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Telecommunications Management Network (TMN); Functional specification of Customer Administration (CA) on the Operations System/Network Element (OS/NE) interface; Part 1: Single line configurations



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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Telecommunications Management Network (TMN).

The present document is part 1 of a multi-part EN covering the functional specification of Customer Administration (CA) on the Operations System / Network Element (OS/NE) interface, as identified below:

Part 1: "Single line configurations";

Part 2: "Multi line configurations".

Further parts are under study.

National transposition dates			
Date of adoption of this EN:	1 January 1999		
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Introduction

For the present document, the following priorities were assigned for the scope of the customer administration model:

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- modelling of analogue, digital and Integrated Services Digital Network (ISDN) customer installation configurations;
- modelling of the most frequently required ETSI ISDN teleservices, bearer services, and supplementary services;
- modelling of the most frequently required CEPT services and non-standardized services;
- re-definition of the V5 interface related object classes as far as they are affected by changes in their superclasses as defined in the recent I-ETS 300 291 when re-defining them in the present document.

Extendibility to cover all ETSI ISDN teleservices, bearer services and supplementary services, Private Branch Exchanges (PBXs), mobile customers, ATM, cordless and Universal Personal Telecommunication (UPT) customers, Centrex, packet switching, the full range of CEPT services, non-standardized services (e.g. hunting, etc.) is foreseen via subclassing (see entity-relationship diagram subclause 5.1, and descriptions in subclause 6.1).

In the present document, the customer administration model is restricted to modelling of semi-permanent customer data. Call processing and dynamic (state) information are no subject of the present document.

The present document is based on the ITU-T Recommendation Q.824 series [46] to [50], from which all relevant object classes were subclassed as far as necessary.

1 Scope

The present document specifies the management aspects of Customer Administration (CA) for Public Switched Telephone Network (PSTN), and public Integrated Services Digital Network (ISDN), in line with descriptions in ETR 047 [67], and restricted to service provisioning and service configuration only. The aspects of the local exchange part of V5 configuration management influenced by the present document are considered as well.

The model is restricted to the Operations System to Network Element (OS/NE) interface.

Although not included in the present document, the model has been designed to be extendible for Private Branch Exchanges (PBXs), Centrex, mobile, Asynchronous Transfer Mode (ATM), cordless and Universal Personal Telecommunication (UPT) customers.

Since Centrex is no standardized service and implementations vary, no Centrex related definitions are introduced into the normative part of the present document. In the informative annex D, a modelling approach for Centrex is given.

The ISDN teleservices, bearer services and supplementary services included in this issue of the model have been selected from ETR 010 [65], to test the structure of the model and ensure that it is applicable to all services.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

2.1 Normative references

- [1] EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [2] ETS 300 108: "Integrated Services Digital Network (ISDN); Circuit-mode 64 kbit/s unrestricted 8 kHz structured bearer service category; Service description".
- [3] ETS 300 109: "Integrated Services Digital Network (ISDN); Circuit-mode 64 kbit/s 8 kHz structured bearer service category usable for speech information transfer; Service description".
- [4] ETS 300 110: "Integrated Services Digital Network (ISDN); Circuit-mode 64 kbit/s 8 kHz structured bearer service category usable for 3,1 kHz audio information transfer; Service description".
- [5] ETS 300 389: "Integrated Services Digital Network (ISDN); Circuit-mode multiple-rate unrestricted 8 kHz structured bearer service category; Service description".
- [6] ETS 300 048: "Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Services (PMBS); ISDN Virtual Call (VC) and Permanent Virtual Call (PVC) bearer services provided by the B-channel of the user access basic and primary rate".
- [7] ETS 300 049: "Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Services (PMBS); ISDN Virtual Call (VC) and Permanent Virtual Call (PVC) bearer services provided by the D-channel of the user access basic and primary rate".

[8]	ETS 300 111: "Integrated Services Digital Network (ISDN); Telephony 3,1 kHz teleservice; Service description".
[9]	ETS 300 120: "Integrated Services Digital Network (ISDN); Service requirements for telefax group 4".
[10]	ETS 300 262: "Integrated Services Digital Network (ISDN); Syntax-based Videotex teleservice; Service description".
[11]	ETS 300 263: "Integrated Services Digital Network (ISDN); Telephony 7 kHz teleservice; Service description".
[12]	ETS 300 264: "Integrated Services Digital Network (ISDN); Videotelephony teleservice; Service description".
[13]	ETS 300 050: "Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service; Service Description".
[14]	ETS 300 053: "Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service; Service Description".
[15]	ETS 300 056: "Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service; Service Description".
[16]	ETS 300 059: "Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service; Service Description".
[17]	ETS 300 062: "Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Service Description".
[18]	ETS 300 089: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Service description".
[19]	ETS 300 648: "Public Switched Telephone Network (PSTN); Calling Line Identification Presentation (CLIP) supplementary service; Service description".
[20]	ETS 300 090: "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Service description".
[21]	ETS 300 649: "Public Switched Telephone Network (PSTN); Calling Line Identification Restriction (CLIR) supplementary service; Service description".
[22]	ETS 300 094: "Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service; Service description".
[23]	ETS 300 095: "Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service; Service description".
[24]	ETS 300 128: "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Service description".
[25]	ETS 300 136: "Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service; Service description".
[26]	ETS 300 139: "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service; Service description".
[27]	ETS 300 178: "Integrated Services Digital Network (ISDN); Advice of Charge: charging information at call set-up time (AOC-S) supplementary service; Service description".
[28]	ETS 300 179: "Integrated Services Digital Network (ISDN); Advice of Charge: charging information during the call (AOC-D) supplementary service; Service description".

[29] ETS 300 180: "Integrated Services Digital Network (ISDN); Advice of Charge: charging information at the end of the call (AOC-E) supplementary service; Service description".

[32] ETS 300 199: "Integrated Services Digital Network (ISDN); Call Forwarding Busy (CFB) supplementary service; Service description".

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- [33] ETS 300 200: "Integrated Services Digital Network (ISDN); Call Forwarding Unconditional (CFU) supplementary service; Service description".
- [34] ETS 300 201: "Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description".
- [35] ETS 300 202: "Integrated Services Digital Network (ISDN); Call Deflection (CD) supplementary service; Service description".
- [36] ETS 300 284: "Integrated Services Digital Network (ISDN); User-to-User Signalling (UUS) supplementary service; Service description".
- [37] ETS 300 357: "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Service description".
- [38] EN 300 367: "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Service description".
- [39] ETS 300 650: "Integrated Services Digital Network (ISDN); Message Waiting Indication (MWI) supplementary service; Service description".
- [40] EN 301 082: "Integrated Services Digital Network (ISDN); Outgoing Call Barring-Fixed (OCB-F) supplementary service; Service description".
- [41] EN 301 084: "Integrated Services Digital Network (ISDN); Outgoing Call Barring-User Controlled (OCB-UC) supplementary service; Service description".
- [42] EN 300 292: "Telecommunication Management Network (TMN); Functional specification of call routeing information management on the Operation System / Network Element (OS/NE) interface".
- [43] CCITT Recommendation E.164 (1997): "The international public telecommunication numbering plan".
- [44] CCITT Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [45] CCITT Recommendation M.3100: "Generic network information model".
- [46] ITU-T Recommendation Q.824.0 (1996): "Stage 2 and stage 3 description for the Q3 interface; customer administration; common information".
- [47] ITU-T Recommendation Q.824.1 (1996): "Stage 2 and stage 3 description for the Q3 interface; customer administration; Integrated Services Digital Network (ISDN) basic and primary rate access".
- [48] ITU-T Recommendation Q.824.2 (1996): "Stage 2 and stage 3 description for the Q3 interface; customer administration Integrated Services Digital Network (ISDN) supplementary services".
- [49] ITU-T Recommendation Q.824.3 (1996): "Stage 2 and stage 3 description for the Q3 interface; customer administration; Integrated Services Digital Network (ISDN) optional user facilities".
- [50] ITU-T Recommendation Q.824.4 (1996): "Stage 2 and stage 3 description for the Q3 interface; customer administration; Integrated Services Digital Network (ISDN) teleservices".
- [51] CCITT Recommendation X.121 (1996): "International numbering plan for public data networks".

CCITT Recommendation X.720: "Information technology; Open Systems Interconnection;

[53]	CCITT Recommendation X.721: "Information technology; Open Systems Interconnection; Structure of management information: Definition of management information".
[54]	Void.
[55]	CCITT Recommendation X.730 (1992): "Information technology; Open Systems Interconnection; Systems management: Object management function".
[56]	CCITT Recommendation X.731 (1992): "Information technology; Open Systems Interconnection; Systems management: State management function".
[57]	CCITT Recommendation X.732 (1992): "Information technology; Open Systems Interconnection; Systems management: Attributes for representing relationships".
[58]	CEPT Handbook on services and facilities offered to the subscribers in telephone system Section I and II: "Services and facilities within the Public Network. 3rd Edition 1981".

Structure of management information: Management information model".

- [59] ETS 300 377-1: "Q3 interface at the Local Exchange (LE) for configuration management of V5 interfaces and associated customer profiles. Part 1: Q3 interface specification".
- [60] ITU-T Recommendation I.324: "ISDN network architecture".
- [61] ETS 300 379-1: "Q3 interface at the Local Exchange (LE) for fault and performance management of V5 interfaces and associated customer profiles; Part 1: Q3 interface specification".
- [62] ETS 300 007: "Integrated Services Digital Network (ISDN); Support of packet-mode terminal equipment by an ISDN".
- [63] EN 301 134: "Integrated Services Digital Network (ISDN); Completion of calls on No Reply (CCNR) supplementary service; Service description".
- [64] EN 301 175: "Cordless Terminal Mobility (CTM); Phase 1; Service description".

