET-BY-CREATE,
        cic
            GET SET-BY-CREATE,
        propagationDelay
            GET-REPLACE,
        timeslotPtr
            GET SET-BY-CREATE;;;
    CONDITIONAL PACKAGES
        blockedForMaintenancePkg
            PRESENT IF "supplied by the managing system",
        remoteBlockingNbPkg
            PRESENT IF "supplied by the managing system",
        maintenanceSignallingRunningPkg
            PRESENT IF "supplied by the managing system";
REGISTERED AS {managedObjectClass 35};

crCircuitEndPointBbBeh BEHAVIOUR
    DEFINED AS
        "This object class represents a termination point of an individual circuit. The CIC value has to be
        unique within the NNI access.";

## 5.1.5.4 Subgrupo de puntos extremos de circuitos de encaminamiento de llamada para banda ancha (crCircuitEndPointSubgroupBb)

crCircuitEndPointSubgroupBb MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
    CHARACTERIZED BY
        crCircuitEndPointSubgroupBbPkg PACKAGE
            BEHAVIOUR crCircuitEndPointSubgroupBbBeh;
            ATTRIBUTES
                crCircuitEndPointSubgroupId
                    GET SET-BY-CREATE,
                "ITU-T M.3100":userLabel
                    GET-REPLACE,
                searchMethod
                    GET-REPLACE;;;
REGISTERED AS {managedObjectClass 36};

crCircuitEndPointSubgroupBbBeh BEHAVIOUR
    DEFINED AS
        "This object class represents a set of circuit end points with similar characteristics. The value of the
        signallingType attribute of the superior nniAccess object shall be equal 'nisup'.";

## 5.1.5.5 Datos de oficina de encaminamiento de llamadas (callRoutingOfficeData)

callRoutingOfficeData MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
    CHARACTERIZED BY
        callRoutingOfficeDataPkg PACKAGE
            BEHAVIOUR callRoutingOfficeDataBeh;
            ATTRIBUTES

callRoutingOfficeDataId
   GET SET-BY-CREATE,
ownInternationalCode
   GET-REPLACE ;
  NOTIFICATIONS
   "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
REGISTERED AS {managedObjectClass 37};

callRoutingOfficeDataBeh BEHAVIOUR
  DEFINED AS
   "This entity describes the office data concerning the call routing application. One instance of this
   object class shall be automatically created by the managed system upon completion of system
   initialization.";


## 5.1.5.6  Datos de la empresa de telecomunicaciones (carrierData)

carrierData MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
  CHARACTERIZED BY
   carrierDataPkg PACKAGE
    BEHAVIOUR carrierDataBeh;
    ATTRIBUTES
     carrierDataId
      GET SET-BY-CREATE,
     carrierCode
      GET SET-BY-CREATE;
    NOTIFICATIONS
     "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
     "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
     "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
   CONDITIONAL PACKAGES
    carrierParameterRequiredPkg
     PRESENT IF "supplied by the managing system";
REGISTERED AS {managedObjectClass 38};

carrierDataBeh BEHAVIOUR
  DEFINED AS
   "This entity describes the necessary information concerning carrier available within one exchange.";


## 5.1.5.7  Manipulación de cifras (digitManip)

digitManip MANAGED OBJECT CLASS
  DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
  CHARACTERIZED BY
   digitManipPkg PACKAGE
    BEHAVIOUR digitManipBeh;
    ATTRIBUTES
     digitManipId
      GET SET-BY-CREATE;
    NOTIFICATIONS
     "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
     "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
     "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
   CONDITIONAL PACKAGES
    destinationTypePkg
     PRESENT IF "modification of digits effects a change of the type of number" ,

```
            digitCombInsertPkg
                    PRESENT IF "supplied by managing system" ,
            digitCombReplacePkg
                    PRESENT IF "supplied by managing system" ,
            digitSuppressPkg
                    PRESENT IF "supplied by managing system" ;
REGISTERED AS {managedObjectClass 39};
```

**digitManipBeh BEHAVIOUR**
    **DEFINED AS**
        **"This entity describes the possibility to manipulate the called number (sequence of digits) and/or the destination type. Parts of the sequence or the whole number including the destination type may be changed. It is also used for signalling purposes, i.e. it can be referenced from 'routeData'. It is possible either to insert, to replace or to suppress digits. Reference for all changes is the original string, start position is the first digit.";**

## 5.1.5.8 Lista de puntos de terminación de rutas (listOfRouteTps)

```
listOfRouteTps MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
        CHARACTERIZED BY
            listOfRouteTpsPkg PACKAGE
                BEHAVIOUR listOfRouteTpsBeh;
                ATTRIBUTES
                    listOfRouteTpsId
                        GET SET-BY-CREATE,
                    listOfRoutesPtrList
                        GET-REPLACE,
                    usedAlgorithm
                        GET-REPLACE ;
                NOTIFICATIONS
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                    "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
REGISTERED AS {managedObjectClass 40};
```

**listOfRouteTpsBeh BEHAVIOUR**
    **DEFINED AS**
        **"This entity describes a set of routes for a 'postAnalysisEvaluation' object. With it an ordered list of possible routes (instance 'routeData') exists meeting the quality parameters required by attributes of 'postAnalysisEvaluation'. Additionally, it describes the traffic distribution about the set of routes.";**

## 5.1.5.9 Destino local (localDestination)

```
localDestination MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
        CHARACTERIZED BY
            localDestinationPkg PACKAGE
                BEHAVIOUR localDestinationBeh;
                ATTRIBUTES
                    localDestinationId
                        GET SET-BY-CREATE,
                    excludedSubscriberCodes
                        GET-REPLACE ADD-REMOVE,
                    initialSubscriberCodes
                        GET-REPLACE ADD-REMOVE;
```

NOTIFICATIONS
                "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
        CONDITIONAL PACKAGES
            localAreaCodePkg
                PRESENT IF "E164 addresses or subfields are supported",
            ringTimeLimitPkg
                PRESENT IF "supplied by managing system" ;
REGISTERED AS {managedObjectClass 41};

localDestinationBeh BEHAVIOUR
        DEFINED AS
            "This entity describes a set of terminating points within the exchange as the result of the digit
            analysis.";

## 5.1.5.10   Acceso NNI (nniAccess)

nniAccess MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
        CHARACTERIZED BY
            nniAccessPkg PACKAGE
                BEHAVIOUR nniAccessBeh;
                ATTRIBUTES
                    nniAccessId
                        GET SET-BY-CREATE,
                    signallingProtocol
                        GET SET-BY-CREATE,
                    networkBorder
                        GET-REPLACE,
                    linkType
                        GET-REPLACE,
                    originForRouting
                        GET-REPLACE,
                    sigRoutePtr
                        GET SET-BY-CREATE;;;
            CONDITIONAL PACKAGES
                networkTypePkg
                    PRESENT IF "supplied by the managing system";
REGISTERED AS {managedObjectClass 42};

nniAccessBeh BEHAVIOUR
        DEFINED AS
            "This object class is used to group the VPCs in broadband NNIs or equivalent narrowband links
            between two signalling points which are controlled by the same signalling protocol.";

## 5.1.5.11   Análisis de las cifras de prefijo (prefixDigitAnalysis)

prefixDigitAnalysis MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
        CHARACTERIZED BY
            prefixDigitAnalysisPkg PACKAGE
                BEHAVIOUR prefixDigitAnalysisBeh;
                ATTRIBUTES
                    prefixDigitAnalysisId
                        GET SET-BY-CREATE,
                    code
                        GET-REPLACE ADD-REMOVE,

```
                    natureOfAddress
                            GET SET-BY-CREATE;
                NOTIFICATIONS
                        "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                        "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                        "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
REGISTERED AS {managedObjectClass 43};

prefixDigitAnalysisBeh BEHAVIOUR
        DEFINED AS
                "This entity describes the digits used as prefix dependent of the nature of the address." ;
```

## 5.1.5.12   Evaluación posterior al análisis (postAnalysisEvaluation)

```
postAnalysisEvaluation MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
        CHARACTERIZED BY
                postAnalysisEvaluationPkg PACKAGE
                        BEHAVIOUR postAnalysisEvaluationBeh;
                        ATTRIBUTES
                                postAnalysisEvaluationId
                                        GET SET-BY-CREATE,
                                activeListOfRouteTpsPtr
                                        GET-REPLACE,
                                reqBandwidthEgress
                                        GET-REPLACE,
                                reqBandwidthIngress
                                        GET-REPLACE,
                                reqBearerCapab
                                        GET-REPLACE ADD-REMOVE,
                                abstractDestinationPtr
                                        GET-REPLACE,
                                transitDelayLimit
                                        GET-REPLACE ;
                        NOTIFICATIONS
                                "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                                "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                                "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
                CONDITIONAL PACKAGES
                        reqNbTransferCapabilityPkg
                                PRESENT IF "narrowband transfer capability dependent routing required" ;
REGISTERED AS {managedObjectClass 44};

postAnalysisEvaluationBeh BEHAVIOUR
        DEFINED AS
                "This entity describes a set of information like abstractDestination and different quality parameters.
                The required quality parameter of a certain call is compared with the defined value. For a certain
                call only one instance has to match the required parameters. The network operator is responsible to
                define a set of route selection criterias without gaps or overlapping parts.";
```

## 5.1.5.13   Datos de ruta (routeData)

```
routeData MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top ;
        CHARACTERIZED BY
                routeDataPkg PACKAGE
```

```
                    BEHAVIOUR routeDataBeh;
                    ATTRIBUTES
                            routeDataId
                                    GET SET-BY-CREATE,
                            linkGroupPtr
                                    GET-REPLACE ;
                    NOTIFICATIONS
                            "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                            "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                            "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
            CONDITIONAL PACKAGES
                    digitManipPtrPkg
                            PRESENT IF "digit manipulation is required" ,
                    minDigitsPkg
                            PRESENT IF "minimum number of digits for seizing required" ,
                    sendTnsPkg
                            PRESENT IF "TNS has to be signalled" ;
REGISTERED AS {managedObjectClass 45};

routeDataBeh BEHAVIOUR
        DEFINED AS
                "This entity describes one element of the ordered list of routes ('listOfRouteTps').";
```

## 5.1.5.14    Grupo de trayectos virtuales (virtualPathGroup)

```
virtualPathGroup MANAGED OBJECT CLASS
        DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
        CHARACTERIZED BY
                virtualPathGroupPkg PACKAGE
                        BEHAVIOUR virtualPathGroupBeh;
                        ATTRIBUTES
                                virtualPathGroupId
                                        GET SET-BY-CREATE,
                                "ITU-T M.3100":userLabel
                                        GET-REPLACE,
                                assignNonAssign
                                        GET SET-BY-CREATE,
                                tpAndVpciPtrList
                                        GET-REPLACE
                                        ADD-REMOVE;;;
                CONDITIONAL PACKAGES
                        searchMethodPkg
                                PRESENT IF "object instance is of type assign";
REGISTERED AS {managedObjectClass 46};

virtualPathGroupBeh BEHAVIOUR
        DEFINED AS
                "This object class represents a set of end points of VPCs with similar characteristics. The VPCs can
                be distributed over one or more physical interfaces. One physical interface can contain VPCs of
                several object instances of the object class virtualPathGroup.
                All vpTTPBidirectional referenced by the tpAndVpciPtrList shall be administratively locked before
                the virtualPathGroup can be deleted.";
```

## 5.1.5.15    Combinación XTPSG (xtpsgComb)

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

```
        xtpsgCombPkg PACKAGE
            BEHAVIOUR xtpsgCombBeh;
            ATTRIBUTES
                xtpsgCombId
                    GET SET-BY-CREATE,
                listOfLinkGroupsPtrList
                    GET-REPLACE,
                usedAlgorithm
                    GET-REPLACE ;
            NOTIFICATIONS
                "CCITT Rec. X.721 | ISO/IEC 10165-2":objectCreation,
                "CCITT Rec. X.721 | ISO/IEC 10165-2":objectDeletion,
                "CCITT Rec. X.721 | ISO/IEC 10165-2":attributeValueChange ; ; ;
REGISTERED AS {managedObjectClass 47};

xtpsgCombBeh BEHAVIOUR
    DEFINED AS
        "This entity describes an ordered list of virtual path groups (vpg) or CEPSGs.";
```

## 5.1.6    Fragmento de interfuncionamiento de servicio de emulación de circuito

## 5.1.6.1    Perfil de servicio CES (cesServiceProfile)

```
cesServiceProfile MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. X.721 | ISO/IEC 10165-2":top;
    CHARACTERIZED BY
        cesServiceProfilePkg PACKAGE
            BEHAVIOUR cesServiceProfileBeh;
            ATTRIBUTES
                cesServiceProfileId
                    GET SET-BY-CREATE,
                cesBufferedCDVtolerance
                    GET-REPLACE,
                channelAssociatedSignalling
                    GET-REPLACE;;;
REGISTERED AS {managedObjectClass 48};

cesServiceProfileBeh BEHAVIOUR
    DEFINED AS
        "This managed object is used to organize data that describes the circuit emulation service
        interworking functions of the ATM NE.
            The cesBufferedCDVtolerance attribute specifies the duration of user data that must be
        buffered by the interworkingVcTtpBidirectional managed object to offset Cell Delay variation. The
        recommended default value for DS1 CES is 750 micro seconds and 1000 micro seconds for DS3 CES.
            The channelAssociatedSignalling attribute identifies which AAL1 format should be used. It
        applies only to structured format. For unstructured format this attribute must be set to the default
        value of basic.
            Instances of this object class shall be explicitly created and deleted by the managing system.
        An instance of this object class shall not be deleted if it is in use by any
        interworkingVcTtpBidirectional object instance.";
```

## 5.1.6.2    TTP de VC bidireccional de interfuncionamiento (interworkingVcTtpBidirectional)

interworkingVcTtpBidirectional MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Rec. I.751":vcTTPBidirectional;
    CHARACTERIZED BY
        interworkingVcTtpBidirectionalPkg PACKAGE
            BEHAVIOUR interworkingVcTtpBidirectionalBeh;
            ATTRIBUTES
                "ITU-T Rec. I.751":vpiValue
                    GET,
                serviceProfilePointer
                    GET-REPLACE,
                aalProfilePointer
                    GET-REPLACE,
                terminationPointList
                    GET SET-BY-CREATE;;;
        CONDITIONAL PACKAGES
            modifyTerminationPointListPkg
                PRESENT IF "an instance supports addition and removal of interworked termination points.";
REGISTERED AS {managedObjectClass 49};

interworkingVcTtpBidirectionalBeh BEHAVIOUR
    DEFINED AS
        "This managed object represents a point in the managed system where the interworking of a service (e.g. frame relay or SMDS) or an underlying physical infrastructure (e.g. nDS0/DS1/DS3/E3/J2) takes place. At this point ATM cells are generated from the service or physical bit stream or vice versa.
            An instance of this object class shall point (via the upstreamConnectivityPointer and downstreamConnectivityPointer attributes) to a vcCTPBidirectional managed object (if already created) and that instance of vcCTPBidirectional object class shall point back (via supportedByObjectList) to this instance of interworkingVcTtpBidirectional object class.
            For the conditional package oamCellLoopbackPkg inherited from vcTTPBidirectional object, the loopback cell shall be inserted at the interworkingVcTtpBidirectional side of the network element and the direction of the cell shall be into the switch. Thus the connection matrix of the interworking NE is included by the Loopback.
            This managed object shall send a communicationsAlarm notification to the managing system, when the cellLossIntegrationPeriod (identified by aalProfile) expires.
            Instances of this object class may be explicitly created and deleted by the managing system. Instances of this managed object class may also be automatically created by the managed system.";

## 5.2    Vinculaciones de nombres

## 5.2.1    aalProfile-managedElementR1

aalProfile-managedElementR1 NAME BINDING
    SUBORDINATE OBJECT CLASS aalProfile AND SUBCLASSES;
    NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100":managedElementR1 AND
SUBCLASSES;
    WITH ATTRIBUTE aalProfileId;
    CREATE
        WITH-REFERENCE-OBJECT,
        WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {nameBinding 1};


## 5.2.2    aalProtocolCurrentData-interworkingVcTtpBidirectional

aalProtocolCurrentData-interworkingVcTtpBidirectional NAME BINDING
SUBORDINATE OBJECT CLASS aalProtocolCurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS interworkingVcTtpBidirectional AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Rec. X.739":scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {nameBinding 2};


## 5.2.3    abstractDestination-managedElementR1

abstractDestination-managedElementR1 NAME BINDING
SUBORDINATE OBJECT CLASS abstractDestination
AND SUBCLASSES ;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
AND SUBCLASSES ;
WITH ATTRIBUTE abstractDestinationId ;
CREATE
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ;
REGISTERED AS {nameBinding 3};


## 5.2.4    analysisCriteria-managedElementR1

analysisCriteria-managedElementR1 NAME BINDING
SUBORDINATE OBJECT CLASS analysisCriteria
AND SUBCLASSES ;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
AND SUBCLASSES ;
WITH ATTRIBUTE analysisCriteriaId ;
CREATE
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ;
REGISTERED AS {nameBinding 4};


## 5.2.5    bearerServiceBb-customerProfileBb

bearerServiceBb-customerProfileBb NAME BINDING
SUBORDINATE OBJECT CLASS bearerServiceBb
AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS customerProfileBb
AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Q.824.0":bearerServiceId;
CREATE;
DELETE;
REGISTERED AS {nameBinding 5};

### 5.2.6 callingNumberScreeningBb-uniAccess

callingNumberScreeningBb-uniAccess NAME BINDING
    SUBORDINATE OBJECT CLASS callingNumberScreeningBb AND SUBCLASSES;
    NAMED BY SUPERIOR OBJECT CLASS uniAccess
        AND SUBCLASSES;
    WITH ATTRIBUTE "ITU-T Q.824.1":callingNumberScreeningId;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {nameBinding 6};

### 5.2.7 callRoutingOfficeData-managedElementR1

callRoutingOfficeData-managedElementR1 NAME BINDING
    SUBORDINATE OBJECT CLASS callRoutingOfficeData
        AND SUBCLASSES ;
    NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
        AND SUBCLASSES ;
    WITH ATTRIBUTE callRoutingOfficeDataId ;
REGISTERED AS {nameBinding 7};

### 5.2.8 carrierData-managedElementR1

carrierData-managedElementR1 NAME BINDING
    SUBORDINATE OBJECT CLASS carrierData
        AND SUBCLASSES ;
    NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
        AND SUBCLASSES ;
    WITH ATTRIBUTE carrierDataId ;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE ;
REGISTERED AS {nameBinding 8};

### 5.2.9 cesServiceProfile-managedElementR1

cesServiceProfile-managedElementR1 NAME BINDING
    SUBORDINATE OBJECT CLASS cesServiceProfile
        AND SUBCLASSES ;
    NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
        AND SUBCLASSES ;
    WITH ATTRIBUTE cesServiceProfileId;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {nameBinding 9};

## 5.2.10 connectedNumberScreeningBb-uniAccess

connectedNumberScreeningBb-uniAccess NAME BINDING
    SUBORDINATE OBJECT CLASS connectedNumberScreeningBb AND SUBCLASSES;
    NAMED BY SUPERIOR OBJECT CLASS uniAccess
        AND SUBCLASSES;
    WITH ATTRIBUTE connectedNumberScreeningId;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {nameBinding 10};