2.2 Informative references

[65] ETR 010: "ISDN Standards Management (ISM); The ETSI Basic Guide on the European Integrated Services Digital Network (ISDN)".

[66] Void.

[52]

[67] ETR 047: "Network Aspects (NA); Telecommunications Management Network (TMN); Management services".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following definitions apply:

customer administration: the function of managing customer service provisioning information on an exchange.

The following definitions apply to managed classes which are more fully described in clause 6 and formally defined in clause 7.

access port profile: the access port profile object class represents the logical view on a termination point of the customer service access within the exchange.

access port: the access port object class represents the physical view on termination points of the customer service access within the exchange.

access channel: the access channel object class represents the logical termination of an ISDN B-channel or D-channel or an individual channel of a digital access port.

customer profile: the customer profile object class relates resources used by the customer and contains services provisioned for him.

customized resource: the customized resource object class relates a subset of the customer's services and resources where all services are not applicable to all access ports, access channels and directory numbers (DNs).

The definition of all ISDN teleservices, bearer services and supplementary services may be found in the ETS/EN listed in clause 6 of ETR 010 [65].

connection related function: the connection related function (CRF) is the function of the managed element to provide the telecommunication service to a customer (see ITU-T Recommendation I.324 [60]).

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASN.1	Abstract Syntax Notation 1
ATM	Asynchronous Transfer Mode
CA	Customer Administration
CUG	Closed User Group
DTMF	Dual Tone Multi Frequency
GDMO	Guidelines for the Definition of Managed Objects
ISDN	Integrated Services Digital Network
M/C/O	Mandatory / Conditional / Optional
NE	Network Element
OS	Operations System
PABX	Private Automatic Branch Exchange
PBX	Private Branch Exchange
PSTN	Public Switched Telephone Network
PIN	Personal Identification Number
RDN	Relative Distinguished Name
S	Interface reference point S
Т	Interface reference point T
TIB	Task Information Base
TMN	Telecommunications Management Network
UPT	Universal Personal Telecommunications

4 Functional requirements

The functional requirements are derived from the TIB A and TIB B specified in ETR 047 [67] for the customer administration service.

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

In a wide sense, this could include interactions for the purpose of service provision management, configuration administration, fault administration, charging (including detailed billing) administration, complaints administration, quality of service administration, traffic measurement administration etc. Here, however, only customer administration in the more traditional sense of service provision and service configuration has been included.

The components of service mentioned hereafter are within the scope of the present document.

4.1 Manage service provision

After receiving a customer order, find an available directory number and a suitable access port in an appropriate exchange and connect these.

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4.2 Administer service facilities and supplementary services

Record user service requirements as data related to directory number. Some services can be both customer controlled and operator controlled.

Examples are abbreviated dialling, priority, malicious call tracing, charging observation, traffic restriction, free of charge etc.

4.3 Administer customer line

Administer line characteristics which are relevant for the local exchange (e.g. line status, traffic direction).

5 Information model diagrams

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

- entity relationship models, showing the relations of the different managed objects;
- inheritance hierarchy, showing how managed objects are derived from each other (i.e. the different paths of inherited characteristics of the different managed objects);
- naming hierarchy showing the derivation of names for managed objects (i.e. the different naming paths for instances of managed objects).

These three different diagrams are only for clarification. The formal specification in terms of Guidelines for the Definition of Managed Objects (GDMO) templates and Abstract Syntax Notation 1 (ASN.1) type definitions are the relevant information for the implementation of the present document.

5.1 Entity relationship diagrams

Figure 1 shows the relationships of the object classes defining an ISDN/PSTN customer configuration. The service fragment indicated in figure 1 is detailed in figure 2.

In figure 3, the relationships of the object classes used for general service provision are shown.

Figure 4 gives the relationships of the object classes used for reference service configurations.

Object classes defined in the present document are indicated in the entity relationship diagrams by **bold** letters.

The relationships of the V5 interface related object classes are given in ETS 300 377-1 [59].

The relationships of object classes defined in other documents are only shown as far as needed.



Figure 1: ISDN/PSTN customer configuration



Figure 2: Customer specific services fragment



Figure 3: General services fragment



Figure 4: Service provision fragment

5.2 Inheritance hierarchy

These figures show the inheritances of the object classes defined in the present document. The inheritances of object classes referenced from other documents but not subclassed in the present document are defined in the referenced documents. As well, the inheritance of the service related object classes (subclasses) defined in the present document is not shown in these figures. Within the present document they are to be found in the fragment where their superclass is defined (e.g. telephony 3,1 kHz within the teleservice fragment). Object classes defined in the present document are highlighted in **bold** letters.



Figure 7: Inheritance hierarchy (3)



Figure 10: Inheritance hierarchy (6)

5.3 Naming hierarchy

This figure shows the name bindings (containment relationships) of the object classes defined in the present document. The name bindings of object classes referenced from other documents are defined in the referenced documents. They are only indicated in this table where necessary. Object classes defined in the present document are highlighted in **bold** letters.







Figure 14: Naming hierarchy (4)

6 Information model description

This clause provides a high-level informal description of the customer administration information model.

Subclause 6.1 contains a brief description for each object class used in the model covering:

- the purpose of the object class;
- the attributes defined for the object class; and

customer-Observation

- the relationship of the object class to other object classes.

Attributes which are common to several object classes are described in subclause 6.2.

Subclause 6.3 describes actions which are influencing several object classes in the information model.

Subclause 6.4 describes the common aspects of the notifications used in the information model.

6.1 Object class descriptions

This subclause is divided into subclauses in which the object classes of the information model are described, where they are not described in other documents. In these cases, references are given.

In the tables listing the attributes of the object classes, the attributes inherited from

CCITT Recommendation X.721 [53]: top are not mentioned explicitly, although they are present in these object classes as defined in CCITT Recommendation X.721 [53].

6.1.1 Managed element

The managedElement object class represents the location where the Q3 interface and its associated resources are provided. This managed object class is defined in CCITT Recommendation M.3100 [45].

6.1.2 Access port fragment

6.1.2.1 Access port

The accessPort object class is defined in ITU-T Recommendation Q.824.0 [46]. It represents the resource concept and is used to identify the resource capabilities supporting a customer services. The resource abstraction is defined as the trail termination points that terminates trails between the switching network element and the customer premise equipment. These trail termination points send the signalling and service information to the customer.

6.1.2.2 ETSI access port

The etsiAccessPort is derived from ITU-T Recommendation Q.824.0 [46]: accessPort. It represents the resource concept and is used to identify the resource capabilities supporting a customer services.

Both etsiDirectoryNumberE164 and etsiAccessPort have the conditional package meteringCounterPkg containing the meteringCounter attribute. This package shall only be instantiated with one of these two object classes or their subclasses within the same managed element.

Within one network operators environment preferably only one of those two possibilities of instantiating the meteringCounterPkg should be chosen.

This object class is not instantiated.

Table 1: ETSI access port

	Name	M/C/O	Value Set
meteringCounter		С	single
localDefinedNumber		0	single
meteringCounter localDefinedNumber	gives the current value of the metering counter for charging. is an identifier for the access port that is used if in a configuration the port itself is not associated with a E.164 directory number.		

6.1.2.3 ETSI access port analogue

The etsiAccessPortAnalogue object class is the conventional two-wire loop access to a basic telephone set.

It is derived from etsiAccessPort. It represents the resource concept and is used to identify the resource capabilities supporting a customer services.

This information model only covers the aspect of relationship of a customer configuration to a semi permanent connection. The semi permanent connection as such might e.g. be modelled by using the M3100: crossConnection object class or a subclass of it. If the semi permanent connection as such is managed by this means, the semipermanentLine attribute should not be used. Instead, the information whether a customer configuration is involved in a semi permanent line can be retrieved by reading the crossConnectionObjectPointer attribute.

The Q.824.0 [46]: officeEquipment attribute shall be used to identify special types of line cards, e.g. such providing a third wire, or DSL capability, etc.

	Name	M/C/O	Value Set
lineSignalling		М	single
lineCharacteristics		М	single
semipermanentLine		С	single
lineSignalling	specifies which signalling the analogue access port uses for the line (e.g. Dual Tone Multi Frequency (DTMF) or pulse dialling).		
lineCharacteristics	specifies the transmission characterist The following values shall be assigned 0: short line (with attenuation) 1: long line (without attenuation) Other values are for implementation sp	ics of the anal l: pecific use.	ogue line (e.g. attenuation).
semipermanentLine	indicates whether this entity is related to a semipermanent line (TRUE) or not (FALSE).		

Table 2: ETSI access port analogue

6.1.2.4 ETSI access port digital

The etsiAccessPortDigital object class represents the termination of any non-ISDN digital access.

It is derived from etsiAccessPort. It represents the resource concept and is used to identify the resource capabilities supporting a customer services.

No specific attributes were identified.

6.1.2.5 ETSI access port ISDN basic rate

The etsiAccessPortISDNBasicRate is derived from etsiAccessPort. It represents the resource concept and is used to identify the resource capabilities supporting a customer services.

The etsiAccessPortISDNBasicRate object class supports up to 2 B-channels of 64 kbit/s for transfer of information and data and 1 D-channel of 16 kbit/s for signalling and data transfer (2 B + D).

Table 3: ETSI access port ISDN basic rate

	Name	M/C/O	Value Set
dChannelLayer1Activation		М	single
dChannelLayer2Activation		М	single
dChannelLayer1Activation,	specifies whether layers one and/or two have to be held active.		eld active.
dChannelLayer2Activation			

6.1.2.6 ETSI access port ISDN primary rate

The etsiAccessPortISDNPrimaryRate is derived from etsiAccessPort. It represents the resource concept and is used to identify the resource capabilities supporting a customer services.

The etsiAccessPortISDNPrimaryRate object class supports up to 30 B-channels of 64 kbit/s for transfer of information and data and 1 D-channel of 64 kbit/s for signalling and data transfer (30 B + D).