## 5.2.11 crCircuitEndPoint-crCircuitEndPointSubgroupBb

crCircuitEndPointBb-crCircuitEndPointSubgroupBb NAME BINDING
    SUBORDINATE OBJECT CLASS crCircuitEndPointBb
        AND SUBCLASSES;
    NAMED BY SUPERIOR OBJECT CLASS crCircuitEndPointSubgroupBb
        AND SUBCLASSES;
    WITH ATTRIBUTE crCircuitEndPointId;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE;
REGISTERED AS {nameBinding 11};

## 5.2.12 crCircuitEndPointSubgroupBb-nniAccess

crCircuitEndPointSubgroupBb-nniAccess NAME BINDING
    SUBORDINATE OBJECT CLASS crCircuitEndPointSubgroupBb
        AND SUBCLASSES;
    NAMED BY SUPERIOR OBJECT CLASS nniAccess
        AND SUBCLASSES;
    WITH ATTRIBUTE crCircuitEndPointSubgroupId;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {nameBinding 12};

## 5.2.13 customerProfileBb-managedElementR1

customerProfileBb-managedElementR1 NAME BINDING
    SUBORDINATE OBJECT CLASS customerProfileBb
        AND SUBCLASSES;
    NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
        AND SUBCLASSES;
    WITH ATTRIBUTE "ITU-T Q.824.0":customerProfileId;
    CREATE
        WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE;
REGISTERED AS {nameBinding 13};

### 5.2.14   customizedResourceBb-customerProfileBb

customizedResourceBb-customerProfileBb NAME BINDING
      SUBORDINATE OBJECT CLASS customizedResourceBb
          AND SUBCLASSES;
      NAMED BY SUPERIOR OBJECT CLASS customerProfileBb
          AND SUBCLASSES;
      WITH ATTRIBUTE "ITU-T Q.824.0":customizedResourceId;
      CREATE
          WITH-AUTOMATIC-INSTANCE-NAMING;
      DELETE;
REGISTERED AS {nameBinding 14};


### 5.2.15   digitManip-managedElementR1

digitManip-managedElementR1 NAME BINDING
      SUBORDINATE OBJECT CLASS digitManip
          AND SUBCLASSES ;
      NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
          AND SUBCLASSES ;
      WITH ATTRIBUTE digitManipId ;
      CREATE
          WITH-AUTOMATIC-INSTANCE-NAMING;
      DELETE ;
REGISTERED AS {nameBinding 15};


### 5.2.16   directoryNumberE164-managedElementR1

directoryNumberE164-managedElementR1 NAME BINDING
      SUBORDINATE OBJECT CLASS directoryNumberE164
          AND SUBCLASSES;
      NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
          AND SUBCLASSES;
      WITH ATTRIBUTE "ITU-T Rec. Q.824.0":directoryNumberId;
      CREATE
          WITH-AUTOMATIC-INSTANCE-NAMING;
      DELETE;
REGISTERED AS {nameBinding 16};


### 5.2.17   listOfRouteTps-managedElementR1

listOfRouteTps-managedElementR1 NAME BINDING
      SUBORDINATE OBJECT CLASS listOfRouteTps
          AND SUBCLASSES ;
      NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
          AND SUBCLASSES ;
      WITH ATTRIBUTE listOfRouteTpsId ;
      CREATE
          WITH-AUTOMATIC-INSTANCE-NAMING;
      DELETE ;
REGISTERED AS {nameBinding 17};

### 5.2.18   localDestination-managedElementR1

**localDestination-managedElementR1 NAME BINDING**
    **SUBORDINATE OBJECT CLASS localDestination**
        **AND SUBCLASSES ;**
    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1**
        **AND SUBCLASSES ;**
    **WITH ATTRIBUTE localDestinationId ;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE ;**
**REGISTERED AS {nameBinding 18};**

### 5.2.19   nniAccess-managedElementR1

**nniAccess-managedElementR1 NAME BINDING**
    **SUBORDINATE OBJECT CLASS nniAccess AND SUBCLASSES;**
    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1**
        **AND SUBCLASSES;**
    **WITH ATTRIBUTE nniAccessId;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE**
        **ONLY-IF-NO-CONTAINED-OBJECTS;**
**REGISTERED AS {nameBinding 19};**

### 5.2.20   postAnalysisEvaluation-managedElementR1

**postAnalysisEvaluation-managedElementR1 NAME BINDING**
    **SUBORDINATE OBJECT CLASS postAnalysisEvaluation**
        **AND SUBCLASSES ;**
    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1**
        **AND SUBCLASSES ;**
    **WITH ATTRIBUTE postAnalysisEvaluationId ;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE ;**
**REGISTERED AS {nameBinding 20};**

### 5.2.21   prefixDigitAnalysis-managedElementR1

**prefixDigitAnalysis-managedElementR1 NAME BINDING**
    **SUBORDINATE OBJECT CLASS prefixDigitAnalysis**
        **AND SUBCLASSES ;**
    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1**
        **AND SUBCLASSES ;**
    **WITH ATTRIBUTE prefixDigitAnalysisId ;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE ;**
**REGISTERED AS {nameBinding 21};**

## 5.2.22   routeData-managedElementR1

**routeData-managedElementR1 NAME BINDING**
    **SUBORDINATE OBJECT CLASS routeData**
        **AND SUBCLASSES ;**
    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1**
        **AND SUBCLASSES ;**
    **WITH ATTRIBUTE routeDataId ;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE ;**
**REGISTERED AS {nameBinding 22};**


## 5.2.23   saalUniProtocolProfile-managedElementR1

**saalUniProtocolProfile-managedElementR1 NAME BINDING**
    **SUBORDINATE OBJECT CLASS saalUniProtocolProfile**
        **AND SUBCLASSES;**
    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. M.3100":managedElementR1**
        **AND SUBCLASSES;**
        **WITH ATTRIBUTE saalUniProtocolProfileId;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE;**
**REGISTERED AS {nameBinding 23};**


## 5.2.24   supplementaryServiceDepBb-bearerServiceBb

**supplementaryServiceDepBb-bearerServiceBb NAME BINDING**
    **SUBORDINATE OBJECT CLASS supplementaryServiceDepBb**
        **AND SUBCLASSES;**
    **NAMED BY SUPERIOR OBJECT CLASS bearerServiceBb**
        **AND SUBCLASSES;**
    **WITH ATTRIBUTE "ITU-T Q.824.0":supplementaryServiceId;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE;**
**REGISTERED AS {nameBinding 24};**


## 5.2.25   supplementaryServiceDepBb-teleserviceBb

**supplementaryServiceDepBb-teleserviceBb NAME BINDING**
    **SUBORDINATE OBJECT CLASS supplementaryServiceDepBb**
        **AND SUBCLASSES;**
    **NAMED BY SUPERIOR OBJECT CLASS teleserviceBb**
        **AND SUBCLASSES;**
    **WITH ATTRIBUTE "ITU-T Q.824.0":supplementaryServiceId;**
    **CREATE**
        **WITH-AUTOMATIC-INSTANCE-NAMING;**
    **DELETE;**
**REGISTERED AS {nameBinding 25};**

### 5.2.26 supplementaryServiceIndBb-customerProfileBb

supplementaryServiceIndBb-customerProfileBb NAME BINDING
  SUBORDINATE OBJECT CLASS supplementaryServiceIndBb
   AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS customerProfileBb
   AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T Q.824.0":supplementaryServiceId;
  CREATE
   WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE;
REGISTERED AS {nameBinding 26};

### 5.2.27 sVpTtp-managedElementR1

Se utiliza la vinculación de nombres al managedElementR1 (elemento gestionado R1) y las subcláusulas que se definen en la Recomendación I.751 [4] para las subclases del vpTTPBidirectional (TTP de VP bidireccional).

### 5.2.28 teleserviceBb-customerProfileBb

teleserviceBb-customerProfileBb NAME BINDING
  SUBORDINATE OBJECT CLASS teleserviceBb
   AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS customerProfileBb
   AND SUBCLASSES;
  WITH ATTRIBUTE "ITU-T Q.824.0":teleserviceId;
  CREATE
   WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE;
REGISTERED AS {nameBinding 27};

### 5.2.29 userData-customerProfileBb

userData-customerProfileBb NAME BINDING
  SUBORDINATE OBJECT CLASS userData
   AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS customerProfileBb
   AND SUBCLASSES;
  WITH ATTRIBUTE userDataId;
  CREATE
   WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE;
REGISTERED AS {nameBinding 28};

### 5.2.30 uniAccess-managedElementR1

uniAccess-managedElementR1 NAME BINDING
  SUBORDINATE OBJECT CLASS uniAccess AND SUBCLASSES;
  NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1
   AND SUBCLASSES;
  WITH ATTRIBUTE uniAccessId;

**CREATE**

        **WITH-AUTOMATIC-INSTANCE-NAMING;**

**DELETE**

        **ONLY-IF-NO-CONTAINED-OBJECTS;**

**REGISTERED AS {nameBinding 29};**


### 5.2.31   vcCTPBidirectional-managedElementR1

**vcCTPBidirectional-managedElementR1 NAME BINDING**

    **SUBORDINATE OBJECT CLASS "ITU-T I.751":vcCTPBidirectional AND SUBCLASSES ;**

    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1 AND SUBCLASSES ;**

    **WITH ATTRIBUTE "ITU-T M.3100":cTPId ;**

    **BEHAVIOUR**

        **vcCTPBidirectional-managedElementR1Behaviour BEHAVIOUR**

        **DEFINED AS**

        **"The value of vcCTPId attribute (VCI value) in the vcCTPBidirectional object is used internal to the ATM Network Element and the value it is given is a local matter.";;**

    **CREATE**

        **WITH-AUTOMATIC-INSTANCE-NAMING;**

    **DELETE**

        **ONLY-IF-NO-CONTAINED-OBJECTS;**

**REGISTERED AS {nameBinding 30};**


### 5.2.32   virtualPathGroup-nniAccess

**virtualPathGroup-nniAccess NAME BINDING**

    **SUBORDINATE OBJECT CLASS virtualPathGroup AND SUBCLASSES;**

    **NAMED BY SUPERIOR OBJECT CLASS nniAccess**

        **AND SUBCLASSES;**

    **WITH ATTRIBUTE virtualPathGroupId;**

    **CREATE**

        **WITH-AUTOMATIC-INSTANCE-NAMING;**

    **DELETE;**

**REGISTERED AS {nameBinding 31};**


### 5.2.33   xtpsgComb-managedElementR1

**xtpsgComb-managedElementR1 NAME BINDING**

    **SUBORDINATE OBJECT CLASS xtpsgComb**

        **AND SUBCLASSES ;**

    **NAMED BY SUPERIOR OBJECT CLASS "ITU-T M.3100":managedElementR1**

        **AND SUBCLASSES ;**

    **WITH ATTRIBUTE xtpsgCombId ;**

    **CREATE**

        **WITH-AUTOMATIC-INSTANCE-NAMING;**

    **DELETE ;**

**REGISTERED AS {nameBinding 32};**

## 5.3 Definición de lotes

### 5.3.1 Lote de parámetro de calidad de funcionamiento AAL tipo 1 (aalTypeOnePerformanceParameterPkg)

**aalTypeOnePerformanceParameterPkg PACKAGE**
    **ATTRIBUTES**
        **sequenceViolations**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **cellLoss**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **cellMisinsertion**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **bufferUnderflows**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **bufferOverflows**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **headerErrors**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **stdPointerReframes**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET,**
        **stdPointerParityFailures**
            **REPLACE-WITH-DEFAULT**
            **DEFAULT VALUE ASN1DefinedTypesModule.integerZero**
            **GET;**
**REGISTERED AS {package 1};**

### 5.3.2 Lote de datos históricos de parámetro de calidad de funcionamiento AAL tipo 1 (aalTypeOnePerformanceParameterHistoryDataPkg)

**aalTypeOnePerformanceParameterHistoryDataPkg PACKAGE**
    **ATTRIBUTES**
        **sequenceViolations**
            **GET,**
        **cellLoss**
            **GET,**
        **cellMisinsertion**
            **GET,**
        **bufferUnderflows**
            **GET,**
        **bufferOverflows**
            **GET,**

```
        headerErrors
                GET,
        stdPointerReframes
                GET,
        stdPointerParityFailures
                GET;
REGISTERED AS {package 2};
```

### 5.3.3    Lote de perfil AAL tipo 1 (aalTypeOneProfilePkg)

```
aalTypeOneProfilePkg PACKAGE
        ATTRIBUTES
                cbrRate
                        GET,
                cellLossIntegrationPeriod
                        GET,
                clockRecoveryType
                        GET,
                forwardErrorCorrectionMethod
                        GET,
                partiallyFilledCells
                        GET,
                structuredDataTransfer
                        GET,
                subType
                        GET;
REGISTERED AS {package 3};
```

### 5.3.4    Lote de parámetro de calidad de funcionamiento AAL tipo 3/4
###          (aalTypeThreeFourPerformanceParameterPkg)

```
aalTypeThreeFourPerformanceParameterPkg PACKAGE
        ATTRIBUTES
                sumOfInvalidSARFieldErrors
                        REPLACE-WITH-DEFAULT
                        DEFAULT VALUE ASN1DefinedTypesModule.integerZero
                        GET,
                sumOfIncorrectSARFieldErrors
                        REPLACE-WITH-DEFAULT
                        DEFAULT VALUE ASN1DefinedTypesModule.integerZero
                        GET,
                sarCrcViolations
                        REPLACE-WITH-DEFAULT
                        DEFAULT VALUE ASN1DefinedTypesModule.integerZero
                        GET,
                comsEomsUnexpectedSN
                        REPLACE-WITH-DEFAULT
                        DEFAULT VALUE ASN1DefinedTypesModule.integerZero
                        GET,
                bomsEomsUnexpectedMID
                        REPLACE-WITH-DEFAULT
                        DEFAULT VALUE ASN1DefinedTypesModule.integerZero
                        GET,
                sriTimeOuts
                        REPLACE-WITH-DEFAULT
                        DEFAULT VALUE ASN1DefinedTypesModule.integerZero
                        GET,
```

```
numberOfAborts
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE ASN1DefinedTypesModule.integerZero
    GET,
sumOfInvalidCSFieldErrors
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE ASN1DefinedTypesModule.integerZero
    GET,
sumOfIncorrectCSFieldErrors
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE ASN1DefinedTypesModule.integerZero
    GET,
bETagMismatch
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE ASN1DefinedTypesModule.integerZero
    GET,
lengthBASizeMismatch
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE ASN1DefinedTypesModule.integerZero
    GET,
lengthMismatch
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE ASN1DefinedTypesModule.integerZero
    GET;
REGISTERED AS {package 4};
```

### 5.3.5    Lote de datos históricos de parámetros de calidad de funcionamiento AAL tipo 3/4 (aalTypeThreeFourPerformanceParameterHistoryDataPkg)

```
aalTypeThreeFourPerformanceParameterHistoryDataPkg PACKAGE
    ATTRIBUTES
        sumOfInvalidSARFieldErrors
            GET,
        sumOfIncorrectSARFieldErrors
            GET,
        sarCrcViolations
            GET,
        comsEomsUnexpectedSN
            GET,
        bomsEomsUnexpectedMID
            GET,
        sriTimeOuts
            GET,
        numberOfAborts
            GET,
        sumOfInvalidCSFieldErrors
            GET,
        sumOfIncorrectCSFieldErrors
            GET,
        bETagMismatch
            GET,
        lengthBASizeMismatch
            GET,
        lengthMismatch
            GET;
REGISTERED AS {package 5};
```

### 5.3.6 Lote de perfil AAL tipo 3/4 (aalTypeThreeFourProfilePkg)

```
aalTypeThreeFourProfilePkg PACKAGE
    ATTRIBUTES
        maxCpcsPduSize
            GET,
        midRange
            GET,
        aalMode
            GET,
        sscsType
            GET;
REGISTERED AS {package 6};
```

### 5.3.7 Lote de parámetros de calidad de funcionamiento AAL tipo 5 (aalTypeFivePerformanceParameterPkg)

```
aalTypeFivePerformanceParameterPkg PACKAGE
    ATTRIBUTES
        sumOfInvalidCSFieldErrors
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE ASN1DefinedTypesModule.integerZero
            GET,
        crcViolations
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE ASN1DefinedTypesModule.integerZero
            GET,
        reassemblyTimerExpirations
            REPLACE-WITH-DEFAULT
            DEFAULT VALUE ASN1DefinedTypesModule.integerZero
            GET;
REGISTERED AS {package 7};
```

### 5.3.8 Lote de datos históricos de parámetro de calidad de funcionamiento AAL tipo 5 (aalTypeFivePerformanceParameterHistoryDataPkg)

```
aalTypeFivePerformanceParameterHistoryDataPkg PACKAGE
    ATTRIBUTES
        sumOfInvalidCSFieldErrors
            GET,
        crcViolations
            GET,
        reassemblyTimerExpirations
            GET;
REGISTERED AS {package 8};
```

### 5.3.9 Lote de perfil AAL tipo 5 (aalTypeFiveProfilePkg)

```
aalTypeFiveProfilePkg PACKAGE
    ATTRIBUTES
        maxCpcsPduSize
            GET,
        aalMode
            GET,
        sscsType
            GET;
REGISTERED AS {package 9};
```

### 5.3.10   Lote de bloqueado para mantenimiento (blockedForMaintenancePkg)

```
blockedForMaintenancePkg PACKAGE
     ATTRIBUTES
          blockedForMaintenance
               DEFAULT VALUE ASN1DefinedTypesModule.defaultBlockedForMaintenance
               GET-REPLACE;
REGISTERED AS {package 10};
```

### 5.3.11   Presentación de la identificación de la línea llamante para lote de banda ancha (clipBbPkg)

```
clipBbPkg    PACKAGE
     BEHAVIOUR clipBbBeh;
     ATTRIBUTES
          "ITU-T Q.824.2": noRestrictionsAllowed
                    GET-REPLACE;;

clipBbBeh BEHAVIOUR
     DEFINED AS
          "This Supplementary Service (described in Rec. Q.2951.3) provides the called party with the
          possibility of receiving identification of the calling party. In addition to the ISDN number, the calling
          line identity may include a subaddress generated by the calling user and transparently transported
          by the network. The network shall deliver the calling line identity to the called party during call
          establishment, regardless of the terminal capability to handle the information.";
```

### 5.3.12   Restricción de la identificación de la línea llamante para lote de banda ancha (clirBbPkg)

```
clirBbPkg    PACKAGE
     BEHAVIOUR clirBbBeh;
     ATTRIBUTES
          "ITU-T Q.824.2": callIdRestrictionOptions
               GET-REPLACE;;

clirBbBeh BEHAVIOUR
     DEFINED AS
          "This Supplementary Service (described in Rec. Q.2951.4) provides the calling party with the
          possibility to prevent presentation of the calling party's ISDN number, and subaddress information
          (if any) to the called party. If the called party subscribes to the CLIP Supplementary Service then
          the called party shall receive an indication that the calling party information is not available due to
          restriction.";
```

### 5.3.13   Lote de puntero de datos de empresa de telecomunicaciones (carrierDataPtrPkg)

```
carrierDataPtrPkg PACKAGE
     ATTRIBUTES
          carrierDataPtr
               GET SET-BY-CREATE;
REGISTERED AS {package 11};
```

### 5.3.14   Lote de parámetro requerido de empresa de telecomunicaciones (carrierParameterRequiredPkg)

```
carrierParameterRequiredPkg PACKAGE
     ATTRIBUTES
          cspRequired
               GET-REPLACE,
```