	Name	M/C/O	Value Set
dChannelLayer2Activation		М	single
dChannelLayer2Activation	specifies whether layer two has to be h	eld active.	

Table 4: ETSI access port ISDN primary rate

6.1.2.7 Access channel

The accessChannel object class is defined in ITU-T Recommendation Q.824.0 [46]. It represents an individual ISDN B-channel or D-channel of an ISDN access port or an individual channel of a digital access port. This object class is a specialization of the bi-directional connection termination point object class defined in CCITT Recommendation M.3100 [45].

The number of access channels belonging to an access port depends on the access port architecture. This object class may be related to a set of customizedResource when services shall be provisioned on a per access channel basis.

6.1.2.8 ETSI access channel

The etsiAccessChannel is derived from ITU-T Recommendation Q.824.0 [46]: accessChannel. It represents an individual ISDN B-channel or D-channel of an ISDN access port or an individual channel of a digital access port.

It identifies the set of attributes which apply in common to all types of ISDN and digital access channels. Instances of this object class are contained within ISDN or digital access ports.

This information model only covers the aspect of relationship of a customer configuration to a semi permanent connection. The semi permanent connection as such might e.g. be modelled by using the

CCITT Recommendation M.3100 [45]: crossConnection object class or a subclass of it. If the semi permanent connection as such is managed by this means, the semipermanentLine attribute should not be used. Instead, the information whether a customer configuration is involved in a semi permanent line can be retrieved by reading the crossConnection object pointer attribute.

Table 5: ETSI access channel

Name		M/C/O	Value Set
channelType		М	single
semipermanentLine		С	single
channelType	specifies the channel type (e.g. ISDN I	D-channel, nor	n-ISDN channel).
semipermanentLine	indicates whether this entity is related to a semipermanent line (TRUE) or not		
	(FALSE).		

6.1.2.9 Access port profile

The accessPortProfile object class is defined in ITU-T Recommendation Q.824.0 [46].

The accessPortProfile object class (and its subclasses) represents those aspects of an exchange access that cannot be configured until subscription at which time the mode in which the access port is to be used by the customer is known.

6.1.3 V5 interface fragment

ETS 300 377-1 [59] covers the configuration management of V5 interfaces and associated customer profiles. Since the customer administration related part of it was based on I-ETS 300 291 which is replaced by the present document, hereafter a re-definition of the affected object classes is given. The corresponding labels are extended by "R1".

6.1.3.1 Virtual access port

A virtualAccessPortR1 is an object class representing an image of the customer access port which is located in an AN and connected to the LE via V5 interface. It is a subclass of etsiAccessPort and used for provisioning services to the customer.

The upstreamConnectivityPointer and the downstreamConnectivityPointer attributes have NULL value.

The inherited operationalStatePackage is mandatory in this object class.

The operationalState attribute indicates whether or not the user port is able to provide its service to the customer's terminal equipment. It reflects the states of the user port Finite State Machine (FSM) in the LE according to annex A of ETS 300 377-1 [59].

An access port may have assigned one or more bearer time slots and/or one or more C-paths providing transport for different data types (bearer, signalling, f-type, p-type). The operationalState attribute shall be set to "enabled" as long as the port has access to any service, and if there are no other contradictory conditions.

The operationalState attribute shall be set to "disabled" if an access port has no service at all, i.e. the V5 interface itself or the related ISDN Ds or the PSTN C-path has failed.

The assocV5Interface attribute gives the relation to the V5 interface, that virtual access port is assigned to. It is a group relationship attribute according to CCITT Recommendation X.732 [57]. The V5 interface is the owner object.

The relationships are maintained by use of the setReciprocalPointers and releaseReciprocalPointers actions of the v5Interface object class.

If the CCITT Recommendation M.3100 [45]: tmnCommunicationsAlarmInformationPackage is instantiated, then the communicationsAlarm notification shall be used to report errors related to this object class. The errors to be reported and the usage of the alarm report parameters are specified in ETS 300 379-1 [61].

This object class is subclassed for the different types of virtual access ports and not instantiated within the scope of this application.

Table 6: Virtual access port

	Name	M/C/O	Value Set
"ETS 300 377-1 (1995)" [59]: assocV5Interface		М	single
assocV5Interface gives the relation to the V5 interface, that virtua a group relationship attribute according to CCIT		nat virtual acce g to CCITT Re	ess port is assigned to. It is commendation X.732 [57].
	The V5 interface is the owner object.		

6.1.3.2 Virtual analogue access

A virtualAnalogueAccessR1 is an information entity used for the association of a PSTN customer's layer 3 port address with a V5.1/V5.2 interface. It is a specialization of the virtualAccessPortR1 object class.

If no virtualAccessChannelR1 object instance is contained in the virtualAnalogueAccessR1 object instance in the case of a V5.1 interface, the assocV5TimeSlot attribute points to the associated V5 time slot object instance. Otherwise it has NULL value. It is a peer relationship according to CCITT Recommendation X.732 [57]. The V5 time slot is provider.

Table 7: Virtual analogue access

	Name	M/C/O	Value Set
"ETS 300 377-1 (1995)" [59]: lay	er3PortAddress	М	single
"ETS 300 377-1 (1995)" [59]: as	socV5TimeSlot	М	single
lineSignalling		М	single
semipermanentLine		С	single
layer3PortAddress	gives the layer 3 port address the analogue access is assigned to.		
assocV5TimeSlot	points to the associated V5 time slot object instance in the case of a V5.1 interface. It is a peer relationship according to CCITT Recommendation X.732 [57].		
lineSignalling	specifies which signalling the analogue access port uses for the line (e.g. Dual Tone Multi Frequency (DTMF) or pulse dialling).		
semipermanentLine	indicates whether this entity is related to (FALSE).	to a semiperm	anent line (TRUE) or not

6.1.3.3 Virtual basic rate access

A virtualBasicRateAccessR1 is an information entity used for the association of an envelope function address representing an ISDN basic access with a V5.1/V5.2 interface. It is a specialization of the virtualAccessPortR1 object class.

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I	Name		Value Set
dChannelLayer1Activation		М	single
dChannelLayer2Activation		Μ	single
"ETS 300 377-1 (1995)" [59]: enve	elopeFunctionAddress	М	single
"ETS 300 377-1 (1995)" [59]: asso	cV5TimeSlotB1	Μ	single
"ETS 300 377-1 (1995)" [59]: asso	cV5TimeSlotB2	Μ	single
"ETS 300 377-1 (1995)" [59]: asso	clsdnSignallingCommPath	Μ	single
"ETS 300 377-1 (1995)" [59]: asso	cPacketCommPath	Μ	single
"ETS 300 377-1 (1995)" [59]: asso	cFrameCommPath	М	single
dChannelLayer1Activation,	specifies whether layers one and/or two	o have to be h	eld active.
dChannelLayer2Activation			
envelopeFunctionAddress	gives the envelope function address th	e basic acces	s is assigned to.
assocV5TimeSlotB1,	indicates for B-channel 1 or 2 the asso	ciated V5 time	e slot object instance, if no
assocV5TimeSlotB2	virtual access channel object instance	is contained ir	n the virtual basic rate
	access object instance in the case of a	V5.1 interface	e. It is a peer relationship
	according to CCITT Recommendation	X.732 [57].	
assocIsdnSignallingCommPath	points to the associated ISDN commun	nication path c	arrying the signalling
	messages of the assigned ISDN access. It is a group relationship according to		
	CCITT Recommendation X.732 [57]. T	he ISDN comr	nunication path is owner.
assocPacketCommPath	points to the associated ISDN commun	ication path c	arrying the D-channel
	packet mode data of the assigned ISD	N access if the	e customer has subscribed
to this service. It is a group relationship		according to	
CCITT Recommendation X.732 [57]. The ISDN communication path is		nunication path is owner.	
assocFrameCommPath	points to the associated ISDN commun	ication path c	arrying the D-channel frame
	mode data of the assigned ISDN acces	ss if the custor	ner has subscribed to this
	service. It is a group relationship accor	ding to	
	CCITT Recommendation X.732 [57]. T	he ISDN comr	nunication path is owner.

6.1.3.4 Virtual Leased Access

A virtualLeasedAccessR1 is an information entity used for the association of a single analogue or digital semipermanent leased line or a multiple digital semipermanent leased line configuration with a V5.1/V5.2 interface. It is a specialization of the virtualAccessPortR1 object class.

If it is a single semipermanent leased line, and if no virtualAccessChannelR1 object instance is contained in the virtualLeasedAccessR1 object instance, and if it is associated with a V5.1 interface, the assocV5TimeSlot attribute points to the associated V5 Time Slot object instance. Otherwise it has NULL value. It is a peer relationship according to CCITT Recommendation X.732 [57]. The relationship shall be maintained by use of the setReciprocalPointer and releaseReciprocalPointer actions of the V5 Interface object class.

A virtualLeasedAccessR1 object instance representing a single semipermanent leased line shall contain either no or one object instance. In a multiple semipermanent leased line configuration, the virtualLeasedAccessR1 object instance shall contain the appropriate number of virtualAccessChannelR1 object instances.

The v5UserPortAddress attribute gives for a single semipermanent leased line the layer 3 port address the access is assigned to, otherwise it gives the envelope function address.

	Name	M/C/O	Value Set
"ETS 300 377-1 (1995)" [59]: v5UserPortAddress		М	single
"ETS 300 377-1 (1995)" [59]: assocV5TimeSlot		М	single
v5UserPortAddress	gives for a single semipermanent leased line the layer 3 port address the accest is assigned to, otherwise it gives the envelope function address.		
assocV5TimeSlot	points to the associated V5 Time Slot object instance in the case of a V5.1 interface. It is a peer relationship according to CCITT Recommendation X.732 [57].		e in the case of a V5.1

Table 9: Virtual Leased Access

6.1.3.5 Virtual primary rate access

A virtualPrimaryRateAccessR1 is an information entity used for the association of an envelope function address representing an ISDN primary rate access with a V5.2 interface. It is a specialization of the virtualAccessPortR1 object class.