### 5.3.15 Opción de abono a grupo cerrado de usuarios para lote de banda ancha (cugSubscriptionOptionBbPkg)

**cugSubscriptionOptionBbPkg PACKAGE**
**BEHAVIOUR cugSubscriptionOptionBbBeh;**
**ATTRIBUTES**
**preferredCugIndex**
**GET-REPLACE,**
**interCugAccess**
**GET-REPLACE;;**

**cugSubscriptionOptionBbBeh BEHAVIOUR**
**DEFINED AS**
"The CUG subscription options object may only be instantiated if either attribute preferredCugIndex is assigned a non-NULL value or attribute interCugAccess is not empty. M_SET operations which would result in preferredCugIndex value NULL and interCugAccess value empty set are not allowed. The value of attribute preferredCugIndex should not be NULL when interCugvalue is 'none' or 'incomingaccess'.";

### 5.3.16 Presentación de la identificación de la línea conectada para lote de banda ancha (colpBbPkg)

**colpBbPkg   PACKAGE**
**BEHAVIOUR colpBbBeh;**
**ATTRIBUTES**
**noColpRestrictionsAllowed**
**GET-REPLACE;;**

**colpBbBeh BEHAVIOUR**
**DEFINED AS**
"This Supplementary Service (described in Rec. Q.2951.5) provides the calling party with the possibility of receiving identification of the connected party.";

### 5.3.17 Restricción de la identificación de la línea conectada para lote de banda ancha (colrBbPkg)

**colrBbPkg   PACKAGE**
**BEHAVIOUR colrBbBeh;**
**ATTRIBUTES**
**connLineIdRestrictionOptions**
**GET-REPLACE;;**

**colrBbBeh BEHAVIOUR**
**DEFINED AS**
"This Supplementary Service (described in Rec. Q.2951.6) provides the called party with the possibility to prevent presentation of the connected party's ISDN number, and subaddress information (if any) to the calling party.";

### 5.3.18 Lote de comportamiento de punteros de perfil de cliente (customerProfilePointersBehPkg)

**customerProfilePointersBehPkg  PACKAGE**
**BEHAVIOUR customerProfilePointersBeh;**
**REGISTERED AS {package 13};**

**customerProfilePointersBeh BEHAVIOUR**

    **DEFINED AS**

        **"The attribute 'customerProfilePtr' in the slave objects are synchronized with the pointers in the master customer profile object. That is, when the pointers in the associated customer profile object are changed, the 'customerProfilePtr' in the slave objects are updated accordingly.";**

## 5.3.19 Lote de comportamiento de punteros de recurso personalizado (customizedResourcePointersBehPkg)

**customizedResourcePointersBehPkg    PACKAGE**

    **BEHAVIOUR customizedResourcePointersBeh;**

**REGISTERED AS {package 14};**

**customizedResourcePointersBeh BEHAVIOUR**

    **DEFINED AS**

        **"The attribute 'customizedResourcePtrList' in the slave objects are synchronized with the pointers in the master customized resource object. That is, when the pointers in the associated customized resource object are changed, the 'customizedResourcePtrList' in the slave objects are updated accordingly.";**

## 5.3.20 Lote de código de destino (destinationCodePkg)

**destinationCodePkg PACKAGE**

    **ATTRIBUTES**

        **destinationCode**

            **GET SET-BY-CREATE;**

**REGISTERED AS {package 15};**

## 5.3.21 Lote de tipo de destino (destinationTypePkg)

**destinationTypePkg PACKAGE**

    **ATTRIBUTES**

        **destinationType**

            **GET SET-BY-CREATE;**

**REGISTERED AS {package 16};**

## 5.3.22 Lote de inserción de combinación de cifras (digitCombInsertPkg)

**digitCombInsertPkg PACKAGE**

    **ATTRIBUTES**

        **digitCombInsert**

            **GET-REPLACE ADD-REMOVE ;**

**REGISTERED AS {package 17};**

## 5.3.23 Lote de sustitución de combinación de cifras (digitCombReplacePkg)

**digitCombReplacePkg PACKAGE**

    **ATTRIBUTES**

        **digitCombReplace**

            **GET-REPLACE ADD-REMOVE ;**

**REGISTERED AS {package 18};**

## 5.3.24   Lote de puntero de manipulación de cifras (digitManipPtrPkg)

digitManipPtrPkg PACKAGE
    ATTRIBUTES
        digitManipPtr
            GET-REPLACE ;
REGISTERED AS {package 19};

## 5.3.25   Lote de supresión de cifras (digitSuppressPkg)

digitSuppressPkg PACKAGE
    ATTRIBUTES
        digitSuppress
            GET-REPLACE ADD-REMOVE ;
REGISTERED AS {package 20};

## 5.3.26   Lote de código de área local (localAreaCodePkg)

localAreaCodePkg PACKAGE
    ATTRIBUTES
        localAreaCode
            GET-REPLACE;
REGISTERED AS {package 21};

## 5.3.27   Lote de señalización de mantenimiento en ejecución (maintenanceSignallingRunningPkg)

maintenanceSignallingRunningPkg PACKAGE
    ATTRIBUTES
        maintenanceSignallingRunning
            INITIAL VALUE DERIVATION RULE setByManagerBeh
            GET;
REGISTERED AS {package 22};

## 5.3.28   Lote de cifras máximas (maxDigitsPkg)

maxDigitsPkg PACKAGE
    ATTRIBUTES
        maxDigits
            GET-REPLACE ;
REGISTERED AS {package 23};

## 5.3.29   Lote de cifras mínimas (minDigitsPkg)

minDigitsPkg PACKAGE
    ATTRIBUTES
        minDigits
            GET-REPLACE ;
REGISTERED AS {package 24};

### 5.3.30 Lote de modificación de lista de puntos de terminación (modifyTerminationPointListPkg)

modifyTerminationPointListPkg PACKAGE
    ACTIONS
        addTerminationPoint,
        removeTerminationPoint;
REGISTERED AS {package 25};

### 5.3.31 Lote de tipo de red (networkTypePkg)

networkTypePkg PACKAGE
    ATTRIBUTES
        networkType
            GET SET-BY-CREATE;
REGISTERED AS {package 26};

### 5.3.32 Lote de marca de origen (originMarkPkg)

originMarkPkg PACKAGE
    ATTRIBUTES
        originMark
            GET-REPLACE;
REGISTERED AS {package 27};

### 5.3.33 Lote de indagación después de la retransmisión (pollAfterRetransmissionPkg)

pollAfterRetransmissionPkg PACKAGE
    BEHAVIOUR pollAfterRetransmissionPkgBeh;
    ATTRIBUTES
        pollAfterRetransmission
            GET SET-BY-CREATE;
REGISTERED AS {package 28};

pollAfterRetransmissionPkgBeh BEHAVIOUR
    DEFINED AS
        "This package should be used, if the poll after retransmission can be selected at creation time of a saalUniProtocolProfile.";

### 5.3.34 Lote de empresa de telecomunicaciones preferida (preferredCarrierPkg)

preferredCarrierPkg PACKAGE
    ATTRIBUTES
        preferredCarrier
            GET-REPLACE;
REGISTERED AS {package 29};

### 5.3.35 Lote de retardo de propagación (propagationDelayPkg)

propagationDelayPkg PACKAGE
    ATTRIBUTES
        propagationDelay
            GET-REPLACE;
REGISTERED AS {package 30};

### 5.3.36   Lote de bloqueo distante (remoteBlockingPkg)

**remoteBlockingPkg PACKAGE**
    **ATTRIBUTES**
        **remoteBlocking**
            **INITIAL VALUE DERIVATION RULE setByManagerBeh**
            **GET;**
**REGISTERED AS {package 31};**


### 5.3.37   Lote de banda estrecha de bloqueo distante (remoteBlockingNbPkg)

**remoteBlockingNbPkg PACKAGE**
    **ATTRIBUTES**
        **remoteBlocking**
            **INITIAL VALUE DERIVATION RULE setByManagerBeh**
            **GET,**
        **remoteBlockingReason**
            **INITIAL VALUE DERIVATION RULE setByManagerBeh**
            **GET;**
**REGISTERED AS {package 32};**


### 5.3.38   Lote de capacidad requerida de transferencia en banda estrecha (reqNbTransferCapabilityPkg)

**reqNbTransferCapabilityPkg PACKAGE**
    **ATTRIBUTES**
        **reqNbTransferCapability**
            **GET-REPLACE ADD-REMOVE;**
**REGISTERED AS {package 33};**


### 5.3.39   Lote de límite de tiempo de tono de llamada (ringTimeLimitPkg)

**ringTimeLimitPkg PACKAGE**
    **ATTRIBUTES**
        **ringTimeLimit**
            **GET-REPLACE ;**
**REGISTERED AS {package 34};**


### 5.3.40   Lote de método de búsqueda (searchMethodPkg)

**searchMethodPkg PACKAGE**
    **ATTRIBUTES**
        **searchMethod**
            **GET-REPLACE;**
**REGISTERED AS {package 35};**


### 5.3.41   Lote de envío de TNS (sendTnsPkg)

**sendTnsPkg PACKAGE**
    **ATTRIBUTES**
        **sendTns**
            **GET-REPLACE ;**
**REGISTERED AS {package 36};**

### 5.3.42   Lote de puntero de canal de señalización (signallingChannelPtrPkg)

signallingChannelPtrPkg PACKAGE
        ATTRIBUTES
                aalPtr
                        GET-REPLACE,
                signallingChannelPtr
                        GET SET-BY-CREATE;
REGISTERED AS {package 37};


### 5.3.43   Lote de tipo de señalización (signallingTypePkg)

signallingTypePkg PACKAGE
        ATTRIBUTES
                signallingType
                        DEFAULT VALUE ASN1DefinedTypesModule.defaultSignallingType
                        GET SET-BY-CREATE;
REGISTERED AS {package 38};


### 5.3.44   Subdireccionamiento para lote de banda ancha (subBbPkg)

subBbPkg    PACKAGE
        BEHAVIOUR subBbBeh;;

subBbBeh BEHAVIOUR
        DEFINED AS
                "This Supplementary Service (described in Rec. Q.2951.8) provides the called user to expand his
                addressing capacity beyond the one given by the ISDN number.";


### 5.3.45   Lote de entrega de dos números de parte llamante
###          (twoCallingPartyNumberDeliveryPkg)

twoCallingPartyNumberDeliveryPkg PACKAGE
        ATTRIBUTES
                twoCallingPartyNumberDelivery
                        DEFAULT VALUE ASN1DefinedTypesModule.defaultTwoCallingPartyNumberDelivery
                        GET-REPLACE;
REGISTERED AS {package 39};


### 5.3.46   Señalización de usuario a usuario para lote de banda ancha
###          (userToUserSignallingBbPkg)

userToUserSignallingBbPkg       PACKAGE
        BEHAVIOUR userToUserSignallingBbBeh;;

userToUserSignallingBbBeh BEHAVIOUR
        DEFINED AS
                "This service allows an ISDN subscriber to send/receive a limited amount of information to/from
                another ISDN subscriber over the signalling channel associated with their call according to
                Rec. Q.2957.";

## 5.4 Definición de atributos

### 5.4.1 Modo AAL (aalMode)

**aalMode ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.AalMode;**
    **MATCHES FOR EQUALITY, ORDERING;**
    **BEHAVIOUR aalModeBeh;**
**REGISTERED AS {attribute 1};**

**aalModeBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute indicates whether the AAL for the supporting VCC is operating in message mode or streaming mode, assured or unassured.";**

### 5.4.2 Puntero AAL (aalPtr)

**aalPtr ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectInstance;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR aalPtrBeh;**
**REGISTERED AS {attribute 2};**

**aalPtrBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute identifies the associated object which represents the functions performed at the ATM adaptation layer.";**

### 5.4.3 Identificador de perfil AAL (aalProfileId)

**aalProfileId ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR aalProfileIdBeh;**
**REGISTERED AS {attribute 3};**

**aalProfileIdBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute can be used as an RDN when naming an instance of the aalProfile managed object class.";**

### 5.4.4 Puntero de perfil AAL (aalProfilePointer)

**aalProfilePointer ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PointerOrNull;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR aalProfilePointerBeh;**
**REGISTERED AS {attribute 4};**

**aalProfilePointerBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute provides a pointer to an aalProfile managed object instance that defines the common ATM Adaptation Layer processing needed.";**

### 5.4.5 Tipo AAL (aalType)

**aalType ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.AalType;**
    **MATCHES FOR EQUALITY;**

```
        BEHAVIOUR aalTypeBeh;
REGISTERED AS {attribute 5};

aalTypeBeh BEHAVIOUR
        DEFINED AS
                "This attribute identifies the AAL Type. Valid types are AAL1, AAL3/4, and AAL5.";
```

### 5.4.6    Identificador de destino abstracto (abstractDestinationId)

```
abstractDestinationId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
        MATCHES FOR EQUALITY;
        BEHAVIOUR abstractDestinationIdBeh;
REGISTERED AS {attribute 6};

abstractDestinationIdBeh BEHAVIOUR
        DEFINED AS
                "This entity describes the object identifier attribute of the object class 'abstractDestination'." ;
```

### 5.4.7    Puntero de destino abstracto (abstractDestinationPtr)

```
abstractDestinationPtr ATTRIBUTE
        WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.AbstractDestinationPtr ;
        MATCHES FOR EQUALITY;
        BEHAVIOUR abstractDestinationPtrBeh;
REGISTERED AS {attribute 7};

abstractDestinationPtrBeh BEHAVIOUR
        DEFINED AS
                "This entity describes the pointer to the instance of 'abstractDestination'." ;
```

### 5.4.8    Lista de punteros de acceso (accessPtrList)

```
accessPtrList ATTRIBUTE
        WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SetOfInstances;
        MATCHES FOR EQUALITY;
        BEHAVIOUR accessPtrListBeh;
REGISTERED AS {attribute 8};

accessPtrListBeh BEHAVIOUR
        DEFINED AS
                "This is a set-valued attribute whose value(s) points to instances of the Access object class or its
                subclasses.";
```

### 5.4.9    Puntero de lista activa de puntos de terminación de ruta (activeListOfRouteTpsPtr)

```
activeListOfRouteTpsPtr ATTRIBUTE
        WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ActiveListOfRouteTpsPtr ;
        MATCHES FOR EQUALITY;
        BEHAVIOUR activeListOfRouteTpsPtrBeh;
REGISTERED AS {attribute 9};

activeListOfRouteTpsPtrBeh BEHAVIOUR
        DEFINED AS
                "This entity describes the pointer to the selected 'ListOfRouteTps' object, which contains an ordered
                list of instances of 'routeData' matching the selection criteria." ;
```

### 5.4.10   Puntero de objetivo activo (activeTargetPtr)

activeTargetPtr ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ActiveTargetPtr ;
 MATCHES FOR EQUALITY;
 BEHAVIOUR activeTargetPtrBeh;
REGISTERED AS {attribute 10};

activeTargetPtrBeh BEHAVIOUR
 DEFINED AS
  "This entity describes the target which is currently addressed by the 'analysisCriteria' instance.";

### 5.4.11   Identificador de criterios de análisis (analysisCriteriaId)

analysisCriteriaId ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
 MATCHES FOR EQUALITY;
 BEHAVIOUR analysisCriteriaIdBeh;
REGISTERED AS {attribute 11};

analysisCriteriaIdBeh BEHAVIOUR
 DEFINED AS
  "This entity describes the object identifier attribute of the object class 'analysisCriteria'." ;

### 5.4.12   Asignación o no asignación (assignNonAssign)

assignNonAssign ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.AssignNonAssign;
 MATCHES FOR EQUALITY;
 BEHAVIOUR assignNonAssignBeh;
REGISTERED AS {attribute 12};

assignNonAssignBeh BEHAVIOUR
 DEFINED AS
  "Indicates whether the exchange is for the VPC's of this object instance the assigning or the nonassigning exchange.";

### 5.4.13   Discordancia de rótulos B/E (bETagMismatch)

bETagMismatch ATTRIBUTE
 DERIVED FROM "ITU-T Rec. X.721":counter;
 BEHAVIOUR bETagMismatchBeh;
REGISTERED AS {attribute 13};

bETagMismatchBeh BEHAVIOUR
 DEFINED AS
  "This attribute represents the number of times an incoming CS_PDU had a BTag field value that did not equal the ETag field value.";

### 5.4.14   Bloqueado para mantenimiento (blockedForMaintenance)

blockedForMaintenance ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.BlockedForMaintenance;
 MATCHES FOR EQUALITY;
 BEHAVIOUR blockedForMaintenanceBeh;
REGISTERED AS {attribute 14};

**blockedForMaintenanceBeh BEHAVIOUR**

    **DEFINED AS**

        "This attribute indicates the blocking state of the virtual path and is typically used when creating new VPs. A blocked virtual path cannot be selected for new non-test traffic; however it can be used for test calls. The blocking of a virtual path has no influence on existing calls (non-test calls and test calls).";

### 5.4.15 BOM/EOM con MID no esperado (bomsEomsUnexpectedMID)

**bomsEomsUnexpectedMID ATTRIBUTE**

    **DERIVED FROM "ITU-T Rec. X.721":counter;**

    **BEHAVIOUR bomsEomsUnexpectedMIDBeh;**

**REGISTERED AS {attribute 15};**

**bomsEomsUnexpectedMIDBeh BEHAVIOUR**

    **DEFINED AS**

        "This attribute represents the number of BOM/EOM segments with an unexpected MID value. This attribute will be incremented by one each time a BOM is received with a currently active MID (a MID for which an EOM has not yet been received), or when an EOM is received for which a MID is NOT currently active. ";

### 5.4.16 Desbordamientos de memoria tampón (bufferOverflows)

**bufferOverflows ATTRIBUTE**

    **DERIVED FROM "ITU-T Rec. X.721":counter;**

    **BEHAVIOUR bufferOverflowsBeh;**

**REGISTERED AS {attribute 16};**

**bufferOverflowsBeh BEHAVIOUR**

    **DEFINED AS**

        "This attribute represents a count of the number of times the reassembly buffer overflows. If the interworking function is implemented with multiple buffers, such as a cell level buffer and a bit level buffer, then either buffer overflow will cause this count to be incremented.";

### 5.4.17 Liberación de memoria tampón (bufferRelease)

**bufferRelease ATTRIBUTE**

    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.BufferRelease;**

    **BEHAVIOUR bufferReleaseBeh;**

**REGISTERED AS {attribute 17};**

**bufferReleaseBeh BEHAVIOUR**

    **DEFINED AS**

        "This attribute determines whether SSCOP can release its transmission buffer and transmission queue on connection release and can selectively release messages from the transmission buffer when older messages are still outstanding.";

### 5.4.18 Desbordamiento de memoria tampón por debajo (bufferUnderflows)

**bufferUnderflows ATTRIBUTE**

    **DERIVED FROM "ITU-T Rec. X.721":counter;**

    **BEHAVIOUR bufferUnderflowsBeh;**

**REGISTERED AS {attribute 18};**

**bufferUnderflowsBeh BEHAVIOUR**
>    DEFINED AS
>>        "This attribute represents a count the number of times the reassembly buffer underflows. In the case of a continuous underflow caused by a loss of ATM cell flow, a single buffer underflow should be counted. If the interworking function is implemented with multiple buffers, such as a cell level buffer and a bit level buffer, then either buffer underflow will cause this count to be incremented.";

## 5.4.19   Categoría de la parte llamante (callingPartyCategory)

**callingPartyCategory ATTRIBUTE**
>    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CallingPartyCategory ;
>    MATCHES FOR EQUALITY;
>    BEHAVIOUR callingPartyCategoryBeh;
**REGISTERED AS {attribute 19};**