	Name	M/C/O	Value Set
dChannelLayer2Activation	dChannelLayer2Activation		single
"ETS 300 377-1 (1995)" [59]: enve	elopeFunctionAddress	М	single
"ETS 300 377-1 (1995)" [59]: asso	oclsdnSignallingCommPath	Μ	single
"ETS 300 377-1 (1995)" [59]: asso	ocPacketCommPath	Μ	single
"ETS 300 377-1 (1995)" [59]: asso	pcFrameCommPath	Μ	single
dChannelLayer2Activation	specifies whether layer two has to be h	eld active.	
envelopeFunctionAddress	gives the envelope function address th	e primary rate	access is assigned to.
assocIsdnSignallingCommPath	points to the associated ISDN commun	nication path c	arrying the signalling
	messages of the assigned ISDN acces	s. It is a group	o relationship according to
	CCITT Recommendation X.732 [57]. T	he ISDN comr	nunication path is owner.
assocPacketCommPath	points to the associated ISDN commun	nication path c	arrying the D-channel
	packet mode data of the assigned ISDN access if the customer has subscribed		
	to this service. It is a group relationship according to		
CCITT Recommendation X.732 [57]. T		he ISDN comr	nunication path is owner.
assocFrameCommPath points to the associated ISDN commu		ication path c	arrying the D-channel frame
	mode data of the assigned ISDN access if the customer has subscribed to this		
	service. It is a group relationship according to		
	CCITT Recommendation X.732 [57]. T	he ISDN comr	nunication path is owner.

Table 10: Virtual primary rate access

6.1.3.6 Virtual access channel

A virtualAccessChannelR1 is an object class representing an individual ISDN B-/D-channel of an ISDN access port, or the bearer channel for an analogue access port, or an individual channel of an access port for a semipermanent leased line. It is a subclass of etsiAccessChannel.

Table 11: Virtual access channel

	Name	M/C/O	Value Set
"ETS 300 377-1 (1995)" [59]: per	manentLineReservation	М	single
"ETS 300 377-1 (1995)" [59]: assocV5TimeSlot		М	single
permanentLineReservation assocV5TimeSlot	indicates whether this access channel points to the associated V5 time slot of ISDN B-channel or a channel of a non- interface. It is a peer relationship accol CCITT Recommendation X.732 [57].	is reserved as bject instance ISDN access rding to	permanent line or not. if the channel type is an in the case of a V5.1

6.1.3.7 V5 bearer channel reservation

The assignment of a V5 bearer channel reservation object instance to a customized resource indicates that a fixed assignment of bearer channels of a V5.2 interface is made for a customer. Which V5 time slot is assigned is controlled by the resource manager but visible at the Q3 interfaces.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 12: V5 bearer channel reservation

Name		M/C/O	Value Set
"ETS 300 377-1 (1995)" [59]: noOfBcRequested		М	single
"ETS 300 377-1 (1995)" [59]: bcReserved		М	set
noOfBcRequested	noOfBcRequested indicates the number of bearer channels requested for reservation.		or reservation.
bcReserved	indicates in a set of octets 3 and 4 of V5 time slot identification information		entification information
	elements which time slots are actually assigned by the BCC protocol.		

6.1.3.8 V5 leased line reservation

The assignment of a V5 leased line reservation object instance to a customized resource indicates that a fixed assignment of the bearer channel of a V5 interface is made for a customer. It is used either for analogue semipermanent leased lines without signalling or for digital semipermanent leased lines without signalling. Which V5 time slot in the case of a V5.2 interface is assigned is controlled by the resource manager but visible at the Q3 interface.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 13: V5 leased line reservation

Name		M/C/O	Value Set
"ETS 300 377-1 (1995)" [59]: bcReserved		М	set
bcReserved indicates in a set of octets 3 and 4 of V5 time slot Identification information			entification information
	elements which time slots are actual assigned by the BCC protocol.		

6.1.4 Directory number fragment

6.1.4.1 Directory number

The directoryNumber object class is a resource in its own right. It is a constituent part of the user interface and is directly related to one or more dialling plans being part of the managed element. DNs may be assigned to an individual customer independently of the access port architecture and subscription service type. A directoryNumber object instance may be associated with one or more customerProfile object instances. A directoryNumber object instance may be associated with several customizedResource instances. This association is used to represent the services and ports provisioned for the directory number.

The directoryNumber object class is defined in ITU-T Recommendation Q.824.0 [46]. It has no instantiations of itself.

6.1.4.2 ETSI directory number E.164

The etsiDirectoryNumberE164 represents directory numbers belonging to the ISDN numbering plan defined in CCITT Recommendation E.164 [43].

Both etsiDirectoryNumberE164 and etsiAccessPort have the conditional package meteringCounterPkg containing the meteringCounter attribute. This package shall only be instantiated with one of these two object classes or their subclasses within the same managed element.

Within one network operator's environment preferably only one of those two possibilities of instantiating the meteringCounterPkg should be chosen.

	Name	M/C/O	Value Set
etsiE164DirectoryNumber		М	single
"ITU-T Recommendation Q.824.	0 [46]": interceptTreatmentTerm	М	single
meteringCounter		С	single
routeingInformation		С	single
etsiE164DirectoryNumber	represents the ISDN number according	to the ISDN i	numbering plan defined in
	CCITT Recommendation E.164 [43]. It	is composed	of two fields:
	country code (optional);		
	national significant number.		
	The national significant number is itsel	f composed of	two fields:
national destination code (optional);			
	customer number.		
interceptTreatmentTerm	reatmentTerm specifies the treatment (e.g. announcement) to be provided for an unconnect		ovided for an unconnected
	directory number.		
meteringCounter	gives the current value of the metering counter for charging.		
routeingInformation	gives the directory number porting information. If this attribute is empty string,		
	the directory number is not ported. If it has NULL value, the routeing information		
	is to be retrieved from another server (e.g. IN SCP). In all other cases, the		
	information relevant for routeing is give	en.	

Table 14: ETSI directory number E.164

6.1.4.3 Directory number X.121

The directoryNumberX121 object class characterizes the ITU-T Recommendation X.121 [51] packet switched directory number resource.

The directoryNumberX121 object class is defined in ITU-T Recommendation Q.824.0 [46].

6.1.5 Customer profile fragment

6.1.5.1 Customer profile

The customerProfile object class 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) assigned to an individual customer, 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 customerProfile object and an accessPortProfilePointerList attribute that represents access port profile(s) also assigned to the customerProfile object.

The customerProfile object class is defined in ITU-T Recommendation Q.824.0 [46].

6.1.5.2 ETSI customer profile

The ETSI customer profile object class provides a single point of reference for a customer's installation to one or more ISDN, analogue, and/or digital lines. An instance of a etsiCustomerProfile subclass may be related to zero, one, or more instances of accessPortProfile and/or one instance of etsiDirectoryNumberE164.

The etsiCustomerProfile object class is not instantiated.

3	3

Table 15:	ETSI	customer	profile
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	Name	M/C/O	Value Set
customerType		М	single
customerCategory		М	single
"CCITT Recommendation X.721:	1992" [53]: administrativeState	Μ	single
"EN 300 292 (1998)" [42]: originF	orRouteing	С	single
originForCharging		С	single
"EN 300 292 (1998)" [42]: originF	orAnalysis	С	single
customerType	specifies whether the customer profile is for a single line or for a multi-line		
customerCategory	The customer category attribute identifies the customer as being for instance: a standard customer; a coin box; a mobile customer; a test equipment; an operator, etc.		
administrativeState	is defined in CCITT Recommendation X.721 [53]. It indicates the current administrative state of the customer profile.		
originForRouteing	groups customer profiles for call routeing purposes as defined in EN 300 292 [42].		
originForCharging	groups customer profiles for charging a	and/or tariffing	purposes.
originForAnalysis	groups customer profiles for digit analysis purposes within the call routeing context as defined in EN 300 292 [42].		

6.1.5.3 Analogue customer profile

This object class is the reference point for the services, directory numbers, and access ports being part of the related profile. Only accessPortAnalogue or virtualAnalogueAccessR1 shall be associated via the appropriate accessPortProfile instances with this object class.

No specific attributes were identified.

6.1.5.4 ISDN customer profile

This object class is the reference point for the services, directory numbers, and access ports being part of the related profile. Only accessPortISDNBasicRate / accessPortISDNPrimaryRate or virtualBasicRateAccessR1 / virtualPrimaryRateAccessR1 shall be associated via the appropriate accessPortProfile instances with this object class.

No specific attributes were identified.

Table '	16:	ISDN	customer	profile
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Nam	M	I/C/O	Value Set
connectionType		С	single
connectionType inc	tes whether it is a point to point or a po	oint to mu	ultipoint configuration.

6.1.5.5 Customized Resource

The customizedResource object class is defined in ITU-T Recommendation Q.824.0 [46].

6.1.5.6 ETSI customized Resource

The etsiCustomizedResource object class allows refinement of the service provisioning for a customer. It allows association of a set of services to:

- one or more access ports;
- one or more DNs;
- one or more access channels.

The channels may span more than one access port. The etsiCustomizedResource object class also allows association between DNs and access ports without any services associated with them.

The etsiCustomizedResource object class is needed when a service is applicable only to a subset of access ports, access channels or DNs. It is not needed when all the services specified are applicable to all the access ports, access channels and DNs.