**callingPartyCategoryBeh BEHAVIOUR**
>    DEFINED AS
>>        "This entity describes the category as the type of calling subscriber considered for the routing process." ;

## 5.4.20   Tipo de representación del número de la parte llamada (cdpnRepresentationType)

**cdpnRepresentationType ATTRIBUTE**
>    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CdpnRepresentationType;
>    BEHAVIOUR cdpnRepresentationTypeBeh;
**REGISTERED AS {attribute 20};**

**cdpnRepresentationTypeBeh BEHAVIOUR**
>    DEFINED AS
>>        "This attribute specifies the format (nature of address) of the called party number to be delivered to the called party." ;

## 5.4.21   Identificador de punto extremo de circuito de encaminamiento de llamada (crCircuitEndPointId)

**crCircuitEndPointId ATTRIBUTE**
>    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;
>    MATCHES FOR EQUALITY;
>    BEHAVIOUR crCircuitEndPointIdBeh;
**REGISTERED AS {attribute 21};**

**crCircuitEndPointIdBeh BEHAVIOUR**
>    DEFINED AS
>>        "This attribute is used to name instances of the crCircuitEndPoint managed object class.";

## 5.4.22   Identificador de subgrupo de puntos extremos de circuitos de encaminamiento de llamada (crCircuitEndPointSubgroupId)

**crCircuitEndPointSubgroupId ATTRIBUTE**
>    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;
>    MATCHES FOR EQUALITY;
>    BEHAVIOUR crCircuitEndPointSubgroupIdBeh;
**REGISTERED AS {attribute 22};**

**crCircuitEndPointSubgroupIdBeh BEHAVIOUR**
>    DEFINED AS
>>        "This attribute is used to name instances of the crCircuitEndPointSubgroup managed object class.";

### 5.4.23 Identificador de datos de oficina de encaminamiento de llamada (callRoutingOfficeDataId)

callRoutingOfficeDataId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR callRoutingOfficeDataIdBeh;
REGISTERED AS {attribute 23};

callRoutingOfficeDataIdBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the object identifier attribute of the object class 'callRoutingOfficeData'." ;

### 5.4.24 Código de empresa de telecomunicaciones (carrierCode)

carrierCode ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CarrierCode ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR carrierCodeBeh;
REGISTERED AS {attribute 24};

carrierCodeBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the unambiguous carrier specific code used to distinguish it from other carriers at the exchange. It can be dialled by the customer or supplied by the originating exchange." ;

### 5.4.25 Identificador de datos de empresa de telecomunicaciones (carrierDataId)

carrierDataId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR carrierDataIdBeh;
REGISTERED AS {attribute 25};

carrierDataIdBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the object identifier attribute of the object class 'carrierData'." ;

### 5.4.26 Puntero de datos de empresa de telecomunicaciones (carrierDataPtr)

carrierDataPtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CarrierDataPtr ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR carrierDataPtrBeh;
REGISTERED AS {attribute 26};

carrierDataPtrBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the pointer to an instance of 'carrierData'." ;

### 5.4.27 Velocidad de CBR (cbrRate)

cbrRate ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Integer;
    MATCHES FOR EQUALITY, ORDERING;
    BEHAVIOUR cbrRateBeh;
REGISTERED AS {attribute 27};

cbrRateBeh BEHAVIOUR
    DEFINED AS
        "This attribute represents the rate of the CBR service supported by the AAL.";

## 5.4.28   Pérdida de células (cellLoss)

cellLoss ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR cellLossBeh;
REGISTERED AS {attribute 28};

cellLossBeh BEHAVIOUR
    DEFINED AS
        "This attribute represents a count the number of lost cells, as detected by the AAL1 sequence number processing, for example. This count records the number of cells detected as lost in the network prior to the destination interworking function AAL1 layer processing. A negative value indicates that this attribute is not supported.";

## 5.4.29   Periodo de integración de la pérdida de células (cellLossIntegrationPeriod)

cellLossIntegrationPeriod ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Integer;
    MATCHES FOR EQUALITY, ORDERING;
    BEHAVIOUR cellLossIntegrationPeriodBeh;
REGISTERED AS {attribute 29};

cellLossIntegrationPeriodBeh BEHAVIOUR
    DEFINED AS
        "This attribute identifies the time in milliseconds for the cell loss integration period. If cells are lost for this period of time, the containing interworkingVcTtpBidirectional object will generate a communications alarm.";

## 5.4.30   Inserción errónea de células (cellMisinsertion)

cellMisinsertion ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR cellMisinsertionBeh;
REGISTERED AS {attribute 30};

cellMisinsertionBeh BEHAVIOUR
    DEFINED AS
        "This attribute represents a count of sequence violation events which the AAL CS interprets as misinserted of cells as defined by ITU-T Rec. I.363.1. A negative value indicates that this attribute is not supported.";

## 5.4.31   Tolerancia a las CDV almacenadas en memoria tampón por el CES (cesBufferedCDVtolerance)

cesBufferedCDVtolerance ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Integer;
    MATCHES FOR EQUALITY;
    BEHAVIOUR cesBufferedCDVtoleranceBeh;
REGISTERED AS {attribute 31};

cesBufferedCDVtoleranceBeh BEHAVIOUR
    DEFINED AS
        "This attribute identifies the duration of user data that must be buffered by the InterworkingVcTtpBidirectional managed object to offset Cell Delay variation. The timing is in increment of 10 micro seconds. The recommended default value for DS1 CES is 750 micro seconds and 1000 micro seconds for DS3 CES. The use of this attribute is for further study.";

### 5.4.32   Identificador de perfil de servicio CES (cesServiceProfileId)

cesServiceProfileId ATTRIBUTE
>WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;
>MATCHES FOR EQUALITY;
>BEHAVIOUR cesServiceProfileIdBeh;

REGISTERED AS {attribute 32};

cesServiceProfileIdBeh BEHAVIOUR
>DEFINED AS
>>"This attribute is used for naming instances of cesServiceProfile managed object class.";

### 5.4.33   Señalización asociada a canal (channelAssociatedSignalling)

channelAssociatedSignalling ATTRIBUTE
>WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ChannelAssociatedSignalling;
>MATCHES FOR EQUALITY;
>BEHAVIOUR channelAssociatedSignallingBeh;

REGISTERED AS {attribute 33};

channelAssociatedSignallingBeh BEHAVIOUR
>DEFINED AS
>>"This attribute identifies which AAL1 format should be used. This attribute applies only to structured format. The default value Basic does not carry channel associated signalling (CAS) bits and uses a single 125 microsec frame. e1Cas, ds1sfCas, and ds1EsfCas carry CAS bits in a multiframe structure for E1, DS1 SF, and DS1 ESF respectively.";

### 5.4.34   CIP requerido (cipRequired)

cipRequired ATTRIBUTE
>WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CIPRequired ;
>BEHAVIOUR cipRequiredBeh;

REGISTERED AS {attribute 34};

cipRequiredBeh BEHAVIOUR
>DEFINED AS
>>"This entity indicates if the CIP (carrier identification parameter) has to be signalled further." ;

### 5.4.35   Código de identificación de circuito (cic)

cic ATTRIBUTE
>WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Cic;
>MATCHES FOR EQUALITY;
>BEHAVIOUR cicBeh;

REGISTERED AS {attribute 35};

cicBeh BEHAVIOUR
>DEFINED AS
>>"This attribute indicates the Circuit Identification Code (CIC) of the circuit which is terminated by the circuit end point. The value of the CIC is identical in the two circuit end points which terminate the circuit.";

### 5.4.36 Tipo de recuperación de reloj (clockRecoveryType)

clockRecoveryType ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ClockRecoveryType;
    MATCHES FOR EQUALITY;
    BEHAVIOUR clockRecoveryTypeBeh;
REGISTERED AS {attribute 36};

clockRecoveryTypeBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates whether the clock recovery type is Synchronous, SRTS (Synchronous Residual Time Stamp), or Adaptive Clock Recovery.";

### 5.4.37 Prohibición de grupo cerrado de usuario (cugBarring)

cugBarring ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CugBarring ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR cugBarringBeh;
REGISTERED AS {attribute 37};

cugBarringBeh BEHAVIOUR
    DEFINED AS
        "This attribute maintains the Intra-CUG restriction of the General subscription option in ITU-T Rec. Q.2955.1.";

### 5.4.38 Identificación de red de datos de grupo cerrado de usuarios (cugDataNetworkIdentification)

cugDataNetworkIdentification ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CugDataNetworkIdentification ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR cugDataNetworkIdentificationBeh;
REGISTERED AS {attribute 38};

cugDataNetworkIdentificationBeh BEHAVIOUR
    DEFINED AS
        "This information is signalled during setup of a CUG call and serves (in conjunction with the closed user groupInterlockCode) to uniquely identify the CUG in the international network. It can be thought of as the area code of the CUG.";

### 5.4.39 Índice de grupo cerrado de usuarios (cugIndex)

cugIndex ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CugIndex ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR cugIndexBeh;
REGISTERED AS {attribute 39};

cugIndexBeh BEHAVIOUR
    DEFINED AS
        "cugIndex of General subscription option in ITU-T Rec. Q.2955.1 must be explicitly assigned upon object creation. No two instances of the closed user group object class contained within a single object may have identical values for attribute cugIndex.";

### 5.4.40    Código de enclavamiento de grupo cerrado de usuarios (cugInterlockCode)

cugInterlockCode    ATTRIBUTE
  WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CugInterlockCode ;
  MATCHES FOR EQUALITY;
  BEHAVIOUR cugInterlockCodeBeh;
REGISTERED AS {attribute 40};

cugInterlockCodeBeh BEHAVIOUR
  DEFINED AS
    "The attribute cugInterlockCode must be assigned explicitly upon object creation. No multiple instances of the closed user group object class contained within a single object are allowed to have identical combinations of attribute cugInterlockCode and cugDataNetworkIdentification.";

### 5.4.41    Código (code)

code ATTRIBUTE
  WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Code ;
  BEHAVIOUR codeBeh;
REGISTERED AS {attribute 41};

codeBeh BEHAVIOUR
  DEFINED AS
    "This entity describes the prefix digits." ;

### 5.4.42    SN no esperado de COM/EOM (comsEomsUnexpectedSN)

comsEomsUnexpectedSN ATTRIBUTE
  DERIVED FROM "ITU-T Rec. X.721":counter;
  BEHAVIOUR comsEomsUnexpectedSNBeh;
REGISTERED AS {attribute 42};

comsEomsUnexpectedSNBeh BEHAVIOUR
  DEFINED AS
    "This attribute represents the number of COM and EOM segments received with an unexpected Sequence Number (SN). For a particular message (i.e., MID) transported over a VPC or VCC, this attribute is incremented by one each time a COM or EOM is received with a SAR Sequence Number (SN) that is not correct relative to the SN in the previous (non-EOM) segment.";

### 5.4.43    Opciones de la restricción de la identificación de la línea conectada (connLineIdRestrictionOptions)

connLineIdRestrictionOptions ATTRIBUTE
  WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ConnLineIdRestrictionOptions;
  MATCHES FOR EQUALITY;
  BEHAVIOUR connLineIdRestrictionOptionsBeh;
REGISTERED AS {attribute 43};

connLineIdRestrictionOptionsBeh BEHAVIOUR
  DEFINED AS
    "This attribute of the COLRBB supplementary Service allows the subscriber to select the mode in which the connected line identification restriction is applied. Valid options for the mode are: Permanent to have the service active for all calls, or Temporary to have the service requested by the user per call.";

### 5.4.44 Identificador de cribado de número conectado (connectedNumberScreeningId)

connectedNumberScreeningId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;
    MATCHES FOR EQUALITY;
    BEHAVIOUR connectedNumberScreeningIdBhv;
REGISTERED AS {attribute 44};

connectedNumberScreeningIdBhv BEHAVIOUR
    DEFINED AS
        "This is the naming attribute of the connected number screening managed object.";

### 5.4.45 Oferta de identificación de conexión (connectionIdOffering)

connectionIdOffering    ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ConnectionIdOffering;
    MATCHES FOR EQUALITY;
    BEHAVIOUR connectionIdOfferingBeh;
REGISTERED AS {attribute 45};

connectionIdOfferingBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates which procedure is used for the selection of VPCI and VCI.";

### 5.4.46 Infracciones de CRC (crcViolations)

crcViolations ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR crcViolationsBeh;
REGISTERED AS {attribute 46};

crcViolationsBeh BEHAVIOUR
    DEFINED AS
        "This attribute represents the number of CRC violations that were detected for the incoming AAL
        PDUs.";

### 5.4.47 Requerido CSP (cspRequired)

cspRequired ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.CSPRequired ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR cspRequiredBeh;
REGISTERED AS {attribute 47};

cspRequiredBeh BEHAVIOUR
    DEFINED AS
        "This entity indicates if the CSP (carrier selection parameter) has to be signalled further." ;

### 5.4.48 Puntero de perfil de cliente (customerProfilePtr)

customerProfilePtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PointerOrNull;
    MATCHES FOR EQUALITY;
    BEHAVIOUR customerProfilePtrBeh;
REGISTERED AS {attribute 48};

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

### 5.4.49 Lista de punteros de recurso personalizado (customizedResourcePtrList)

customizedResourcePtrList ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SetOfInstances;
    MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
    BEHAVIOUR customizedResourcePtrListBeh;
REGISTERED AS {attribute 49};

customizedResourcePtrListBeh BEHAVIOUR
    DEFINED AS
        "This is a set-valued attribute whose value(s) points to instances or instances of subclasses of the customizedResourceBb object class.";


### 5.4.50 Número de directorio por defecto (defaultDirectoryNumber)

defaultDirectoryNumber ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DefaultDirectoryNumber;
    MATCHES FOR EQUALITY;
    BEHAVIOUR defaultDirectoryNumberBhv;
REGISTERED AS {attribute 50};

defaultDirectoryNumberBhv BEHAVIOUR
    DEFINED AS
        "This attribute indicates the default directory number.";


### 5.4.51 Código de destino (destinationCode)

destinationCode ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DestinationCode ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR destinationCodeBeh;
REGISTERED AS {attribute 51};

destinationCodeBeh BEHAVIOUR
    DEFINED AS
    "This entity describes the digit string including the local area code." ;


### 5.4.52 Tipo de destino (destinationType)

destinationType ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DestinationType ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR destinationTypeBeh;
REGISTERED AS {attribute 52};

destinationTypeBeh BEHAVIOUR
    DEFINED AS
        "This entity describes unambiguously the type of destination like international, national or local." ;


### 5.4.53 Inserción de combinación de cifras (digitCombInsert)

digitCombInsert ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DigitCombInsert ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR digitCombInsertBeh;
REGISTERED AS {attribute 53};

digitCombInsertBeh BEHAVIOUR
    DEFINED AS
        "This entity describes which sequence of digits is to be inserted and where." ;

### 5.4.54 Sustitución de combinación de cifras (digitCombReplace)

digitCombReplace ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DigitCombReplace ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR digitCombReplaceBeh;
REGISTERED AS {attribute 54};

digitCombReplaceBeh BEHAVIOUR
    DEFINED AS
        "This entity describes which sequence of digits is to be replaced and through which." ;

### 5.4.55 Identificador de manipulación de cifras (digitManipId)

digitManipId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR digitManipIdBeh;
REGISTERED AS {attribute 55};

digitManipIdBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the object identifier attribute of the object class 'digitManip'." ;

### 5.4.56 Puntero de manipulación de cifras (digitManipPtr)

digitManipPtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DigitManipPtr ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR digitManipPtrBeh;
REGISTERED AS {attribute 56};

digitManipPtrBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the pointer to 'digitManip' " ;

### 5.4.57 Supresión de cifras (digitSupress)

digitSuppress ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.DigitSuppress ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR digitSuppressBeh;
REGISTERED AS {attribute 57};

digitSuppressBeh BEHAVIOUR
    DEFINED AS
        "This entity describes which sequence of digits is to be suppressed." ;

### 5.4.58 Códigos de abonado excluidos (excludedSubscriberCodes)

excludedSubscriberCodes ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ExcludedSubscriberCodes ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR excludedSubscriberCodesBeh;
REGISTERED AS {attribute 58};

**excludedSubscriberCodesBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute defines the directory numbers which are excluded from the upper limit of the possible directory numbers for this local destination. The excluded numbers are defined in terms of a set of sequences of directory numbers where each sequence is specified by its common most significant digits." ;**

## 5.4.59   Método de corrección de errores hacia adelante (forwardErrorCorrectionMethod)

**forwardErrorCorrectionMethod ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.FecMethod;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR forwardErrorCorrectionMethodBeh;**
**REGISTERED AS {attribute 59};**

**forwardErrorCorrectionMethodBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute indicates the FEC method: no FEC, FEC for Loss Sensitive Signal Transport, or FEC for Delay Sensitive Signal Transport.";**

## 5.4.60   Errores de encabezamiento (headerErrors)

**headerErrors ATTRIBUTE**
    **DERIVED FROM "ITU-T Rec. X.721":counter;**
    **BEHAVIOUR headerErrorsBeh;**
**REGISTERED AS {attribute 60};**

**headerErrorsBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute represents a count of the number of AAL1 header errors detected, including those corrected. Header errors include correctable and uncorrectable CRC plus bad parity.";**

## 5.4.61   Códigos de abonado iniciales (initialSubscriberCodes)

**initialSubscriberCodes ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.InitialSubscriberCodes ;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR initialSubscriberCodesBeh;**
**REGISTERED AS {attribute 61};**

**initialSubscriberCodesBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute defines the upper limit of the possible directory numbers which can belong to this local destination. The upper limit is defined in terms of a set of sequences of directory numbers where each sequence is specified by its common most significant digits." ;**

## 5.4.62   Acceso entre grupos cerrados de usuarios (interCugAccess)

**interCugAccess      ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.InterCugAccess;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR interCugAccessBeh;**
**REGISTERED AS {attribute 62};**

**interCugAccessBeh BEHAVIOUR**
    **DEFINED AS**
        **"Inter-CUG access of per service subscription option in ITU-T Rec. Q.2955.1.";**

## 5.4.63 Discordancia entre longitud y tamaño BA (lengthBASizeMismatch)

**lengthBASizeMismatch ATTRIBUTE**
    **DERIVED FROM "ITU-T Rec. X.721":counter;**
    **BEHAVIOUR lengthBASizeMismatchBeh;**
**REGISTERED AS {attribute 63};**

**lengthBASizeMismatchBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute represents the number of CS_PDUs in which the Length field value was not consistent with the BASize field value. The definition of consistent depends on the mode in which CS_PDU fragments are being processed. In the message-mode, the BASize field must equal the Length field. In the streaming mode, the BASize field must be less than the Length field.";**

## 5.4.64 Discordancia entre longitudes (lengthMismatch)

**lengthMismatch ATTRIBUTE**
    **DERIVED FROM "ITU-T Rec. X.721":counter;**
    **BEHAVIOUR lengthMismatchBeh;**
**REGISTERED AS {attribute 64};**

**lengthMismatchBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute represents the number of CS_PDUs received with a Length field value that does not represent the actual length of the CS_PDU payload.";**

## 5.4.65 Puntero de grupo de enlaces (linkGroupPtr)

**linkGroupPtr ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectInstance;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR linkGroupPtrBeh;**
**REGISTERED AS {attribute 65};**

**linkGroupPtrBeh BEHAVIOUR**
    **DEFINED AS**
        **"This entity describes the result pointer to an instance of 'xtpsgComb', 'crCircuitEndPointSubgroup' or 'virtualPathGroup'.";**