	Name	M/C/O	Value Set
supplementaryServiceServiceDe	pendentPtrList	М	set
supplementaryServiceServiceIndependentPtrList		М	set
directionality		С	single
connectionType		С	single
supplementaryService-	points to the associated supplementaryServiceServiceDependent object		
ServiceDependentPtrList	instances.		
supplementaryService-	points to the associated supplementaryServiceServiceIndependent object		eIndependent object
ServiceIndependentPtrList	instances.		
directionality	indicates the directionality (incoming, outgoing, bothways).		ays).
connectionType	indicates whether it is a point to point or a point to multipoint configuration.		Itipoint configuration.

Table 17: ETSI customized Resource

6.1.6 Bearer service fragment

6.1.6.1 Bearer service

This object class is defined in ITU-T Recommendation Q.824.0 [46].

This object class contains the characteristics common to all bearer services as defined in CCITT Recommendation I.210 [44]. A bearer service may be associated with a set of supplementary services.

This object class is not instantiated.

6.1.6.2 ETSI bearer service

This object class is derived from ITU-T Recommendation Q.824.0 [46]: bearerService.

The ITU-T Recommendation Q.824.0 [46]: numberOfChannelsPkg and the ITU-T Recommendation Q.824.0 [46]: bearerSignallingPkg shall not be instantiated with subclasses of this object class.

The references of its subclasses to the service describing standards are given in annex A.

This object class is not instantiated.

6.1.6.3 Circuit mode 3,1 kHz audio

This object class is a specialization of the etsiBearerService object class and defines the "3,1 kHz audio" bearer service.

Table 18: Circuit mode 3,1 kHz audio

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.	1 (1996)" [47]: networkProvidedTone	С	single
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
networkProvidedTone	indicates that tones and/or announcerr indicate the progress or otherwise the	nents are to be status of a cal	provided by the network to
maxNumOfInfoChannels	xNumOfInfoChannels gives the maximum number of information channels.		
maxNumOfTotalCalls	gives the maximum number of total cal	lls.	

6.1.6.4 Circuit mode 64 kbit/s unrestricted

This object class is a specialization of the etsiBearerService object class and defines the "64 kbit/s unrestricted" bearer service.

	Name	M/C/O	Value Set
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
maxNumOfInfoChannels	gives the maximum number of informa	tion channels.	
maxNumOfTotalCalls	gives the maximum number of total cal	ls.	

6.1.6.5 ETSI packet B channel

This object class is a specialization of the etsiBearerService object class and defines the packet mode bearer service running over a B channel.

According to ETS 300 007 [62], the value of the notificationClass attribute shall be restricted to noNotificationClass and conditionalNotification respectively.

Table 20: ETSI packet B channel

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.	1 (1996)" [47]: notificationClass	С	single
"ITU-T Recommendation Q.824.	1 (1996)" [47]: layer2InfoEntityPtr	С	single
"ITU-T Recommendation Q.824.	1 (1996)" [47]: layer3InfoEntityPtr	С	single
maxNumOfInfoChannels		С	single
notificationClass	indicates whether the packet mode be or "conditionalNotification" respective	earer service is ly.	with "noNotificationClass"
layer2InfoEntityPtr, point to the appropriate "ITU-T Recommendation Q.824.0 (1996)" [46]:		324.0 (1996)" [46]:	
ayer3InfoEntityPtr layerEntity subclass instance.			
maxNumOfInfoChannels gives the maximum number of information channels.			

6.1.6.6 ETSI packet D channel

This object class is a specialization of the etsiBearerService object class and defines packet mode bearer service running over a D channel.

According to ETS 300 007 [62], the value of the notificationClass attribute shall be restricted to noNotificationClass and conditionalNotification respectively.

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.1	(1996)" [47]: notificationClass	С	single
"ITU-T Recommendation Q.824.1	(1996)" [47]: layer2InfoEntityPtr	С	single
"ITU-T Recommendation Q.824.1	(1996)" [47]: layer3InfoEntityPtr	С	single
notificationClass	indicates whether the packet mode bea	arer service is	with "noNotificationClass"
	or "conditionalNotification" respectively	<i>'</i> .	
layer2InfoEntityPtr,	nfoEntityPtr, point to the appropriate "ITU-T Recommendation Q.824.0 (1996)" [46]:		
layer3InfoEntityPtr	layerEntity subclass instance.		

Table 21: ETSI packet D channel

6.1.6.7 Layer entity

The layerEntity object class is defined in ITU-T Recommendation Q.824.0 [46].

Its subclasses layerEntityLAPB, layerEntityLAPD, layerEntityX25PLP, and layerEntityX25PLPShared are defined in ITU-T Recommendation Q.824.1 [47].

6.1.6.8 Multiple rate unrestricted

This object class is a specialization of the etsiBearerService object class and defines the "multiple rate unrestricted" bearer service.

Table 22: I	Multiple rate	unrestricted
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Name		M/C/O	Value Set
maxNumOfInfoChannels		С	single
maxNumOfInfoChannels	gives the maximum number of information channels.		

6.1.6.9 Speech

This object class is a specialization of the etsiBearerService object class and defines the "speech" bearer service.

Table 23: Speech

Name		M/C/O	Value Set
"ITU-T Recommendation Q.824.1 (1996)" [47]: networkProvidedTone		С	single
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
networkProvidedTone	indicates that tones and/or announcements are to be provided by the network to indicate the progress or otherwise the status of a call.		
maxNumOfInfoChannels maxNumOfTotalCalls	gives the maximum number of information channels. gives the maximum number of total calls.		

6.1.6.10 Unrestricted digital info with tones / announcements (7 kHz audio)

This object class is a specialization of the etsiBearerService object class and defines the "unrestricted digital info with tones / announcements" bearer service.

Table 24: Unrestricted digital info with tones / announcements (7 kHz audio)

Name		M/C/O	Value Set
"ITU-T Recommendation Q.824.1 (1996)" [47]: networkProvidedTone		С	single
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
networkProvidedTone	indicates that tones and/or announcements are to be provided by the network to indicate the progress or otherwise the status of a call.		
maxNumOfInfoChannels maxNumOfTotalCalls	gives the maximum number of information channels. gives the maximum number of total calls.		

6.1.7 Teleservice fragment

6.1.7.1 Teleservice

This object class is defined in ITU-T Recommendation Q.824.0 [46].

It contains the characteristics common to all teleservices as defined in CCITT Recommendation I.210 [44]. A teleservice may or may not be associated with a set of supplementary services.

This object class is not instantiated.
6.1.7.2 ETSI teleservice

This object class is derived from "ITU-T Recommendation Q.824.0 [46]": teleservice.

The "ITU-T Recommendation Q.824.0 [46]": cataloguedTeleservicePtrPkg and the "ITU-T Recommendation Q.824.0 [46]": layerInfoPkg shall not be instantiated with subclasses of this object class.

The bearerServicePtr attribute shall only point to object instances representing bearer services which are permitted to be related to a teleservice represented by the instance of this object class, regarding EN 300 196-1 [1]. Otherwise, it shall be empty string.

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The references of its subclasses to the service describing standards are given in annex A.

This object class is not instantiated.

6.1.7.3 Telefax group 4

This object class is a specialization of the etsiTeleservice object class and defines the telefax group 4 teleservice.

6.1.7.4 Telephony 3,1 kHz

This object class is a specialization of the etsiTeleservice object class and defines the telephony 3,1 kHz teleservice.

Table 25: Telephony 3,1 kHz

	Name	M/C/O	Value Set
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
maxNumOfInfoChannels	els gives the maximum number of information channels.		
maxNumOfTotalCalls	axNumOfTotalCalls gives the maximum number of total calls.		

6.1.7.5 Telephony 7 kHz

This object class is a specialization of the etsiTeleservice object class and defines the telephony 7 kHz teleservice.

Table 26: Telephony 7 kHz

	Name	M/C/O	Value Set
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
maxNumOfInfoChannels	gives the maximum number of information channels.		
maxNumOfTotalCalls	gives the maximum number of total calls.		

6.1.7.6 Videotelephony

This object class is a specialization of the etsiTeleservice object class and defines the videotelephony teleservice.

Table 27: Videotelephony

	Name	M/C/O	Value Set
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
maxNumOfInfoChannels	OfInfoChannels gives the maximum number of information channels.		
maxNumOfTotalCalls	gives the maximum number of total calls.		

6.1.7.7 Videotex

This object class is a specialization of the etsiTeleservice object class and defines the videotex teleservice.

Table 28: Videotex

	Name	M/C/O	Value Set
maxNumOfInfoChannels		С	single
maxNumOfTotalCalls		С	single
maxNumOfInfoChannels	gives the maximum number of informa	tion channels.	
maxNumOfTotalCalls	gives the maximum number of total cal	ls.	

6.1.8 Service dependent supplementary service fragment

A supplementary service is considered being service dependent, if it is configurable on a per teleservice and/or bearer service basis according to the underlying service definitions. Configurability does not only mean the presence of attributes, but may as well be given by presence or absence of respective supplementary service instances in a service configuration.

If in future additional requirements arise, the need might occur to redefine a supplementary service given hereafter as service independent.

It is to be regarded that services defined hereafter may apply both to ISDN and PSTN.

6.1.8.1 Supplementary service - service dependent

This object class is defined in ITU-T Recommendation Q.824.0 [46].

It represents the supplementary services providing additional capabilities to be used with a basic telecommunication service.

This object class is not instantiated.

6.1.8.2 Customized supplementary service

This object class is derived from "ITU-T Recommendation Q.824.0 (1996)" [46]: supplementaryServiceServiceDependent.

It represents the supplementary services providing additional capabilities to be used with a basic telecommunication service. It may represent:

- an ISDN supplementary service as defined in ETSI;
- a CEPT supplementary service as defined in the CEPT Handbook on services and facilities [58];
- a non-standard supplementary service, i.e. operator-specific service.