## 5.4.66 Tipo de enlace (linkType)

**linkType ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.LinkType;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR linkTypeBeh;**
**REGISTERED AS {attribute 66};**

**linkTypeBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute is used to indicate whether the NNI is an international interface or not.";**

## 5.4.67 Lista de punteros de lista de grupos de enlaces (listOfLinkGroupsPtrList)

**listOfLinkGroupsPtrList ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ListOfLinkGroupsPtrList;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR listOfLinkGroupsPtrListBeh;**
**REGISTERED AS {attribute 67};**

**listOfLinkGroupsPtrListBeh BEHAVIOUR**
> **DEFINED AS**
>> "This entity describes the sequence of instances of 'virtualPathGroup' or 'crCircuitEndPointSubgroup'." ;

### 5.4.68   Lista de punteros de lista de rutas (listOfRoutesPtrList)

**listOfRoutesPtrList ATTRIBUTE**
> **WITH ATTRIBUTE SYNTAX** ASN1DefinedTypesModule.ListOfRoutesPtrList ;
> **MATCHES FOR EQUALITY;**
> **BEHAVIOUR** listOfRoutesPtrListBeh;

**REGISTERED AS {attribute 68};**

**listOfRoutesPtrListBeh BEHAVIOUR**
> **DEFINED AS**
>> "This entity describes the sequence of the selected routes ('routeData')." ;

### 5.4.69   Identificador de lista de puntos de terminación de ruta (listOfRouteTpsId)

**listOfRouteTpsId ATTRIBUTE**
> **WITH ATTRIBUTE SYNTAX** ASN1DefinedTypesModule.NameType ;
> **MATCHES FOR EQUALITY;**
> **BEHAVIOUR** listOfRouteTpsIdBeh;

**REGISTERED AS {attribute 69};**

**listOfRouteTpsIdBeh BEHAVIOUR**
> **DEFINED AS**
>> "This entity describes the object identifier attribute of the object class 'listOfRouteTps'." ;

### 5.4.70   Código de área local (localAreaCode)

**localAreaCode ATTRIBUTE**
> **WITH ATTRIBUTE SYNTAX** ASN1DefinedTypesModule.LocalAreaCode ;
> **MATCHES FOR EQUALITY;**
> **BEHAVIOUR** localAreaCodeBeh;

**REGISTERED AS {attribute 70};**

**localAreaCodeBeh BEHAVIOUR**
> **DEFINED AS**
>> "This entity describes the local area code of the subscribers which belong to this local destination. The local area code is used without any prefix." ;

### 5.4.71   Identificador de destino local (localDestinationId)

**localDestinationId ATTRIBUTE**
> **WITH ATTRIBUTE SYNTAX** ASN1DefinedTypesModule.NameType ;
> **MATCHES FOR EQUALITY;**
> **BEHAVIOUR** localDestinationIdBeh;

**REGISTERED AS {attribute 71};**

**localDestinationIdBeh BEHAVIOUR**
> **DEFINED AS**
>> "This entity describes the object identifier attribute of the object class 'localDestination'." ;

### 5.4.72 Puntero de destino local (localDestinationPtr)

localDestinationPtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectInstance;
    MATCHES FOR EQUALITY;
    BEHAVIOUR localDestinationPtrBeh;
REGISTERED AS {attribute 72};

localDestinationPtrBeh BEHAVIOUR
    DEFINED AS
        "This attribute describes the pointer to localDestination. The directoryNumberE164 shall be member of the local area defined by the localAreaCode and the initial digit string part of the SN part of the directoryNumberE164 shall match with one of the initialSubscriberCodes of the referenced object. The directoryNumberE164 shall not be excluded by one of the excludedSubscriberCodes from the referenced object.";

### 5.4.73 Señalización de mantenimiento en ejecución (maintenanceSignallingRunning)

maintenanceSignallingRunning ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaintenanceSignallingRunning;
    MATCHES FOR EQUALITY;
    BEHAVIOUR maintenanceSignallingRunningBeh;
REGISTERED AS {attribute 73};

maintenanceSignallingRunningBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates that a maintenance signalling procedure (e.g. reset, restart, blocking, unblocking) is running.";

### 5.4.74 CC máximo (maxCc)

maxCc ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxCc;
    BEHAVIOUR maxCcBeh;
REGISTERED AS {attribute 74};

maxCcBeh BEHAVIOUR
    DEFINED AS
        "This attribute defines the maximum value [PDUs] of the state variable VT(CC), corresponding to the maximum number of transmissions of BGN, END, ER or RS PDUs.";

### 5.4.75 Tamaño máximo de CPCS_PDU (maxCpcsPduSize)

maxCpcsPduSize ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxCpcsPduSize;
    MATCHES FOR EQUALITY;
    BEHAVIOUR maxCpcsPduSizeBeh;
REGISTERED AS {attribute 75};

maxCpcsPduSizeBeh BEHAVIOUR
    DEFINED AS
        "This multi-valued attribute represents the maximum CPCS_PDU size that will be transmitted over the connection in both the incoming (forward) and outgoing (backward) direction of transmission.";

### 5.4.76 Cifras máximas (maxDigits)

maxDigits ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxDigits ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR maxDigitsBeh;
REGISTERED AS {attribute 76};

maxDigitsBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the maximum number of digits required by the destination exchange. Further digits will be ignored." ;

### 5.4.77 Longitud máxima del campo de información (maxInformationFieldLength)

maxInformationFieldLength ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxInformationFieldLength;
    BEHAVIOUR maxInformationFieldLengthBeh;
REGISTERED AS {attribute 77};

maxInformationFieldLengthBeh BEHAVIOUR
    DEFINED AS
        "This attribute defines the maximum length of the information field in SD PDUs, UD PDUs and MD PDUs 'k'. The unit of the INTEGER value is octets.";

### 5.4.78 Longitud máxima del campo usuario a usuario de SSCOP (maxLengthSscopUuField)

maxLengthSscopUuField ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxLengthSscopUuField;
    BEHAVIOUR maxLengthSscopUuFieldBeh;
REGISTERED AS {attribute 78};

maxLengthSscopUuFieldBeh BEHAVIOUR
    DEFINED AS
        "This attribute defines the maximum length of a variable length SSCOP UU field 'j'. The SSCOP UU is an optional field of BGN PDUs, BGAK PDUs, BGREJ PDUs, END PDUs and RS PDUs. The unit of the INTEGER value is octets";

### 5.4.79 PD máximo (maxPd)

maxPd ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxPd;
    BEHAVIOUR maxPdBeh;
REGISTERED AS {attribute 79};

maxPdBeh BEHAVIOUR
    DEFINED AS
        "This attribute defines the maximum acceptable value [PDUs] of the state variable VT(PD) before sending a POLL PDU and resetting VT(PD) to zero. The VT(PD) is incremented each time an SD PDU is transmitted.";

### 5.4.80 Crédito máximo de SSCOP a entidad par (maxSscopCreditToPeer)

maxSscopCreditToPeer ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxSscopCreditToPeer;
    BEHAVIOUR maxSscopCreditToPeerBeh;
REGISTERED AS {attribute 80};

**maxSscopCreditToPeerBeh BEHAVIOUR**

    **DEFINED AS**

        **"This attribute defines the absolute value [PDUs] of the size of the receive window given to the peer. This value is added to VR(R) to generate VR(MR). VR(MR) is mapped to N(MR) by transmission of STAT, USTAT, RS RSAK, ER, ERAK, BGN or BGAK PDUs.";**

## 5.4.81   STAT máximo (maxStat)

**maxStat ATTRIBUTE**

    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MaxStat;**

    **BEHAVIOUR maxStatBeh;**

**REGISTERED AS {attribute 81};**

**maxStatBeh BEHAVIOUR**

    **DEFINED AS**

        **"This attribute defines the maximum number of list elements placed in a STAT PDU.";**

## 5.4.82   Gama de MID (midRange)

**midRange ATTRIBUTE**

    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MidRange;**

    **MATCHES FOR EQUALITY, ORDERING;**

    **BEHAVIOUR midRangeBeh;**

**REGISTERED AS {attribute 82};**

**midRangeBeh BEHAVIOUR**

    **DEFINED AS**

        **"This attribute represents the range of MID values supported at the AAL for the supporting VCC.";**

## 5.4.83   Cifras mínimas (minDigits)

**minDigits ATTRIBUTE**

    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.MinDigits ;**

    **MATCHES FOR EQUALITY;**

    **BEHAVIOUR minDigitsBeh;**

**REGISTERED AS {attribute 83};**

**minDigitsBeh BEHAVIOUR**

    **DEFINED AS**

        **"This entity describes the minimum number of digits required before the outgoing termination point can be seized. It is only needed in case of overlapped dialling." ;**

## 5.4.84   Naturaleza de la dirección (natureOfAddress)

**natureOfAddress ATTRIBUTE**

    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NatureOfAddress ;**

    **MATCHES FOR EQUALITY;**

**BEHAVIOUR natureOfAddressBeh;**
**REGISTERED AS {attribute 84};**

**natureOfAddressBeh BEHAVIOUR**
   **DEFINED AS**
      **"This entity describes the destination type of the prefix." ;**

### 5.4.85   Límite de la red (networkBorder)

**networkBorder ATTRIBUTE**
   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NetworkBorder;**
   **MATCHES FOR EQUALITY;**
   **BEHAVIOUR networkBorderBeh;**
**REGISTERED AS {attribute 85};**

**networkBorderBeh BEHAVIOUR**
   **DEFINED AS**
      **"This attribute is used to indicate whether the NNI is an operator network border or not.";**

### 5.4.86   Tipo de red (networkType)

**networkType ATTRIBUTE**
   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NetworkType;**
   **MATCHES FOR EQUALITY;**
   **BEHAVIOUR networkTypeBeh;**
**REGISTERED AS {attribute 86};**

**networkTypeBeh BEHAVIOUR**
   **DEFINED AS**
      **"This attribute is used to indicate whether an access belongs to a national transit network. It is used together with the linkType and the signallingType to generate the setting of the location field according to Q.850.";**

### 5.4.87   Identificador de acceso NNI (nniAccessId)

**nniAccessId ATTRIBUTE**
   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;**
   **MATCHES FOR EQUALITY;**
   **BEHAVIOUR nniAccessIdBeh;**
**REGISTERED AS {attribute 87};**

**nniAccessIdBeh BEHAVIOUR**
   **DEFINED AS**
      **"This attribute is used to name instances of the nniAccess managed object class.";**

### 5.4.88   Restricciones no permitidas de la presentación de la identificación de la línea conectada (noColpRestrictionsAllowed)

**noColpRestrictionsAllowed ATTRIBUTE**
   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Boolean;**
   **MATCHES FOR EQUALITY;**
   **BEHAVIOUR noColpRestrictionsAllowedBeh ;**
**REGISTERED AS {attribute 88};**

**noColpRestrictionsAllowedBeh BEHAVIOUR**
　　　DEFINED AS

　　　　　　"This attribute of COLP is where the calling party continues to have the capability to override the COLR restriction and have the connected party number presented as described in the COLP supplementary service. A TRUE value of this attribute permits the called party COLP supplementary service to override the calling party COLR supplementary service.";

## 5.4.89　Número de abortos (numberOfAborts)

**numberOfAborts ATTRIBUTE**
　　　DERIVED FROM "ITU-T Rec. X.721":counter;
　　　BEHAVIOUR numberOfAbortsBeh;
REGISTERED AS {attribute 89};

**numberOfAbortsBeh BEHAVIOUR**
　　　DEFINED AS

　　　　　　"This attribute provides a count of the number aborts (i.e., EOM with SAR_PDU Length Indication = 63) that are received for the underlying VPC or VCC.";

## 5.4.90　Origen (origin)

**origin ATTRIBUTE**
　　　WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Origin ;
　　　MATCHES FOR EQUALITY;
　　　BEHAVIOUR originBeh;
REGISTERED AS {attribute 90};

**originBeh BEHAVIOUR**
　　　DEFINED AS

　　　　　　"This entity describes the origin of the calling subscriber considered for the routing process." ;

## 5.4.91　Origen para encaminamiento (originForRouting)

**originForRouting ATTRIBUTE**
　　　WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Integer;
　　　MATCHES FOR EQUALITY;
　　　BEHAVIOUR originForRoutingBeh;
REGISTERED AS {attribute 91};

**originForRoutingBeh BEHAVIOUR**
　　　DEFINED AS

　　　　　　"This attribute determines the origin assigned to the NNI access for call routing purpose.";

## 5.4.92　Marca de origen (originMark)

**originMark ATTRIBUTE**
　　　WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Integer;
　　　MATCHES FOR EQUALITY;
　　　BEHAVIOUR originMarkBeh;
REGISTERED AS {attribute 92};

**originMarkBeh BEHAVIOUR**
　　　DEFINED AS

　　　　　　"This attribute determines the origination of the calling subscriber.";

### 5.4.93 Código internacional propio (ownInternationalCode)

ownInternationalCode ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.OwnInternationalCode ;
 MATCHES FOR EQUALITY;
 BEHAVIOUR ownInternationalCodeBeh;
REGISTERED AS {attribute 93};

ownInternationalCodeBeh BEHAVIOUR
 DEFINED AS
  "This entity describes the country code of the calling party. The own international code is used without any prefix." ;

### 5.4.94 Células parcialmente rellenas (partiallyFilledCells)

partiallyFilledCells ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Integer;
 MATCHES FOR EQUALITY, ORDERING;
 BEHAVIOUR partiallyFilledCellsBeh;
REGISTERED AS {attribute 94};

partiallyFilledCellsBeh BEHAVIOUR
 DEFINED AS
  "This attribute identifies the number of leading octets in use.";

### 5.4.95 Indagación después de la retransmisión (pollAfterRetransmission)

pollAfterRetransmission ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PollAfterRetransmission;
 BEHAVIOUR pollAfterRetransmissionBeh;
REGISTERED AS {attribute 95};

pollAfterRetransmissionBeh BEHAVIOUR
 DEFINED AS
  "This attribute specifies if a POLL is transmitted each time the retransmission queue is emptied";

### 5.4.96 Identificador de la evaluación posterior al análisis (postAnalysisEvaluationId)

postAnalysisEvaluationId ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
 MATCHES FOR EQUALITY;
 BEHAVIOUR postAnalysisEvaluationIdBeh;
REGISTERED AS {attribute 96};

postAnalysisEvaluationIdBeh BEHAVIOUR
 DEFINED AS
  "This entity describes the object identifier attribute of the object class 'postAnalysisEvaluation'." ;

### 5.4.97 Empresa de telecomunicaciones preferida (preferredCarrier)

preferredCarrier ATTRIBUTE
 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PreferredCarrier;
 MATCHES FOR EQUALITY;
 BEHAVIOUR preferredCarrierBeh;
REGISTERED AS {attribute 97};

preferredCarrierBeh BEHAVIOUR
 DEFINED AS
  "This attribute identifies the default carrier to use when one is not explicitly identified in the call setup message received and processed by the managed system.";

### 5.4.98   Índice de grupo cerrado de usuarios preferido (preferredCugIndex)

preferredCugIndex ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PreferredCugIndex;
    MATCHES FOR EQUALITY;
    BEHAVIOUR preferredCugIndexBeh;
REGISTERED AS {attribute 98};

preferredCugIndexBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates the index of the preferred CUG.";

### 5.4.99   Identificador del análisis de las cifras de prefijo (prefixDigitAnalysisId)

prefixDigitAnalysisId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR prefixDigitAnalysisIdBeh;
REGISTERED AS {attribute 99};

prefixDigitAnalysisIdBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the object identifier attribute of the object class 'prefixDigitAnalysis'." ;

### 5.4.100 Retardo de propagación (propagationDelay)

propagationDelay ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PropagationDelay;
    MATCHES FOR EQUALITY;
    BEHAVIOUR propagationDelayBeh;
REGISTERED AS {attribute 100};

propagationDelayBeh BEHAVIOUR
    DEFINED AS
        "Indicates the expected propagation delay (in micro seconds).";

### 5.4.101 Expiraciones del temporizador de reensamblado (reassemblyTimerExpirations)

reassemblyTimerExpirations ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR reassemblyTimerExpirationsBeh;
REGISTERED AS {attribute 101};

reassemblyTimerExpirationsBeh BEHAVIOUR
    DEFINED AS
        "This attribute provides a count of reassembly timer expirations. A negative value indicates that this
        attribute is not supported. ";

### 5.4.102 Bloqueo distante (remoteBlocking)

remoteBlocking ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.RemoteBlocking;
    MATCHES FOR EQUALITY;
    BEHAVIOUR remoteBlockingBeh;
REGISTERED AS {attribute 102};

**remoteBlockingBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute indicates the remote blocking state of the virtual path. A blocked virtual path cannot be selected for new non-test traffic; however it can be used for test calls. The blocking of a virtual path has no influence to existing calls (non-test calls and test calls).";**

## 5.4.103 Motivo del bloqueo distante (remoteBlockingReason)

**remoteBlockingReason ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.RemoteBlockingReason ;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR remoteBlockingReasonBeh;**
**REGISTERED AS {attribute 103};**

**remoteBlockingReasonBeh BEHAVIOUR**
    **DEFINED AS**
        **"Indicates the reason when the circuit was remotely blocked.";**

## 5.4.104 Egreso de anchura de banda requerida (reqBandwidthEgress)

**reqBandwidthEgress ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ReqBandwidthEgress ;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR reqBandwidthEgressBeh;**
**REGISTERED AS {attribute 104};**

**reqBandwidthEgressBeh BEHAVIOUR**
    **DEFINED AS**
        **"This entity describes the range of supported bandwidth." ;**

## 5.4.105 Ingreso de anchura de banda requerida (reqBandwidthIngress)

**reqBandwidthIngress ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ReqBandwidthIngress ;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR reqBandwidthIngressBeh;**
**REGISTERED AS {attribute 105};**

**reqBandwidthIngressBeh BEHAVIOUR**
    **DEFINED AS**
        **"This entity describes the range of supported bandwidth." ;**

## 5.4.106 Capacidad portadora requerida (reqBearerCapab)

**reqBearerCapab ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ReqBearerCapab ;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR reqBearerCapabBeh;**
**REGISTERED AS {attribute 106};**

**reqBearerCapabBeh BEHAVIOUR**
    **DEFINED AS**
        **"This entity describes the supported bearer capabilities." ;**

## 5.4.107 Capacidad de transferencia de banda ancha requerida (reqNbTransferCapability)

reqNbTransferCapability ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ReqNbTransferCapability ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR reqNbTransferCapabilityBeh;
REGISTERED AS {attribute 107};

reqNbTransferCapabilityBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the N-ISDN bearer capability of the underlying routes." ;

## 5.4.108 Límite de tiempo del tono de llamada (ringTimeLimit)

ringTimeLimit ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.RingTimeLimit ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR ringTimeLimitBeh;
REGISTERED AS {attribute 108};

ringTimeLimitBeh BEHAVIOUR
    DEFINED AS
    "This attribute limits the ring time in seconds.";

## 5.4.109 Identificador de datos de ruta (routeDataId)

routeDataId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR routeDataIdBeh;
REGISTERED AS {attribute 109};

routeDataIdBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the object identifier attribute of the object class 'routeData'." ;

## 5.4.110 Identificador de perfil de protocolo UNI de SAAL (saalUniProtocolProfileId)

saalUniProtocolProfileId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;
    MATCHES FOR EQUALITY;
    BEHAVIOUR saalUniProtocolProfileIdBeh;
REGISTERED AS {attribute 110};

saalUniProtocolProfileIdBeh BEHAVIOUR
    DEFINED AS
        "This attribute is used for naming instances of the object class saalUniProtocolProfile.";

## 5.4.111 Infracciones de CRC de SAR (sarCrcViolations)

sarCrcViolations ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR sarCrcViolationsBeh;
REGISTERED AS {attribute 111};

sarCrcViolationsBeh BEHAVIOUR
    DEFINED AS
        "This attribute represents the number of CRC violations that were detected for the incoming SAR
        PDUs.";

## 5.4.112 Cribado de número (screenNumber)

screenNumber ATTRIBUTE

    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Boolean;

    MATCHES FOR EQUALITY;

    BEHAVIOUR screenNumberBhv;

REGISTERED AS {attribute 112};

screenNumberBhv BEHAVIOUR

    DEFINED AS

        "This is a boolean attribute. When the value of this attribute is TRUE, the switch will screen the directory number information for validity when provided on a call by the user equipment.";

## 5.4.113 Método de búsqueda (searchMethod)

searchMethod ATTRIBUTE

    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SearchMethod;

    MATCHES FOR EQUALITY;

    BEHAVIOUR searchMethodBeh;

REGISTERED AS {attribute 113};

searchMethodBeh BEHAVIOUR

    DEFINED AS

        "This attribute describes the method how to select a VPC with sufficient free bandwidth or an idle circuit within this object instance. The following algorithms are defined for that purpose:

        – forwardSequential: This algorithm selects the VPC with the lowest VPCI value, which has sufficient free bandwidth in the broadband case. This algorithm selects the idle circuit with the lowest CIC number in the narrowband case.

        – backwardSequential: This algorithm selects the VPC with the highest VPCI value, which has sufficient free bandwidth in the broadband case. This algorithm selects the idle circuit with the highest CIC number in the narrowband case.

        – forwardCyclic: In the broadband case this algorithm selects the VPC with sufficient free bandwidth with the lowest VPCI value that is larger than the VPCI value of the previously selected VPC. If no such VPC exists, it selects the VPC with sufficient bandwidth with the lowest VPCI value that is less than the VPCI value of the previously selected VPC.

        In the narrowband case this algorithm selects the idle circuit with the lowest CIC number that is larger than the CIC number of the previously selected circuit. If no such idle circuit exists, it selects the idle CIC with the lowest CIC number that is less than the CIC number of the previously selected circuit.

        – backwardCyclic: In the broadband case this algorithm selects the VPC with sufficient bandwidth with the highest VPCI value that is less than the VPCI value of the previously selected VPC. If no such VPC exists, it selects the VPC with sufficient bandwidth with the highest VPCI value that is larger than the VPCI value number of the previously selected circuit.

        In the narrowband case this algorithm selects the idle circuit with the highest CIC number that is less than the CIC number of the previously selected circuit. If no such idle circuit exists, it selects the idle CIC with the highest CIC number that is larger than the CIC number of the previously selected circuit.";

## 5.4.114 Envío de TNS (sendTns)

sendTns ATTRIBUTE
  WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SendTns ;
  MATCHES FOR EQUALITY;
  BEHAVIOUR sendTnsBeh;
REGISTERED AS {attribute 114};

sendTnsBeh BEHAVIOUR
  DEFINED AS
    "This entity describes whether for this instance of 'routeData' the TNS is to be signalled to the next node." ;

## 5.4.115 Infracciones de secuencia (sequenceViolations)

sequenceViolations ATTRIBUTE
  DERIVED FROM "ITU-T Rec. X.721":counter;
  BEHAVIOUR sequenceViolationsBeh;
REGISTERED AS {attribute 115};

sequenceViolationsBeh BEHAVIOUR
  DEFINED AS
    "This attribute represents a count incoming AAL Type 1 SAR-PDUs where the sequence count in the PDU header causes a transition from the SYNC state to the OUT OF SEQUENCE state as defined by ITU-T Rec. I.363.1. A negative value indicates that this attribute is not supported.";

## 5.4.116 Puntero de perfil de servicio (serviceProfilePointer)

serviceProfilePointer ATTRIBUTE
  WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PointerOrNull;
  MATCHES FOR EQUALITY;
  BEHAVIOUR serviceProfilePointerBeh;
REGISTERED AS {attribute 116};

serviceProfilePointerBeh BEHAVIOUR
  DEFINED AS
    "This attribute provides a pointer to a managed object instance that provides information used to control service interworking (e.g., a cesServiceProfile object).";

## 5.4.117 Puntero de canal de señalización (signallingChannelPtr)

signallingChannelPtr ATTRIBUTE
  WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectInstance;
  MATCHES FOR EQUALITY;
  BEHAVIOUR signallingChannelPtrBeh;
REGISTERED AS {attribute 117};

signallingChannelPtrBeh BEHAVIOUR
  DEFINED AS
    "This attribute is used as a pointer to an instance of the vcTTPBidirectional managed object class. The referenced vcTTPBidirectional instance terminates the signalling virtual channel.";

## 5.4.118 Protocolo de señalización (signallingProtocol)

signallingProtocol ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SignallingProtocol;
    MATCHES FOR EQUALITY;
    BEHAVIOUR signallingProtocolBeh;
REGISTERED AS {attribute 118};

signallingProtocolBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates which type of signalling protocol is used.";

## 5.4.119 Puntero de ruta de señalización (sigRoutePtr)

sigRoutePtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectInstance;
    MATCHES FOR EQUALITY;
    BEHAVIOUR sigRoutePtrBeh;
REGISTERED AS {attribute 119};

sigRoutePtrBeh BEHAVIOUR
    DEFINED AS
        "Identifies the CCS7 signalling resource (Q.2751:signRouteSetNePart).";

## 5.4.120 Norma de señalización (signallingStandard)

signallingStandard ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SignallingStandard;
    MATCHES FOR EQUALITY;
    BEHAVIOUR signallingStandardBeh;
REGISTERED AS {attribute 120};

signallingStandardBeh BEHAVIOUR
    DEFINED AS
        "This attribute is used to indicate the type of signalling used by instances of this class.";

## 5.4.121 Tipo de señalización (signallingType)

signallingType ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SignallingType;
    MATCHES FOR EQUALITY;
    BEHAVIOUR signallingTypeBeh;
REGISTERED AS {attribute 121};

signallingTypeBeh BEHAVIOUR
    DEFINED AS
        "This attribute is used to indicate whether associated or nonassociated signalling is used at the instance of this class.";

## 5.4.122 Interrupciones SRI (sriTimeOuts)

sriTimeOuts ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR sriTimeOutsBeh;
REGISTERED AS {attribute 122};

**sriTimeOutsBeh BEHAVIOUR**
    **DEFINED AS**
        "This attribute represents a count of the number of SRI time-outs that occurred on an ATM connection.";

## 5.4.123 CC de temporizador SSCOP (sscopTimerCc)

**sscopTimerCc ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SscopTimerCc;**
    **BEHAVIOUR sscopTimerCcBeh;**
**REGISTERED AS {attribute 123};**

**sscopTimerCcBeh BEHAVIOUR**
    **DEFINED AS**
        "This attribute defines the time interval between transmissions of BGN, END, RS and ER PDUs when an acknowledge to these PDUs has not been received. The unit for the INTEGER value is milliseconds.";

## 5.4.124 Temporizador SSCOP en reposo (sscopTimerIdle)

**sscopTimerIdle ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SscopTimerIdle;**
    **BEHAVIOUR sscopTimerIdleBeh;**
**REGISTERED AS {attribute 124};**

**sscopTimerIdleBeh BEHAVIOUR**
    **DEFINED AS**
        "This attribute defines the SSCOP timer IDLE. The SSCOP connection is partitioned into phases. The SSCOP timer IDLE supervises the idle phase. In this phase the timer NO_RESPONSE is not running and no POLL PDUs are transmitted. The unit for the INTEGER value is milliseconds.";

## 5.4.125 Temporizador SSCOP de mantener activa (sscopTimerKeepAlive)

**sscopTimerKeepAlive ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SscopTimerKeepAlive;**
    **BEHAVIOUR sscopTimerKeepAliveBeh;**
**REGISTERED AS {attribute 125};**

**sscopTimerKeepAliveBeh BEHAVIOUR**
    **DEFINED AS**
        "This attribute defines the SSCOP timer KEEP_ALIVE. The SSCOP connection is partitioned into phases. The SSCOP timer KEEP_ALIVE supervises the transient phase. In this phase there are no outstanding acknowledgements or new data pending transmission. The unit for the INTEGER value is milliseconds.";

## 5.4.126 Temporizador SSCOP de sin respuesta (sscopTimerNoResponse)
**sscopTimerNoResponse ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SscopTimerNoResponse;**
    **BEHAVIOUR sscopTimerNoResponseBeh;**
**REGISTERED AS {attribute 126};**

**sscopTimerNoResponseBeh BEHAVIOUR**
    **DEFINED AS**
        "This attribute defines the SSCOP timer NO_RESPONSE. This timer is used to detect a faulty connection. The timer runs with either the timer POLL or KEEP_ALIVE simultaneously. The unit for the INTEGER value is milliseconds.";

## 5.4.127 Temporizador SSCOP de indagación (sscopTimerPoll)

sscopTimerPoll ATTRIBUTE

 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SscopTimerPoll;

 BEHAVIOUR sscopTimerPollBeh;

REGISTERED AS {attribute 127};

sscopTimerPollBeh BEHAVIOUR

 DEFINED AS

  "This attribute defines the SSCOP timer POLL. The SSCOP connection is partitioned into phases. The SSCOP timer POLL supervises the active phase. In this new data is pending, transmission or acknowledgements are outstanding. The unit for the INTEGER value is milliseconds.";

## 5.4.128 Tipo de SSCS (sscsType)

sscsType ATTRIBUTE

 WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SscsType;

 MATCHES FOR EQUALITY;

 BEHAVIOUR sscsTypeBeh;

REGISTERED AS {attribute 128};

sscsTypeBeh BEHAVIOUR

 DEFINED AS

  "This attribute identifies the SSCS type for the AAL. Valid values are NULL, Data SSCS based on SSCOP (assured operation), Data SSCS based on SSCOP (non-assured operation), or Frame Relay SSCS.";

## 5.4.129 Fallos de paridad de puntero STD (stdPointerparityFailures)

stdPointerParityFailures ATTRIBUTE

 DERIVED FROM "ITU-T Rec. X.721":counter;

 BEHAVIOUR stdPointerParityFailuresBeh;

REGISTERED AS {attribute 129};

stdPointerParityFailuresBeh BEHAVIOUR

 DEFINED AS

  "This attribute represents a count of the number of times the AAL reassembler detects a parity check failure at the point where a structured data pointer is expected. This count is only meaningful for structured data transfer modes as unstructured modes do not use pointers. A negative value indicates that this attribute is not supported.";

## 5.4.130 Reentramado de puntero STD (stdPointerReframes)

stdPointerReframes ATTRIBUTE

 DERIVED FROM "ITU-T Rec. X.721":counter;

 BEHAVIOUR stdPointerReframesBeh;

REGISTERED AS {attribute 130};

stdPointerReframesBeh BEHAVIOUR

 DEFINED AS

  "This attribute represents a count of the number of events in which the AAL1 reassembler found that a structured data pointer is not where it is expected, and the pointer must be reacquired. This count is only meaningful for structured data transfer modes as unstructured modes do not use pointers. A negative value indicates that this attribute is not supported; however it must be supported when pointers are used.";

## 5.4.131 Transferencia de datos estructurados (structuredDataTransfer)

**structuredDataTransfer ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Boolean;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR structuredDataTransferBeh;**
**REGISTERED AS {attribute 131};**

**structuredDataTransferBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute indicates whether Structured Data Transfer (SDT) has been configured at the AAL. A value of TRUE means SDT has been selected. This attribute value cannot be set to TRUE when the errorCorrectionType attribute equals TRUE.";**

## 5.4.132 Categoría de abonado (subscriberCategory)

**subscriberCategory ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SubscriberCategory;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR subscriberCategoryBeh;**
**REGISTERED AS {attribute 132};**

**subscriberCategoryBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute determines the category of the calling subscriber.";**

## 5.4.133 Subtipo (subType)

**subType ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SubType;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR subTypeBeh;**
**REGISTERED AS {attribute 133};**

**subTypeBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute is used to identify the AAL subtype. Valid values for this attribute are NULL, Voice-band based on 64 kbit/s, Circuit Emulation (synchronous), Circuit Emulation (asynchronous), High-quality Audio, and Video.";**

## 5.4.134 Suma de errores de campo CS incorrecto (sumOfIncorrectCSFieldErrors)

**sumOfIncorrectCSFieldErrors ATTRIBUTE**
    **DERIVED FROM "ITU-T Rec. X.721":counter;**
    **BEHAVIOUR sumOfIncorrectCSFieldErrorsBeh;**
**REGISTERED AS {attribute 134};**

**sumOfIncorrectCSFieldErrorsBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute provides a sum-of-errors count for incorrect Convergence Sublayer (CS) field errors. For AAL Type 3/4, this attribute provides a single count of CS_PDUs discarded due to one of the following error conditions: BETag mismatch, BASize field value not consistent with Length field value, or Length field value not consistent with CS_PDU length.";**

### 5.4.135 Suma de errores de campo SAR incorrecto (sumOfIncorrectSARFieldErrors)

sumOfIncorrectSARFieldErrors ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR sumOfIncorrectSARFieldErrorsBeh;
REGISTERED AS {attribute 135};

sumOfIncorrectSARFieldErrorsBeh BEHAVIOUR
    DEFINED AS
        "This attribute provides a sum-of-errors count for incorrect Segmentation And Reassembly (SAR) field errors. For AAL Type 3/4, this attribute provides a single count of SAR_PDUs discarded due to one of the following errors: CRC violation, unexpected Sequence Number (SN) field value, or unexpected MID field value.";

### 5.4.136 Suma de errores de campo SC no válido (sumOfInvalidCSFieldErrors)

sumOfInvalidCSFieldErrors ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR sumOfInvalidCSFieldErrorsBeh;
REGISTERED AS {attribute 136};

sumOfInvalidCSFieldErrorsBeh BEHAVIOUR
    DEFINED AS
        "This attribute provides a sum-of-errors count for invalid Convergence Sublayer (CS) field errors. For AAL Type 3/4, this attribute provides a single count of the number of CS_PDUs discarded due to one of the following error conditions: Common Part Indicator (CPI) field not equal to 0, Alignment field value not equal to 0, or BASize field value < 37 octets for multi-segment messages. For AAL Type 5, this attribute provides a single count of the number of CS_PDUs discarded due to one of the following error conditions: Invalid Common Part Indicator (CPI), oversized received SDU, or length violation.";

### 5.4.137 Suma de errores de campo SAR no válido (sumOfInvalidSARFieldErrors)

sumOfInvalidSARFieldErrors ATTRIBUTE
    DERIVED FROM "ITU-T Rec. X.721":counter;
    BEHAVIOUR sumOfInvalidSARFieldErrorsBeh;
REGISTERED AS {attribute 137};

sumOfInvalidSARFieldErrorsBeh BEHAVIOUR
    DEFINED AS
        "This attribute provides a sum-of-errors count for invalid Segmentation And Reassembly (SAR) field errors. For AAL Type 3/4, this attribute provides a single count of the number of SAR_PDUs discarded due to one of the following error conditions: MID = 0 when there is multiplexing, MID not equal to 0 when there is no multiplexing, Length field not equal to 44 octets for a BOM or COM, Length field not in the set [4, 8, ..., 44] octets or 63 octets for an EOM, or Length field not in the set [8, 12, ..., 44] octets for an SSM.";

### 5.4.138 Servicio suplementario independiente para lista de punteros de banda ancha (supplementaryServiceIndBbPtrList)

supplementaryServiceIndBbPtrList ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.SetOfInstances;
    MATCHES FOR EQUALITY, SET-COMPARISON, SET-INTERSECTION;
    BEHAVIOUR supplementaryServiceIndBbPtrListBeh;
REGISTERED AS {attribute 138};

**supplementaryServiceIndBbPtrListBeh BEHAVIOUR**

   **DEFINED AS**

   "This is a set-valued attribute whose value(s) points to instances of subclasses of the supplementaryServiceIndBb object class.";

## 5.4.139 Punto de terminación y lista de punteros VPCI (tpAndVpciPtrList)

**tpAndVpciPtrList ATTRIBUTE**

   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.TpAndVpciPtrList;**

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

   **BEHAVIOUR tpAndVpciPtrListBeh;**

**REGISTERED AS {attribute 139};**

**tpAndVpciPtrListBeh BEHAVIOUR**

   **DEFINED AS**

   "This is a set-valued attribute whose value(s) point to instances of termination point classes. A VPCI value is related to every pointer.";

## 5.4.140 Punto de terminación y lista de punteros de señalización VPCI (tpAndVpciSigPtrList)

**tpAndVpciSigPtrList ATTRIBUTE**

   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.TpAndVpciSigPtrList;**

   **MATCHES FOR EQUALITY;**

   **BEHAVIOUR tpAndVpciSigPtrListBeh;**

**REGISTERED AS {attribute 140};**

**tpAndVpciSigPtrListBeh BEHAVIOUR**

   **DEFINED AS**

   "This is a set-valued attribute whose value(s) point to instances of the vpTTPBidirectional managed object class or its subclasses. This vpTTPBidirectional object instances terminate the VPC's managed by this uni access. A VPCI value is related to every pointer, corresponding to the two octects defined for ITU-T UNI signalling. In the case of associated signalling, additionally a signalling channel pointer is related to every pointer. The optional signChannel in the associated ASN.1 definition which identifies the signalling channel for associated signalling is omitted for non-associated signalling.";

## 5.4.141 Lista de puntos de terminación (terminationPointList)

**terminationPointList ATTRIBUTE**

   **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectList;**

   **MATCHES FOR EQUALITY;**

   **BEHAVIOUR terminationPointListBeh;**

**REGISTERED AS {attribute 141};**

**terminationPointListBeh BEHAVIOUR**

   **DEFINED AS**

   "This attribute provides an ordered list of the termination points (e.g. nDS0/DS1/DS3/E3/J2/Frame Relay) that are interworked. The traffic characteristics of the interworked ATM VC termination point must be able to accommodate the combination of traffic characteristics of all the termination points in this list.";

## 5.4.142 Puntero de intervalo de tiempo (timeslotPtr)

timeslotPtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.ObjectInstance;
    MATCHES FOR EQUALITY;
    BEHAVIOUR timeslotPtrBeh;
REGISTERED AS {attribute 142};

timeslotPtrBeh BEHAVIOUR
    DEFINED AS
        "Pointer to the terminated timeslot (e.g. e0CTP, ds0CTP).";

## 5.4.143 Relación de temporización (timingRelation)

timingRelation ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.TimingRelation ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR timingRelationBeh;
REGISTERED AS {attribute 143};

timingRelationBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates the timing relation between sender and receiver (end-to-end)." ;

## 5.4.144 Límite de retardo de tránsito (transitDelayLimit)

transitDelayLimit ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.TransitDelayLimit ;
    MATCHES FOR EQUALITY;
    BEHAVIOUR transitDelayLimitBeh;
REGISTERED AS {attribute 144};

transitDelayLimitBeh BEHAVIOUR
    DEFINED AS
        "This entity describes the range of transit delay value (in micro seconds) for the underlying routes.
        The propagation delay (delay already encountered as signalled) plus the transit delay (for this route)
        have to be less than the end to end transit delay required by the user." ;