A customized supplementary service may be related with a bearer service or teleservice thereby supplementing this service.

The references of its subclasses to the service describing standards are given in annex A.

This object class is not instantiated.

Table 29: Customized supplementary service

Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.0 (1996)" [46]:	М	set
customizedResourcePtrList		
customizedResourcePtrList is a set-valued attribute whose value(s) points to the	associated
customizedResource object instances.		

6.1.8.3 Absent customer fixed announcement

The absent customer fixed announcement supplementary service provides the possibility for a subscriber to divert his incoming calls to a fixed announcement.

This object class is derived from customizedSupplementaryService.

Table 30: Absent customer fixed announcement

	Name	M/C/O	Value Set
customerControlPermission		С	single
serviceActivated		С	single
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.4 Absent customer operator position

The absent customer operator position supplementary service provides the possibility for a subscriber to divert his incoming calls to an operator position.

This object class is derived from customizedSupplementaryService.

Table 31: Absent customer operator position

	Name	M/C/O	Value Set
forwardImmediately		М	single
customerControlPermission		С	single
serviceActivated		С	single
forwardImmediately	indicates call forward immediately (TRUE) or call forward on no reply (FALSE).		ward on no reply (FALSE).
customerControlPermission	indicates whether a customer is allowed to activate / deactivate a service		deactivate a service
	allowing for customer control.		
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.5 Absent customer predetermined announcement

The absent customer fixed predetermined announcement supplementary service provides the possibility for a subscriber to divert his incoming calls to a predetermined announcement.

This object class is derived from customizedSupplementaryService.

	Name	M/C/O	Value Set
announcementNumber		М	single
customerControlPermission		С	single
modificationPermission		С	single
serviceActivated		С	single
announcementNumber	gives the announcement number (INTEGER). Which announcement corresponds with an announcement number is a matter of local implementation.		
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
modificationPermission	indicates whether a customer is allowed to modify a service allowing for customer control.		
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.6 Advice of charge: charging information at call set-up time

This supplementary service provides the served user with information about the charging rates at call establishment. In addition, the served user shall be informed if a change in charging rates takes place during the call. The information can be sent for all calls, or on a per call basis. The charge information given shall relate to the charges incurred on the network to which the served user is attached.

This object class is derived from customizedSupplementaryService.

Table 33: Advice of charge: charging information at call set-up time

	Name	M/C/O	Value Set
adviceOfChargeActivation		М	single
adviceOfChargeActivation	is a flag indicating whether the service	is available fo	r all calls automatically or
	on a per call basis.		

6.1.8.7 Advice of charge: charging information at the end of the call

This supplementary service provides the served user with charging information for a call when the call is terminated. The information can be sent for all calls, or on a per call basis. The charge information given relates to the charges incurred on the network to which the served user is attached.

This object class is derived from customizedSupplementaryService.

Table 34: Advice of charge: charging information at the end of the call

	Name	M/C/O	Value Set
adviceOfChargeActivation		М	single
adviceOfChargeActivation	is a flag indicating whether the service	is available fo	r all calls automatically or
	on a per call basis.		

6.1.8.8 Advice of charge: charging information during the call

This supplementary service provides the served user with cumulative charging information during the call. The information can be sent for all calls, or on a per call basis. The charge information given relates to the charges incurred on the network to which the served user is attached.

This object class is derived from customizedSupplementaryService.

Table 35: Advice of charge: charging information during the call

	Name	M/C/O	Value Set
adviceOfChargeActivation		М	single
adviceOfChargeActivation	is a flag indicating whether the service	is available for	r all calls automatically or
-	on a per call basis.		

6.1.8.9 Blocking

This object class gives the reason(s) for which a subscriber or a service is blocked. The accessibility of e.g. emergency numbers during blocking conditions is an implementation matter.

It is derived from customizedSupplementaryService.

Table 36: Blocking

	Name	M/C/O	Value Set
adminBlocking		М	single
maintBlocking		M	single
accountSuspension		M	single
catastrophe		M	single
adminBlocking	gives the blocking direction for administrative blocking (none, incoming, outgoing, bothways).		
maintBlocking	gives the blocking status for maintenance blocking.		
accountSuspension	gives the blocking direction for blocking due to non-payment.	g (none, incom	ning, outgoing, bothways)
catastrophe	indicates the preference category of th	e access durir	ng catastrophe.

6.1.8.10 Call deflection

This service enables the subscriber to respond to an incoming call by requesting redirection of that call to another subscriber.

This object class is derived from customizedSupplementaryService.

Table 37: Call deflection

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.2	(1996)" [48]: deflectingNumberDelivery	М	single
etsiDeflectingNumberNotification		М	single
deflectingNumberDelivery	is a Boolean attribute indicating the subscription option of allowing wheth serviced user is permitted to release his directory number to the deflected terminal (TRUE) or not (FALSE).		on of allowing whether the a mber to the deflected-to
etsiDeflectingNumberNotification	tification indicates the subscription option of whether a calling user receives notific that his call has been deflected (1) or not (0). In the case the use is to be notified, the deflected to number may be sent to the originator of the call		user receives notification case the use is to be originator of the call (2).

6.1.8.11 Call forwarding busy

This supplementary service permits a served user to have the network send all incoming calls, which meet busy and are addressed to the served user's number, to another number. The served user's originating service is unaffected.

This object class is derived from customizedSupplementaryService.

Table 38: Call forwarding busy

	Name	M/C/O	Value Set
etsiE164DirectoryNumber		М	single
callForwardActiveNotification		М	single
callForwardCallingNotification		М	single
callForwardReleaseNotification		М	single
callForwardServedNotification		М	single
customerControlPermission		С	single
modificationPermission		С	single
serviceActivated		С	single
etsiE164DirectoryNumber	represents the ISDN number according	g to the ISDN i	numbering plan defined in
	CCITT Recommendation E.164 [43]. It	is composed	of two fields:
	country code (optional);		
	national significant number.		
	The national significant number is itsel	f composed of	two fields:
	national destination code (optional);		
	customer number.		
callForwardActiveNotification	is a flag indicating whether the served active.	user is to be n	otified that call forwarding is
callForwardCallingNotification	is a flag indicating whether the calling	user is to be n	otified that his call has been
5	forwarded.		
callForwardReleaseNotification	is a flag indicating whether served use	r releases nun	nber information to
	forwarded-to user.		
callForwardServedNotification	is a flag indicating whether served use	r receives noti	fication that a call has been
	forwarded.		
customerControlPermission	indicates whether a customer is allowe	d to activate /	deactivate a service
	allowing for customer control.		
modificationPermission	indicates whether a customer is allowe	d to modify a	service allowing for
	customer control.		
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.12 Call forwarding unconditional

This supplementary service permits a served user to have the network send all incoming calls addressed to the served user's number, to another number. The served user's originating service is unaffected. If this service is activated, calls are forwarded no matter what the condition of the termination.

This object class is derived from customizedSupplementaryService.

Table 39: Call forwarding unconditional

	Name	M/C/O	Value Set
etsiE164DirectoryNumber		М	single
callForwardActiveNotification		М	single
callForwardCallingNotification		М	single
callForwardReleaseNotification		М	single
callForwardServedNotification		M	single
customerControlPermission		С	single
modificationPermission		С	single
serviceActivated		С	single
etsiE164DirectoryNumber	represents the ISDN number according	g to the ISDN i	numbering plan defined in
	CCITT Recommendation E.164 [43]. It	is composed	of two fields:
	country code (optional);		
	national significant number.		
	The national significant number is itsel	t composed of	two fields:
	national destination code (optional);		
	customer number.		
callForwardActiveNotification	active.	user is to be n	lotified that call forwarding is
callForwardCallingNotification	is a flag indicating whether the calling	user is to be n	otified that his call has been
Ŭ	forwarded.		
callForwardReleaseNotification	is a flag indicating whether served use	r releases nun	nber information to
	forwarded-to user.		
callForwardServedNotification	is a flag indicating whether served use	r receives noti	fication that a call has been
	forwarded.		
customerControlPermission	indicates whether a customer is allowe	d to activate /	deactivate a service
	allowing for customer control.		
modificationPermission	indicates whether a customer is allowe	d to modify a	service allowing for
	customer control.		
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.13 Call forwarding no reply

This supplementary service permits a served user to have the network send all incoming calls, which meet no reply and are addressed to the served user's number, to another number. The served user's originating service is unaffected.

This object class is derived from customizedSupplementaryService.

Table 40: Call forwarding no reply

	Name	M/C/O	Value Set
etsiE164DirectoryNumber		М	single
callForwardActiveNotification		Μ	single
callForwardCallingNotification		М	single
callForwardReleaseNotification		М	single
callForwardServedNotification		М	single
customerControlPermission		С	single
modificationPermission		С	single
serviceActivated		C	single
etsiE164DirectoryNumber	represents the ISDN number according	to the ISDN i	numbering plan defined in
	CCITT Recommendation E.164 [43]. It	is composed	of two fields:
	country code (optional);		
	national significant number.		
	I ne national significant number is itsel	r composed of	two fields:
	national destination code (optional);		
a all Earn ward A ative Nia tification	customer number.		atified that call ferring diag
callForwardActiveNotification	active.	user is to de n	otified that call forwarding is
callForwardCallingNotification	is a flag indicating whether the calling	user is to be n	otified that his call has been
collEonwordPoloosoNotification	is a flag indicating whether served use	r rologoog pur	abor information to
call of wardivelease Notification	forwarded-to user.	Teleases Hull	
callForwardServedNotification	is a flag indicating whether served use	r receives noti	fication that a call has been
au atoma rControl Dormingion	indicates whether a sustamer is allows	d to optivato /	depetivete e convice
customerControlPermission	indicates whether a customer is allowe	u to activate /	deactivate a service
modification	allowing for customer control.	d to modify o	onvice ellewing for
mouncation enflission	customer control	u to modify a s	service allowing for
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (EALSE)
SEIVICEACIIVALEU	indicates whether the service is activat		HOL(FALGE).