## 5.4.145 Entrega de dos números de parte llamante (twoCallingPartyNumberDelivery)

twoCallingPartyNumberDelivery ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.Boolean;
    MATCHES FOR EQUALITY;
    BEHAVIOUR twoCallingPartyNumberDeliveryBeh;
REGISTERED AS {attribute 145};

twoCallingPartyNumberDeliveryBeh BEHAVIOUR
    DEFINED AS
        "This attribute indicates whether two calling party numbers have to be sent to the called party if
        two were received.";

## 5.4.146 Identificador de acceso UNI (uniAccessId)

uniAccessId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;
    MATCHES FOR EQUALITY;
    BEHAVIOUR uniAccessIdBeh;
REGISTERED AS {attribute 146};

**uniAccessIdBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute is used to name instances of the uniAccess managed object class.";**

## 5.4.147 Algoritmo utilizado (usedAlgorithm)

**usedAlgorithm ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.UsedAlgorithm;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR usedAlgorithmBeh;**
**REGISTERED AS {attribute 147};**

**usedAlgorithmBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute describes the method how to select a resource from the pointer list.";**

## 5.4.148 Identificador de datos de usuario (userDataId)

**userDataId ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR userDataIdBeh;**
**REGISTERED AS {attribute 148};**

**userDataIdBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute is used to name objects of the userData managed object class.";**

## 5.4.149 Puntero de datos de usuario (userDataPtr)

**userDataPtr ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.PointerOrNull;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR userDataPtrBeh;**
**REGISTERED AS {attribute 149};**

**userDataPtrBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute describes a single pointer to an object of the userData object class or its subclasses.";**

## 5.4.150 Identificador de grupo de trayectos virtuales (virtualPathGroupId)

**virtualPathGroupId ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR virtualPathGroupIdBeh;**
**REGISTERED AS {attribute 150};**

**virtualPathGroupIdBeh BEHAVIOUR**
    **DEFINED AS**
        **"This attribute is used to name instances of the virtualPathGroup managed object class.";**

## 5.4.151 Tipo de trayecto virtual (vpType)

**vpType    ATTRIBUTE**
    **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.VpType;**
    **MATCHES FOR EQUALITY;**
    **BEHAVIOUR vpTypeBeh;**
**REGISTERED AS {attribute 151};**

**vpTypeBeh BEHAVIOUR**
>> **DEFINED AS**
>>> **"This attribute indicates whether a virtual path can be used for permanent, for on-demand or for both types of virtual channels.";**

## 5.4.152 Identificador de combinación XTPSG (xtpsgCombId)

**xtpsgCombId ATTRIBUTE**
>> **WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule.NameType ;**
>> **MATCHES FOR EQUALITY;**
>> **BEHAVIOUR xtpsgCombIdBeh;**
**REGISTERED AS {attribute 152};**

**xtpsgCombIdBeh BEHAVIOUR**
>> **DEFINED AS**
>>> **"This entity describes the object identifier attribute of the object class 'xtpsgComb'." ;**

## 5.5    Definiciones de acciones

## 5.5.1    Adición de punto de terminación (addTerminationPoint)

**addTerminationPoint ACTION**
>> **BEHAVIOUR addTerminationPointBeh;**
>> **MODE CONFIRMED;**
>> **WITH INFORMATION SYNTAX ASN1DefinedTypesModule.AddTerminationPointInfo;**
>> **WITH REPLY SYNTAX ASN1DefinedTypesModule.AddTerminationPointReply;**
**REGISTERED AS {action 1};**

**addTerminationPointBeh BEHAVIOUR**
>> **DEFINED AS**
>>> **"This action is used to add one or more termination point objects to the identified interworkingVcTtpBidirectional. The traffic characteristics of the interworked ATM VC termination point must be able to accommodate the additional termination point.**
>>>> **Supplied with this action is the following information:**
>>>> **– New TPs: This parameter identifies the additional Termination Points to be added to the existing terminationPointList attribute of the identified interworkingVcTtpBidirectional object.**
>>>> **– InterworkingVcTtpBidirectional: This parameter identifies the instance of the interworkingVcTtpBidirectional object class to which the additional termination point to be interworked.**
>>>> **If the request is granted, the terminationPointList attribute, in the**
>>> **interworkingVcTtpBidirectional object, shall be reset to reflect the new termination point added.";**

## 5.5.2    Supresión de punto de terminación (removeTerminationPoint)

**removeTerminationPoint ACTION**
>> **BEHAVIOUR removeTerminationPointBeh;**
>> **MODE CONFIRMED;**
>> **WITH INFORMATION SYNTAX ASN1DefinedTypesModule.RemoveTerminationPointInfo;**
>> **WITH REPLY SYNTAX ASN1DefinedTypesModule.RemoveTerminationPointReply;**
**REGISTERED AS {action 2};**

**removeTerminationPointBeh BEHAVIOUR**

    **DEFINED AS**

        "This action is used to remove one or more termination point objects from the identified interworkingVcTtpBidirectional.

            Supplied with this action is the following information:

            – Existing TPs: This parameter identifies the existing Termination Points to be removed from the identified interworkingVcTtpBidirectional object.

            – InterworkingVcTtpBidirectional: This parameter identifies the instance of the interworkingVcTtpBidirectional object class from which the identified termination points should be removed.

            If the request is granted, the terminationPointList attribute, in the interworkingVcTtpBidirectional object, shall be reset to reflect the remaining termination points.";

## 5.6 Definiciones de comportamiento

### 5.6.1 Comportamiento establecido por el gestor (setByManagerBeh)

**setByManagerBeh BEHAVIOUR**

    **DEFINED AS**

        "value is set by the managed system";

## 6 Definiciones de tipos

**ASN1DefinedTypesModule {itu-t(0) recommendation(0) q(17) 824(824) dot(127) bsm(6) informationModel(0) asn1Module(2) asn1TypeModule(0)}**

**DEFINITIONS IMPLICIT TAGS ::=**

**BEGIN**
-- *EXPORTS everything*

**IMPORTS**
    **ObjectInstance**
    **FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3)}**

    **NameType,**
    **ObjectList,**
    **PointerOrNull,**
    **ProblemCause**
    **FROM ASN1DefinedTypesModule {ccitt recommendation m gnm(3100) informationModel(0) asn1Modules(2) asn1DefinedTypesModule(0)}**

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

    **integerZero**
    **FROM**
    **AtmMIBMod {itu-t(0) recommendation(0) i(9) atmm(751) informationModel(0) ans1Module(2) atm(0)};**
-- *additional value definitions to probableCause production*
    **cellStarvation ProbableCause ::= globalValue : {atmSwitchProbableCause 1}**

**informationModel**         **OBJECT IDENTIFIER ::= {itu-t(0) recommendation(0) q(17) 824(824) dot(127) bsm(6) informationModel(0) asn1Module(2) asn1TypeModule(0)}**

**standardSpecificExtension**     **OBJECT IDENTIFIER ::= {informationModel standardSpecificExtension(0)}**

```
managedObjectClass          OBJECT IDENTIFIER ::= {informationModel managedObjectClass(3)}

package                     OBJECT IDENTIFIER ::= {informationModel package(4)}

nameBinding                 OBJECT IDENTIFIER ::= {informationModel nameBinding(6)}

attribute                   OBJECT IDENTIFIER ::= {informationModel attribute (7)}

action                      OBJECT IDENTIFIER ::= {informationModel action(9)}

notification                OBJECT IDENTIFIER ::= {informationModel notification(10)}

atmSwitchProbableCause      OBJECT IDENTIFIER ::= {standardSpecificExtension 0}

AalMode ::= ENUMERATED {
        messageAssured (0),
        messageUnassured (1),
        streamingAssured (2),
        streamingUnassured (3)}

AalType ::= ENUMERATED {
        aal1 (0),
        aal2 (1), -- encoded for future use
        aal34 (2),
        aal5 (3)}
AbstractDestinationPtr ::= ObjectInstance

ActiveListOfRouteTpsPtr ::= ObjectInstance

ActiveTargetPtr ::= CHOICE {
        pointer          ObjectInstance,
        carrierRequired    NULL }

AddTerminationPointInfo ::= SEQUENCE {
        newTPs                          NewTPs,
        interworkingVcTtpBidirectionalInstance          ObjectInstance}

AddTerminationPointReply ::= SEQUENCE OF SEQUENCE {
        tpAdded     ObjectInstance,
        tpNotAdded       ProblemCause OPTIONAL}

AssignNonAssign ::= INTEGER {
        assign              (0),
        nonAssign           (1) }

BearerCapab ::= INTEGER {
        dbr        (0),
        sbrRt      (1),
        sbrNrt     (2),
        abr        (3),
        ubr        (4),
        abtDt      (5),
        abtIt      (6) }

BlockedForMaintenance ::= INTEGER {
        blocked             (0),
        unblocked           (1) }

Boolean  ::=  BOOLEAN

BufferRelease  ::=  BOOLEAN
bufferReleaseDefault BufferRelease ::= TRUE

CallingPartyCategory ::= CHOICE {
        unused           NULL,
        category         Category }
```

**Category ::= BIT STRING (SIZE (8))**   *-- acc. Rec. Q.2763*

**CarrierCode ::= NetworkIdentification**

**CarrierDataPtr ::= ObjectInstance**

**CCITTNetworkPlanIndicator ::= INTEGER**

**ChannelAssociatedSignalling ::= INTEGER**
**{**
**basic (0),**
**e1Cas (1),**
**ds1SfCas (2),**
**ds1EsfCas (3),**
**j2Cas (4)**
**}**

**Cic ::= INTEGER (0..65335)**

**CIPRequired ::= Boolean**

**ClockRecoveryType ::= ENUMERATED {**
**synchronous (0),**
**srts (1),**
**adaptive (2)}**

**Code ::= SET OF DigitString4**

**CSPRequired ::= Boolean**

**ConnLineIdRestrictionOptions ::= SEQUENCE {**
**mode**                **INTEGER {permanent(1), temporary(2)},**
**default**            **INTEGER {restricted(1),**
                                   **notRestr(2)}**        **OPTIONAL** *-- for temporary mode only --*
                         **}**

**ConnectionIdOffering ::=INTEGER {**
**exclusiveVpciExclusiveVci**       **(0),**
**exclusiveVpciAnyVci**             **(1),**
**noIndication**                      **(8)  }**

**connectionIdOfferingDefault  ConnectionIdOffering ::= exclusiveVpciExclusiveVci**

**CdpnRepresentationType ::= INTEGER {**
**subscriber**      **(0),**
**national**         **(1),**
**international**    **(2),**
**unknown**        **(3)  }**

**CugBarring ::= INTEGER {**
**none**                   **(1),**
**incomingCallsBarred**    **(2),**
**outgoingCallsBarred**    **(3)}**

**CugDataNetworkIdentification  ::= NumericString (SIZE(4))**      *-- Rec. Q.2763*

**CugIndex ::= INTEGER (0..65535)**                  *-- Rec. Q.2955*

**CugInterlockCode ::= INTEGER (0..65535)**         *-- Rec. Q.2763*

**DestinationCode ::= DigitString15**

**DestinationType ::= INTEGER {**
**international**    **(1),**
**national**         **(2),**
**local**             **(3)}**

**defaultBlockedForMaintenance BlockedForMaintenance ::= blocked**

**DefaultDirectoryNumber ::= CHOICE  {**
        **noDefault         NULL,**
        **directoryNumber   DirectoryNumber}**

**defaultNULL ::= NULL**

**defaultScreenNumber Boolean ::= TRUE**

**defaultSignallingType SignallingType ::= nonassociated**

**defaultTwoCallingPartyNumberDelivery Boolean ::= TRUE**

**DigitComb ::= SEQUENCE OF DigitElement**

**DigitCombInsert ::= SET OF SEQUENCE {**
        **startPosition     [0] INTEGER ,**
        **combination           [1] DigitComb }**

**DigitCombReplace ::= SET OF SEQUENCE {**
        **startPosition     [0] INTEGER ,**
        **endPosition           [1] INTEGER ,**
        **combination           [2] DigitComb }**

**DigitElement ::= PrintableString**
   **(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))**
   **(SIZE (1))**

**DigitManipPtr ::= ObjectInstance**

**DigitString4 ::= PrintableString**
   **(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))**
   **(SIZE (1..4))**

**DigitString8 ::= PrintableString**
   **(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))**
   **(SIZE (1..8))**

**DigitString15 ::= PrintableString**
   **(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))**
   **(SIZE (1..15))**

**DigitSuppress ::= SET OF SEQUENCE {**
        **startPosition     [0] INTEGER ,**
        **endPosition           [1] INTEGER }**

**DirectoryNumber ::= E164DN**

**E164DN ::= SEQUENCE {**
        **countryCode               [0]   NumericString (SIZE (1..4)) OPTIONAL,**
        **nationalSignificantNumber     [1]   SEQUENCE {**
                        **nationalDestinationNumber   [0]   NumericString (SIZE (1..6)) OPTIONAL,**
                        **subscriberNumber         [1]   NumericString (SIZE (1..8))}**
                        **}**

**emptySet SetOfInstances ::= { }**

**ExcludedSubscriberCodes ::= SET OF PrintableString**
   **(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))**

**ExistingTPs ::= SEQUENCE OF ObjectInstance**

**FecMethod ::= ENUMERATED{**
     **noFEC (0),**
     **lossSensitiveSignalFEC (1),**
     **delaySensitiveSignalFEC (2)}**

**InitialSubscriberCodes ::= SET OF PrintableString**
    **(FROM("1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"0"|"A"|"B"|"C"|"D"|"E"|"F"))**

**Integer ::= INTEGER**

**InterCugAccess ::= INTEGER**
       **{none**                                  **(1),**
       **outgoingPermanentAccess**         **(2),**
       **outgoingPerCallAccess**            **(3),**
       **incomingAccess**                    **(4),**
       **outgoingPermanentAndIncomingAccess**   **(5),**
       **outgoingPerCallAndIncomingAccess**     **(6) }**

**LinkType ::= INTEGER {**
       **national**          **(0),**
       **international**     **(1) }**

**ListOfRoutesPtrList ::= SEQUENCE OF ObjectInstance**

**ListOfLinkGroupsPtrList ::= SEQUENCE OF ObjectInstance**

**LocalAreaCode ::=**
       **NumericString (FROM ("0"|"1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"))**

**MaintenanceSignallingRunning ::= BOOLEAN**

**MaxCc ::= INTEGER**
**maxCcDefault MaxCc ::= 4**

**MaxCpcsPduSize ::= SEQUENCE {**
      **forward [0] INTEGER (1..65535) OPTIONAL,**
      **backward [1] INTEGER  (1..65535) OPTIONAL}**

**MaxDigits ::= INTEGER**

**MaxInformationFieldLength ::= INTEGER**
**maxInformationFieldLengthDefault MaxInformationFieldLength ::= 4096**

**MaxLengthSscopUuField ::= INTEGER**
**maxLengthSscopUuFieldDefault MaxLengthSscopUuField ::= 4096**

**MaxPd ::= INTEGER**
**maxPdDefault MaxPd ::= 25**

**MaxSscopCreditToPeer ::= INTEGER**
**maxSscopCreditToPeerDefault MaxSscopCreditToPeer ::= 16**

**MaxStat ::= INTEGER**
**maxStatDefault MaxStat ::= 67**

**MidRange ::= SEQUENCE {**
      **lowvalue [0] INTEGER (1..66536),**
      **highvalue [1] INTEGER (1..66536)}**

**MinDigits ::= INTEGER**

**NationalNetworkIdenPlanIndicator ::= INTEGER**

**NatureOfAddress ::= DestinationType**

**NbTransferCapability ::= INTEGER {**
      **speech**                     **(0),**
      **r64kbitUnrestricted**        **(1),**
      **r56kbitDigitalRestricted**     **(2),**
      **r3point1khzAudio**          **(3),**
      **r7khzAudio**                **(4),**
      **video**                      **(5) }**

**NbTransferCapabilitySet ::= SET OF NbTransferCapability**

**NetworkBorder ::= INTEGER {**
        **intraNetwork      (0),**
        **interNetwork      (1) }**

**NetworkIdentification ::= DigitString8**

**NetworkIdentificationPlan ::= CHOICE**
        **{**
        **cCITTNetworkPlanIndicator      [0] CCITTNetworkPlanIndicator,**
        **nationalNetworkIdenPlanIndicator  [1] NationalNetworkIdenPlanIndicator    }**

**NetworkType ::= INTEGER {**
        **transit        (0),**
        **nonTransit      (1) }**

**NewTPs ::= SEQUENCE OF ObjectInstance**

**Null ::= NULL**

**Origin ::= CHOICE {**
        **unused    NULL,**
        **origin     INTEGER }**

**OwnInternationalCode ::= NumericString**
        **(FROM ("0"|"1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"))**

**PollAfterRetransmission  ::=  BOOLEAN**

**PreferredCarrier ::= SEQUENCE {**                               *-- acc. Rec. Q.2763*
        **networkIdentificationPlan         NetworkIdentificationPlan,**
        **typesOfNetworkIdentification      TypesOfNetworkIdentification,**
        **networkIdentification            NetworkIdentification }**

**PreferredCugIndex ::= CHOICE{**
        **notDefined [0]    NULL,**
        **defined [1]       CugIndex}**

**PropagationDelay ::= INTEGER**

**RemoteBlocking ::= INTEGER {**
        **remoteBlocked             (0),**
        **remoteUnblocked         (1) }**

**RemoteBlockingReason ::= INTEGER {**
        **none         (0),**
        **mob          (1),**
        **hob          (2),**
        **mobAndHob     (3) }**

**RemoveTerminationPointInfo ::= SEQUENCE {**
        **existingTPs                         ExistingTPs,**
        **interworkingVcTtpBidirectionalInstance    ObjectInstance}**

**RemoveTerminationPointReply ::= SEQUENCE  OF SEQUENCE {**
        **tpInstance           ObjectInstance,**
        **tpRemovalProblem      ProblemCause OPTIONAL**
        *-- absent if tpInstance is removed*
        **}**

**ReqBandwidthEgress ::= SEQUENCE {**
        **lowerLimit      INTEGER,**
        **upperLimit      INTEGER }**

**ReqBandwidthIngress ::= SEQUENCE {**
        **lowerLimit        INTEGER,**
        **upperLimit        INTEGER }**

**ReqBearerCapab ::= SET OF BearerCapab**

**ReqNbTransferCapability ::= CHOICE {**
        **withoutNbCapab  NULL,**
        **withNbCapab          NbTransferCapabilitySet }**

**RingTimeLimit ::= INTEGER**

**SearchMethod ::= INTEGER {**
        **forwardSequential        (0),**
        **backwardSequential      (1),**
        **forwardCyclic            (2),**
        **backwardCyclic          (3) }**

**SendTns ::= BOOLEAN**

**SetOfInstances ::= SET OF ObjectInstance**

**SignallingStandard ::= INTEGER {**
        **itu        (0),**
        **atmf31  (1),**
        **atm40   (2) }**

**SignallingProtocol ::= INTEGER {**
        **nisup          (0),**
        **bisup          (1) }**

**SignallingType ::= INTEGER {**
        **nonassociated   (0),**
        **associated      (1) }**

**SscopTimerCc  ::=  INTEGER**
**sscopTimerCcDefault SscopTimerCc  ::= 1000**

**SscopTimerIdle  ::=  INTEGER**
**sscopTimerIdleDefault SscopTimerIdle  ::= 15000**

**SscopTimerKeepAlive  ::=  INTEGER**
**sscopTimerKeepAliveDefault SscopTimerKeepAlive  ::= 2000**

**SscopTimerNoResponse  ::=  INTEGER**
**sscopTimerNoResponseDefault SscopTimerNoResponse  ::= 7000**

**SscopTimerPoll  ::=  INTEGER**
**sscopTimerPollDefault SscopTimerPoll  ::= 750**

**SscsType ::= INTEGER {**
     **null (0),**
     **dataAssured (1),**
     **dataNonAssured (2),**
     **frameRelay (3)}**

**SubscriberCategory ::= INTEGER {**               *-- acc. Rec. Q.2763*
        **unknownAtThisMoment      (0),**     *-- for national use*
        **operatorLanguageFrench    (1),**
        **operatorLanguageEnglish   (2),**
        **operatorLanguageGerman    (3),**
        **operatorLanguageRussian   (4),**
        **operatorLanguageSpanish   (5),**
        **nationalOperator          (9),**     *-- for national use*
        **ordinaryCallingSubscriber   (10),**

```
            callingSubscriberWithPriority      (11),
            dataCall                           (12),
            testCall                           (13),
            payPhone                           (15) }  (0..255)

subscriberCategoryDefault SubscriberCategory  ::= ordinaryCallingSubscriber

SubType ::= INTEGER {
        null (0),
        voiceBand (1),
        circuitEmulationSynchronous (2),
        circuitEmulationAsynchronous (3),
        highQualityAudio (4),
        video (5)}

TimingRelation ::= INTEGER {
        timingNotRequired          (0),
        timingRequired             (1) }

TpAndVpciSigPtrList ::= SET OF SEQUENCE {
        tp                                 ObjectInstance,
        vpci                               VpciValue,
        sigChannel                         ObjectInstance   OPTIONAL}

TransitDelayLimit ::= SEQUENCE {
        lowerLimit      INTEGER,
        upperLimit      UpLimit }

TypesOfNetworkIdentification ::= INTEGER

UpLimit ::= CHOICE {
        noLimit         NULL,
        limit           INTEGER }

UsedAlgorithm ::= INTEGER {
        sequential                 (0),
        cyclic                     (1) }

VpciValue ::= INTEGER (0..65535)

TpAndVpciPtrList ::= SET OF SEQUENCE {
        tp         ObjectInstance,
        vpci       VpciValue }

VpType                         ::= INTEGER {
                                   on-demand      (0),
                                   permanent      (1),
                                   mixed          (2)}
```

**END** -- *of ASN1DefinedTypesModule*


## 7      Pilas de protocolos

Como parte de este documento se pueden utilizar las pilas de protocolos especificadas en las Recomendaciones Q.811, Q.812 y G.773, y la parte transconectores digitales SDH de la Recomendación G.784. Deberán utilizarse las siguientes Recomendaciones para ampliar estas pilas de modo que se incluye el ATM:

–        Q.2811 Interfaces Q3 y X de banda ancha – Protocolos de capa inferior;

–        Q.2812 Interfaces Q3 y X de banda ancha – Protocolos de capa superior.

## ANEXO A

### Necesidades de gestión

El presente anexo se basa en la Recomendación I.751 [4] sobre la gestión de transconexiones ATM y describe o amplía las necesidades de gestión para los aspectos presentes únicamente en el conmutador ATM.

El conjunto de las necesidades de gestión de los elementos de red con conmutación ATM como la combinación de los elementos descritos a continuación y los que figuran en la Recomendación arriba mencionada.

La capa 5 de adaptación ATM se especifica en la Recomendación I.363.5 [2].

La capa de adaptación ATM de señalización se divide en el protocolo con conexión específico del servicio (SSCOP, *service specific connection-oriented protocol*) según se define en la Recomendación UIT-T Q.2110 [7] y la función de coordinación especificada del servicio (SSCF, *service specific coordination function*), definida esta última para la UNI en la Recomendación Q.2130 [8] y para la NNI en la Recomendación Q.2140 [9].

La señalización de usuario del DSS 2 se define en la Recomendación Q.2931 [11], mientras que la señalización de red de la parte usuario de las RDSI-BA se define en las Recomendaciones Q.2761 a Q.2764 [10].

## A.1    Funciones de gestión de la configuración

La gestión de la configuración proporciona funciones que permiten controlar, identificar, recoger y suministrar datos para los elementos de red.

Por un lado, en un sistema de transconexiones ATM, se establecen, modifican y liberan las conexiones VP/VC mediante las funciones de gestión de la configuración. Por otro lado, en un conmutador ATM, se establecen, modifican y liberan las conexiones mediante procedimientos de señalización y la gestión de la configuración se refiere sobre todo a la gestión de entidades de control.

### A.1.1    Funciones generales de configuración de elementos de red

Este grupo de funciones incluye el conjunto de procedimientos necesarios para poner en funcionamiento los elementos de red y atender a las modificaciones y el perfeccionamiento de los soportes físico y lógico. Entre estas funciones figuran también las necesidades de la administración del cliente y del encaminamiento de llamadas.

### A.1.2    Funciones de configuración de la capa de transporte ATM

### A.1.2.1    Funciones de configuración VPC/VCC

Es necesario asegurar la capacidad de fijar una conexión VP/VC en un estado administrativo de desbloqueada (flujo de tráfico permitido) o de bloqueada (flujo de tráfico suspendido).

La gestión del sistema utilizará dicha capacidad para efectuar acciones correctivas en el caso de degradación de la calidad de funcionamiento o averías de la conexión virtual.

### A.1.3 Funciones de configuración de la capa de adaptación ATM

De las diversas capas de adaptación ATM se derivan las necesidades de gestión de la configuración que a continuación se indican. Cada camino por la capa del canal virtual soporta una sola capa de adaptación ATM, que puede configurarse o definirse mediante el control de la llamada. Salvo indicación contraria, pueden solicitarse modificaciones de la capa de adaptación ATM, pero las solicitudes en cuestión pueden ser rechazadas si la aplicación no soporta la modificación solicitada. De manera similar, salvo indicación contraria, debe ser posible en todos los casos leer los detalles de la configuración aplicada a las capas de adaptación ATM.

#### A.1.3.1 Necesidades de gestión de la configuración para la capa 5 de adaptación ATM

Pueden leerse los siguientes datos y solicitar su modificación:

– el número máximo de octetos en la cabida útil de CPCS-PDU soportada por la capa 5 de adaptación ATM, tanto en el modo transmisión como en el modo recepción;

– la forma de encapsulado de datos que se utiliza en la subcapa de convergencia específica del servicio (SSCS, *service specific convergence sublayer*) de la capa 5 de adaptación ATM.

#### A.1.3.2 Necesidades de gestión de la configuración para la capa de adaptación ATM de señalización

Puede leerse el tipo de subcapa de convergencia específica del servicio (SSCS) y solicitar su modificación.

Deberá ser posible configurar valores de temporización para la capa de adaptación ATM de señalización (SAAL, *signalling ATM adaptation layer*).

### A.1.4 Funciones de configuración de la señalización de banda ancha

#### A.1.4.1 Coordinación de los valores VPCI

Se requiere una coordinación de la gestión entre conmutadores interconectados, para que el conmutador que efectúa la señalización tenga información sobre el grado en que las correspondencias de VPCI difieren de las de los accesos conectados directamente cuando el acceso se conecta indirectamente a través de otro conmutador con funciones de transconexión.

### A.2 Funciones de gestión de la calidad de funcionamiento

La gestión de la calidad de funcionamiento proporciona funciones que permiten evaluar e informar sobre el comportamiento de los equipos de telecomunicaciones y la eficacia del elemento de red.

Las funciones de gestión de la calidad de funcionamiento han de basarse en la Recomendación Q.822. En las subcláusulas que siguen se describen en detalle los parámetros que se supervisan.

Las funciones identificadas de los conmutadores ATM tienen aplicación en las mediciones de calidad de funcionamiento y de errores, destinadas a informar del comportamiento general del elemento de red, y pueden ser útiles para detectar situaciones de degradación de la calidad de funcionamiento y para identificar las posibles causas de una situación anormal.

### A.2.1 Funciones generales de calidad de funcionamiento del elemento de red

### A.2.2 Funciones de calidad de funcionamiento de la capa de transporte ATM

Hay tres conjuntos principales de parámetros que es preciso supervisar. El primero está relacionado con el mecanismo de flujos F4 y F5 de OAM, el segundo consiste en los parámetros relacionados con la carga y el tráfico, mientras que el tercero se vincula a las técnicas correspondientes al sistema.

#### A.2.2.1 Parámetros relacionados con los flujos F4/F5 de OAM

La supervisión de la calidad de funcionamiento se basa en la utilización de flujos OAM, tanto en un segmento como de extremo a extremo (Recomendación I.610 del CCITT). En la capa ATM, se consideran los flujos F4 y F5.

Cada punto de terminación de camino debe tener la capacidad de generar flujos F4/F5 en el enlace de salida y/o tratar los flujos F4/F5 de llegada.

Los flujos en cuestión pueden utilizarse para controlar los siguientes parámetros, respectivamente en las capas VP y VC:

– tasa de errores en los bits;

– pérdida/inserción de células;

– retardo de transferencia de células;

– variación del retardo de células.

El flujo tiene los mecanismos adecuados con los que soportar estas funciones, por ejemplo, el código de detección de bloque erróneo (BIP-X: Véase la I.610).

Si el valor medido de estos parámetros sobrepasa un umbral previamente establecido, el sistema genera una alarma, que se envía a la RGT y a las funciones del plano de control.

#### A.2.2.2 Parámetros relacionados con la carga y el tráfico

Es preciso supervisar los parámetros, relacionados con la carga y el tráfico, que se indican a continuación. Pueden utilizarse diversos métodos, no incluidos en el mecanismo de flujo OAM:

– sobrecarga/congestión internas;

– congestión externa;

– bloqueo a nivel de conexión virtual.

A continuación se examinan las funciones destinadas a supervisar el estado de sobrecarga y congestión del nodo (congestión interna) y de la red (congestión externa).

Pueden ser causa de sobrecarga averías producidas en el interior de la estructura de conmutación, una capacidad interna insuficiente como resultado de imperfecciones del diseño del sistema, que no es capaz de resistir a las ráfagas de tráfico, o imperfecciones de las funciones UPC/NPC.

Las condiciones de sobrecarga pueden indicarse por el desbordamiento de las memorias tampón situadas a la entrada y/o salida de la estructura de conmutación. En tal caso, la reacción automática que produce este estado consiste en descartar células, eventualmente de manera selectiva si se ha adoptado un mecanismo de prioridades.

Si el estado de sobrecarga persiste, el conmutador puede quedar congestionado. Esta situación se manifiesta también por una condición de desbordamiento permanente de la memoria tampón.

Si un elemento de red queda en estado de congestión, el sistema deberá informar de esa situación a todos los nodos hacia abajo; se inserta una notificación de dicho estado en todas las células que parten del nodo mediante un código particular en el campo PTI del encabezamiento de célula ATM (Recomendación I.361).

La indicación de congestión, por tanto, se propaga por la red hacia adelante.

Se puede aplicar el control de las células congestionadas en base a un VP/VC para evitar la congestión de toda la red.

A nivel de conexión virtual, el conmutador puede pasar a un estado de bloqueo de conexión cuando sea imposible conectar una conexión VP/VC atribuible de una interfaz de entrada con una conexión VP/VC atribuible equivalente de la correspondiente interfaz de salida. El control de conexión no puede aceptar la nueva conexión VP/VC, aunque las interfaces dispongan de capacidad suficiente.

Lo anterior es algo que puede ocurrir por bloqueo interior en la estructura de conmutación, por la implementación de la propia estructura de conmutación con una arquitectura de bloqueo, o por la aplicación de políticas de gestión de recursos con las que se trata de garantizar la calidad de servicio solicitada.

### A.2.2.3    Parámetros adicionales

También deben supervisarse los parámetros de:

–        comprobación de errores de encabezamiento;

–        comprobación de errores de multiplexión de células;

–        intervención de UPC/NPC.

Las funciones de comprobación de errores de encabezamiento y de multiplexión de células se ejecutan en las capas inferiores del modelo de referencia del protocolo de RDSI-BA (respectivamente en la capa física y en la capa ATM). En el primer caso, se dan indicaciones sobre las células afectadas por errores múltiples en el encabezamiento, por lo que no se pueden aplicar procedimientos de corrección; en el segundo caso, las células aparecen con un encabezamiento de célula aparentemente correcto, pero la tabla de traducción interna de VCI/VPI no contiene ninguna entrada válida para ese VCI/VPI. En consecuencia, se ha producido un error de multiplexión de VCI/VPI.

Se supone que, en ambos casos, se descartan las células.

Las funciones UPC y NPC marcan o descartan células en caso de sobrepasarse los parámetros de servicio acordados. Se ha de contar el número de células marcadas por VP y/o VC.

### A.2.3    Funciones de calidad de funcionamiento de la capa de adaptación ATM

Es preciso supervisar varios conjuntos de parámetros para las diversas capas de adaptación ATM.

### A.2.3.1 Necesidades de gestión de la calidad de funcionamiento para la capa 5 de adaptación ATM

La supervisión de la calidad de funcionamiento de la capa 5 de adaptación ATM está relacionada con la utilización del campo de tipo de cabida útil en el encabezamiento de la célula ATM y con la utilización de los últimos ocho octetos de la CPCS-PDU [2]. En particular, deberán supervisarse:

– las secuencias no delineadas de células ATM de mayor longitud que el número máximo de células en una CPCS-PDU;

– las incoherencias registradas entre el número de células ATM en una CPCS-PDU indicado por la codificación del campo de tipo de cabida útil de las células y la longitud de CPCS indicada en el campo de longitud de la CPCS-PDU de cola;

– la tasa de errores detectados por el campo CRC en la CPCS-PDU.

Además, deberán estar disponibles las siguientes estadísticas de calidad de funcionamiento:

– número de PDU recibidas y transmitidas;

– PDU descartadas debido a errores de CRC;

– PDU descartadas por la conclusión de la temporización del reensamblado;

– PDU descartadas por dimensiones excesivas;

– PDU descartadas por errores de protocolo.

### A.3 Funciones de gestión de averías

La gestión de averías es un conjunto de funciones que permiten la detección, localización y corrección de todo funcionamiento anormal del conmutador ATM.

### A.3.1 Vigilancia de alarmas

### A.3.1.1 Funciones generales de vigilancia de alarmas de un elemento de red

Ninguna necesidad identificada.

### A.3.1.2 Funciones de vigilancia de alarmas de la capa de transporte ATM

Cuando se detecta una avería o una situación de calidad de funcionamiento altamente degradada, un punto de terminación de conexión debe estar en condiciones de enviar una alarma VP-AIS en el flujo F4/F5 de OAM, y enviar una alarma a la RGT y a las funciones del plano de control.

### A.3.1.3 Funciones de vigilancia de alarmas de la capa de adaptación ATM

Los problemas detectados en las capas de adaptación ATM darán lugar a diversas alarmas.

### A.3.1.3.1 Necesidades de gestión de la vigilancia de alarmas para la capa 5 de adaptación ATM

Las alarmas se generan en las siguientes condiciones:

– cuando el campo tipo de cabida útil del encabezamiento de célula ATM deja de indicar la última célula ATM de una CPCS-PDU para un número de células superior al número máximo de células de una CPCS-PDU;

– cuando el número de células ATM de una CPCS-PDU no corresponde a la longitud de CPCS que se indica al campo de longitud de una CPCS-PDU de cola;

– cuando la tasa de error detectada por el campo CRC en la CPCS-PDU es demasiado elevada.

### A.3.2 Localización de pruebas y averías

### A.3.2.1 Funciones generales de localización de pruebas y averías de un elemento de red

Ninguna necesidad identificada.

### A.3.2.2 Funciones de localización de pruebas y averías de la capa de transporte ATM

El proceso de comprobación de la continuidad, efectuado mediante los flujos F4/F5 de OAM, se aplica para probar la integridad de las tablas de traducción y encaminamiento del elemento de red. Cuando un punto de terminación de conexión no transmite células de usuario y no se indica fallo mediante las señales VP-AIS y VP-FERF, dicho punto debe ser capaz de enviar una señal de comprobación de la continuidad. Si el punto de terminación de recepción no recibe células OAM, producirá una señal VP-FERF. Este proceso sirve para localizar los puntos de terminación en los que se han producido fallos.

### A.3.2.3 Funciones de localización de pruebas y averías de la capa de adaptación ATM

Cuando se sospeche que se ha producido una avería en las capas de adaptación ATM, o si se ha producido una alarma, quizás convenga efectuar algunas acciones para comprobar el correcto funcionamiento de las capas de adaptación ATM e identificar el origen de una avería confirmada de la capa de adaptación ATM.

### A.3.2.3.1 Necesidades de localización de pruebas y averías para la capa 5 de adaptación ATM

Deberán efectuarse pruebas no entrometidas de la capa 5 de adaptación ATM, generando y detectando esquemas del octeto CPCS-UU de la CPCS-PDU de cola y/o de los octetos de relleno. Las pruebas entrometidas de la capa 5 de adaptación ATM se llevarán a cabo generando y detectando las características en la cabida útil de las CPCS-PDU. Dichos esquemas se devolverán en bucle a su origen o se enviarán en un solo sentido.

### A.3.3 Corrección de averías

### A.3.3.1 Funciones generales de corrección de averías de un elemento de red

Ninguna necesidad identificada.

## A.3.3.2    Funciones de corrección de averías de la capa de transporte ATM

Si se produce el fallo de una conexión VP/VC, es posible efectuar la corrección de las averías mediante una conmutación de protección.

El mecanismo de conmutación de protección se basa en el empleo de una conexión de reserva VP/VC compartida por un grupo de conexiones virtuales activas, y está subordinada a la gestión de capa.

## A.4    Necesidades específicas de la simulación

La Recomendación UIT-T Q.2764 describe el parámetro selección de red de tránsito para mensajes de establecimiento. Este parámetro puede incluirse "en la información de establecimiento enviada por la parte llamante o proporcionada sobre la base del abono". La información en cuestión "se utilizará para encaminar la llamada/conexión, por ejemplo a una RDSI de banda ancha específica".

Para soportar este parámetro, deberá ser posible asignar un valor de portador preferido (red de tránsito) a todo el cliente o a un número específico del directorio.

La Recomendación Q.2764 describe el parámetro categoría de la parte llamante para mensajes de establecimiento.

Para soportar este parámetro, deberá ser posible asignar un valor de categoría a todo el cliente o a un número específico del directorio.

La gestión del encaminamiento de llamadas permite marcar una NNI con una marca de origen para soportar el encaminamiento en función del origen de las llamadas entrantes. El encaminamiento en función del origen debe ser posible también para llamadas provenientes de una UNI.

Ha de ser posible marcar todo el cliente o un número específico del directorio con una marca de origen, utilizable por ejemplo para el encaminamiento en función del origen.

## APÉNDICE I

### Conexiones punto a multipunto

Mientras no haya un modelado de conexiones punto a multipunto en el UIT-T, se remite al lector a la especificación del Foro ATM af-nm-0027.000 [17].

## APÉNDICE II

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Serie M      RGT y mantenimiento de redes: sistemas de transmisión, circuitos telefónicos, telegrafía, facsímil y circuitos arrendados internacionales

Serie N      Mantenimiento: circuitos internacionales para transmisiones radiofónicas y de televisión

Serie O      Especificaciones de los aparatos de medida

Serie P      Calidad de transmisión telefónica, instalaciones telefónicas y redes locales

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