6.1.8.14 Call hold

This supplementary service allows a user to interrupt communications on an existing call and then subsequently, if desired, re-establish communications.

No specific attributes were identified.

This object class is derived from customizedSupplementaryService.

6.1.8.15 Call waiting

This supplementary service permits a user to be informed of an incoming call with an indication when all access to the user is busy. The user then has the choice of accepting, rejecting, or ignoring the waiting call.

This object class is derived from customizedSupplementaryService.

Table 41: Call waiting

	Name	M/C/O	Value Set
callWaitingCallingNotification		М	single
maxNumberOfWaitingCalls		М	single
customerControlPermission		С	single
serviceActivated		С	single
callWaitingCallingNotification	is a flag indicating whether the calling user is to be notified that his call is waiting.		
maxNumberOfWaitingCalls	gives the maximum number of calls that	at can be waiti	ng.
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.16 Calling line identification presentation

This supplementary service 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 will deliver the calling line identity to the called party during call establishment, regardless of the terminal capability to handle the information.

No specific attributes were identified.

This object class is derived from customizedSupplementaryService.

6.1.8.17 Calling line identification restriction

This supplementary service 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 calling line identification presentation supplementary service then the called party receives an indication that the calling party information is not available due to restriction.

This object class is derived from customizedSupplementaryService.

Table 42: Calling line identification restriction

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.8	24.2 (1996)" [48]: callIdRestrictionOptions	М	single
callIdRestrictionOptions	RestrictionOptions gives the options for the calling line identification restriction.		triction.

6.1.8.18 Closed user group subscription option

The CUG subscription options object shall 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, shall be rejected. The value of attribute preferredCUGIndex should not be NULL when interCUGAccess value is 'none' or 'incomingAccess'.

This object class is derived from customizedSupplementaryService.

Table 43: Closed user group subscription option

	Name	M/C/O	Value Set
preferredCUGIndex		М	single
interCUGAccess		М	single
preferredCUGIndex	is used to identify the required CUG in the absence of a CUG index being included in the outgoing call request.		
interCUGAccess	indicates the inter-CUG access of per service subscription option in ETS 300 136 [25]. The values are none, outgoingAccess, incomingAccess and outgoingAndIncomingAccess.		

6.1.8.19 Completion of call on no reply

This supplementary service permits a user A, encountering a destination B, which does not answer the call (no reply), to be notified when the destination B becomes free after having terminated an activity, and to have the network reinitiate the call to the specified destination B if user A desires.

This object class is derived from customizedSupplementaryService.

Table 44: Completion of call on no reply

	Name	M/C/O	Value Set
callCompletionNoReplyRecallMode		С	single
callCompletionNoReply- RecallMode	is a flag indicating whether a completion of calls on no replying customer rec is offered to the termination which activated the service or to all compatible		o replying customer recall ice or to all compatible
	terminations.		

6.1.8.20 Completion of calls to busy subscriber

This supplementary service enables a calling user, encountering a busy destination, to have the call completed when the busy destination becomes not busy, without having to make a new call attempt.

This object class is derived from customizedSupplementaryService.

Table 45: Completion of calls to busy subscriber

Name	M/C/O	Value Set
callCompletionBusyRecallMode	С	single
callCompletionBusyRecallMode is a flag indicating whether a comple offered to the termination which activ terminations.	 is a flag indicating whether a completion of calls to busy subscribers recall i offered to the termination which activated the service or to all compatible terminations. 	

6.1.8.21 Conference call add-on

The Conference call add-on object class is used to indicate that the customer is authorized to use the conference call add-on supplementary service.

This object class is derived from customizedSupplementaryService.

No specific attributes were identified.

6.1.8.22 Connected line identification presentation

The colpSupplService object class represents a supplementary service offered for the calling party, which indicates the called party at the calling party. The COLP supplementary service is service dependent.

No specific attributes were identified.

This object class is derived from customizedSupplementaryService.

6.1.8.23 Connected line identification restriction

The COLR supplementary service enables the connected party to prevent presentation of its directory number to the calling party. The COLR supplementary service is applicable to all telecommunication services.

This object class is derived from customizedSupplementaryService.

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.2	2 (1996)" [48]: callIdRestrictionOptions	М	single
callIdRestrictionOptions	gives the options for the calling line ide restricted FALSE: presentation not restricted.	entification res	triction. TRUE: presentation

6.1.8.24 Explicit call transfer

The explicit call transfer managed object class is used to indicate that the customer is authorized to use the explicit call transfer supplementary service.

This object class is derived from customizedSupplementaryService.

No specific attributes were identified.

6.1.8.25 Fixed destination call

This object class is used to administer the fixed destination call (hot line) service both with or without the possibility of administration via customer controlled input.

For administration controlled service operation, the instantiation of the object is initiated by the OS. The values of the attributes variant and fixedDestinationNumber shall be set at creation, but may afterwards be modified by the OS.

In the case of service operation by the customer on service provision basis, the instantiation of the object is as well initiated by the OS to indicate that the customer has the authorization to use the service. The value of the variant attribute shall be set at creation by the OS according to the service subscription. The value of the fixedDestinationNumber attribute shall be set to NULL. The value of this attribute shall be modified by the resource management of the exchange on the customer input of the service control operation.

If the service is available generally for all subscribers without previous arrangement with the network operator, the resource shall create an object instance according to the customer input of the service control operation (i.e. registration and/or activation). The values of the variant and fixedDestinationNumber attributes shall be set by the resource management of the exchange according to the access code and destination number used in the customer input of the service control operation.

It is left to individual implementations whether the service assignment by the OS or the customer's activation in the case of a generally available service has priority.

This object class is derived from customizedSupplementaryService.

	Name	M/C/O	Value Set
variant		М	single
fixedDestinationNumber		М	single
customerControlPermission		С	single
modificationPermission		С	single
serviceActivated		С	single
variant	identifies whether the call is forwarded	to the fixed de	estination immediately
fixedDestinationNumber	(TRUE) or after time out (FALSE). gives the directory number to which the means that calls are not to be forwarde the customer by remote control change	e call shall be t ed to a fixed de es its value to a	forwarded. Its value NULL estination unless the OS or a directory number.
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	ed to activate /	deactivate a service
modificationPermission	indicates whether a customer is allowe customer control.	d to modify a s	service allowing for
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.26 Incoming call barring

With this object class, incoming call barring is assigned. It may activate as well a do-not-disturb announcement.

This object class is derived from customizedSupplementaryService.

Table 48: Incoming call barring

	Name	M/C/O	Value Set
doNotDisturb		М	single
customerControlPermission		С	single
serviceActivated		С	single
doNotDisturb	indicates whether the do-not-disturb announcement is activated (TRUE) or not (FALSE).		
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.27 Interception of calls

This object class allows an interception of calls on a per-service basis.

It is derived from customizedSupplementaryService.

Table 49: Interception of calls

Name		Value Set
interceptionReason		single
"ITU-T Recommendation Q.824.0 (1996)" [46]: interceptTreatmentTerm	М	single
interceptionReason gives the reason for the interception.		
interceptTreatmentTerm specifies the treatment (e.g. announce	ement) to be pr	ovided.

6.1.8.28 Malicious call identification

This supplementary service allows a subscriber to start up the tracing of the malicious call originator.

Since due to legal and network operator's requirements the format of the malicious call identification notification may vary from country to country, this notification shall be defined with an implementation specific subclass.

This object class is derived from customizedSupplementaryService.

Table 50: Malicious call identification

Name		M/C/O	Value Set
"ITU-T Recommendation Q.824.2	(1996)" [48]: automaticInvocation	0	single
automaticInvocation controls the activation of Malicious Cal		I Identification	so that calls that are not
	answered will be traced automatically.		

6.1.8.29 Outgoing call barring

With this object class, outgoing call barring with fixed and/or user controlled program is assigned. The barring program may cover as well subscriber controlled input restrictions.

This object class is derived from customizedSupplementaryService.

Table 51: Outgoing call barring

	Name	M/C/O	Value Set
fixedPrograms		М	set
userControlledPrograms		М	set
customerControlPermission		С	single
serviceActivated		С	single
fixedPrograms	gives the assigned fixed barring progra	ams.	
userControlledPrograms	gives the barring programs assigned b	y user control.	
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.30 Subaddressing

The subaddressing object class is used to indicate that the called customer is authorized to use the subaddressing supplementary service.

This object class is derived from customizedSupplementaryService.

No specific attributes were identified.

6.1.8.31 Terminal portability

This supplementary service allows a user engaged in an active call to adjourn communication by an appropriate signalling procedure and resume the call at a later time.

No specific attributes were identified.

This object class is derived from customizedSupplementaryService.

6.1.8.32 Three party

This supplementary service enables a user to establish a three-way conversation, i.e. a simultaneous communication between the user and two other parties.

No specific attributes were identified.

This object class is derived from customizedSupplementaryService.

6.1.8.33 User to user signalling

This supplementary service permits a user to send / receive a limited amount of information to/from another user over the signalling channel in association with a call to the other user.

This object class is derived from customizedSupplementaryService.

Table	52:	User	to	user	signalling
-------	-----	------	----	------	------------

	Name	M/C/O	Value Set
uusService1Implicit		М	single
uusService1Explicit		М	single
uusService2		М	single
uusService3		М	single
uusService1Implicit	indicates whether the service is available	ole (TRUE) or	not (FALSE) during
	origination and termination of calls by i	means of an ir	nplicit request.
uusService1Explicit	indicates whether the service is available	ole (TRUE) or	not (FALSE) during
	origination and termination of calls by i	means of an ir	nplicit request.
uusService2	is a flag indicating whether the service	is available (T	RUE) or not (FALSE) after
	the calling user has received an indica	tion that the ca	alled user is being informed
	of the call and prior to the establishme	nt of the conne	ection.
uusService3	is a flag indicating whether the service	is available (T	RUE) or not (FALSE) only
	during the connection is established.		

6.1.8.34 Voice messaging busy

The voice messaging busy supplementary service allows the customer to activate a centralized voice messaging system to collect voice messages for calls which meet busy.

This object class is derived from customizedSupplementaryService.

Table 53: Voice messaging busy

	Name	M/C/O	Value Set
voiceMessagingNumber		С	single
mwiReceiverPointer		С	single
customerControlPermission		С	single
serviceActivated		С	single
voiceMessagingNumber	gives the routeing information (director the voice messaging system.	y number) to t	he voice messaging box in
mwiReceiverPointer	gives the associated mwiReceiver inst	ance.	
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.35 Voice messaging no reply

The voice messaging no reply supplementary service allows the customer to activate a centralized voice messaging system to collect voice messages for calls which meet no reply.

This object class is derived from customizedSupplementaryService.

Table 54: Voice messaging no reply

	Name	M/C/O	Value Set
voiceMessagingNumber		С	single
mwiReceiverPointer		С	single
customerControlPermission		С	single
serviceActivated		С	single
voiceMessagingNumber	gives the routeing information (director the voice messaging system.	y number) to t	he voice messaging box in
mwiReceiverPointer	gives the associated mwiReceiver inst	ance.	
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	d to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.8.36 Voice messaging unconditional

The voice messaging unconditional supplementary service allows the customer to activate a centralized voice messaging system to collect voice messages for all calls no matter what the condition of the termination is.

This object class is derived from customizedSupplementaryService.

Table 55: Voice messaging unconditional

Name		M/C/O	Value Set
voiceMessagingNumber		С	single
mwiReceiverPointer		С	single
customerControlPermission		С	single
serviceActivated		С	single
voiceMessagingNumber	gives the routeing information (director the voice messaging system.	ry number) to t	he voice messaging box in
mwiReceiverPointer	gives the associated mwiReceiver inst	ance.	
customerControlPermission	indicates whether a customer is allowe allowing for customer control.	ed to activate /	deactivate a service
serviceActivated	indicates whether the service is activat	ed (TRUE) or	not (FALSE).

6.1.9 Service independent supplementary service fragment

A supplementary service is considered being service independent, if it is applicable to multiple services in a uniform manner according to the underlying service definitions.

If in future additional requirements arise, the need might occur to redefine a supplementary service given hereafter as service dependent.

It is to be regarded that services defined hereafter may apply both to ISDN and PSTN.

6.1.9.1 Supplementary service - service independent

This object class is defined in ITU-T Recommendation Q.824.0 [46].

It represents the supplementary services providing additional capabilities to be used independent from a basic telecommunication service.

The references of its subclasses to the service describing standards are given in annex A.

This object class is not instantiated.

6.1.9.2 ETSI supplementary service - service independent

This object class is derived from "ITU-T Recommendation Q.824.0 (1996)" [46]: supplementaryServiceServiceIndependent.

It represents the supplementary services providing additional capabilities to be used with a basic telecommunication service. It may represent:

- an ISDN supplementary service as defined in ETSI;
- a CEPT supplementary service as defined in the CEPT Handbook on services and facilities [57];
- a non-standard supplementary service, i.e. operator-specific service.

The references of its subclasses to the service describing standards are given in annex A.

This object class is not instantiated.

Table 56: ETSI supplementary service - service independent

	Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.0 (1996)" [46]:		М	set
customizedResourcePtrList			
customizedResourcePtrList is a set-valued attribute whose value(s)) points to the	associated
	customizedResource object instances.		

6.1.9.3 Abbreviated dialling

This managed object class is used to indicate that the customer is authorized to use the abbreviated dialling supplementary service.

This object class shall be instantiated either with the ownedListPkg or the sharedListPkg. This choice is exclusive.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 57: Abbreviated dialling

	Name	M/C/O	Value Set
ownedList		С	set
listShared		С	single
maxNumberOfEntries		С	single
sharedList		С	set
ownedList	it gives an owned list.		
listShared	indicates whether the owned list is sha	red (TRUE) or	not (FALSE).
maxNumberOfEntries	gives the maximum number of entries	for abbreviate	d dialling.
sharedList	is a pointer to one or more object insta	nces of abbre	viatedDialling representing
	a shared list.		

6.1.9.4 Alarm call

The alarm call supplementary service provides the possibility for a user to cause an alarm call or calls to be made to his line at the time or times specified in advance to him, and to hear an appropriate announcement when the call is answered.

An instance of this object class shall be automatically deleted if all related alarm calls are performed and if it is contained in a customer configuration.

Its failedAlarmCall notification indicates directory number, date, time and reason of unsuccessful alarm calls (e.g. due to absent subscriber, busy line, etc.).

More than one instance of alarmCall may exist for a specific customer profile.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

Table 58: Alarm call

	Name	M/C/O	Value Set
timeOfDay		М	single
kindOfAlarmCall		M	single
alarmCallType		М	single
timeOfDay	gives the time of day (hours and minut	es) for the exe	ecution of the alarm call.
kindOfAlarmCall	gives the kind of alarm call (manual, a	utomatic, semi	automatic).
alarmCallType	gives the type of alarm call (casual, regular consecutive days, regular specified		tive days, regular specified
	days) and the related program if the ty	pe is not casu	al.

6.1.9.5 Closed user group

The managed object class is used to store the closed user group general subscription options.

The attribute cUGIndex shall be explicitly assigned upon object creation.

No two instances of object class etsiCUG contained within a single object shall have identical values for attribute cUGIndex.

No two instances of object class etsiCUG contained within a single object shall have identical values of attribute cUGInterlockCode and cUGDataNetworkIdentification.

When the value of attribute cUGBarring is outBarred, this CUG shall not be a preferential closed user group (denoted by attribute preferredCUGIndex in cUGSubscriptionOption managed object).

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 59: Closed user group

	Name	M/C/O	Value Set
cUGIndex		М	set
cUGInterlockCode		М	set
cUGDataNetworkIdentification		М	set
cUGBarring		М	set
cUGIndex	gives the index of the closed user group particular CUG when originating a call.	ip. It is used by	y the calling user to select a
cUGInterlockCode	gives the interlock code of the closed u identifying a CUG membership within t	iser group. Th he network.	e attribute is a means of
cUGDataNetworkIdentification	is the information signalled during set- conjunction with the cUGInterlockCode international network. It can be though	up of a CUG c e) to uniquely i t of as the area	all and serves (in dentify the CUG in the a code of the CUG.
cUGBarring	maintains the intra-CUG restriction of t ETS 300 136 [25]. It may have one of t incomingCallsBarred or outgoingCallsB	he general sul he following v Barred.	bscription option in alues: none,

6.1.9.6 Cordless terminal mobility

The cordless terminal mobility service allows users of cordless terminals to be mobile within and between networks. Where radio coverage is provided and the cordless terminal has appropriate access rights the user is able to make calls from, and to receive calls at, any location within the fixed public and/or private networks, and may move without interruption of a call in progress.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

Table 60: Cordless terminal mobility

	Name	M/C/O	Value Set
ctmld		М	single
permittedMobileArea		М	single
ctmld	provides the relevant data for the searc configuration.	ch of DECT te	rminals being part of a CTM
permittedMobileArea	gives the area of the network in which calls.	the DECT terr	ninal can make and receive

6.1.9.7 Customer observation

The customer observation service activates the recording of call details e.g. for verification of the increments to the metering counter of the customer, supervision purposes, quality of service verification, etc.

The format of the customer observation records is an implementation matter, since e.g. due to legal requirements it may vary from network operator to network operator.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

Table 61: Customer observation

	Name	M/C/O	Value Set
observationMode		0	single
observationMode	distinguishes between e.g. charging of quality of service verification, or betwe outgoing calls, etc. Which observation attribute number is a matter of local im	bservation, exp en observation mode corresp plementation.	pensive call monitoring, and n of incoming calls and/or onds with the value of this

6.1.9.8 Detailed billing

The service of detailed billing gives the customer the possibility of being billed with a complete detail of the originated traffic. The completeness of the data presented on the bill depends on the detail class subscribed by the customer or available in the network and/or exchange.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 62: Detailed billing

	Name	M/C/O	Value Set
detailClass		М	single
detailClass	defines the detail class for the detailed e.g. to international calls, national long successful calls.	billing service distance calls	e. This detail can be limited s, special service calls,

6.1.9.9 Different ringing

The differentRinging managed object class is used to allocate different directory numbers to a single analogue access. For calls to such an access, different ringing signals (e.g. different sequences) are to be sent to the customer installation, according to the directory number dialled by the calling party.

It is to be considered that the assigned port must be capable to provide the different ringing. This object class shall only be assigned to non-ISDN customer configurations.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 63: Different ringing

Name		M/C/O	Value Set
primaryDN		М	single
ringingSequence		М	single
primaryDN	defines whether the line is a primary (TRUE) or secondary (FALSE) line of the customer.		
ringingSequence	defines the characteristics of the ringin	g signal to be	sent.

6.1.9.10 Direct dialling in

The direct dialling in supplementary service enables a user to call directly via a public ISDN a user on a private ISDN by use of the public ISDN numbering plan.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

Table 64: Direct dialling in

Name	M/C/O	Value Set
"ITU-T Recommendation Q.824.2 (1996)" [48]:		single
numOfDigitsNotToTransmit		
numOfDigitsNotToTransmit gives the number of digits not to be transmitted to a PABX.		PABX.

6.1.9.11 General facility reset

The general facility reset object class is used to indicate that the customer is authorized to use the general facility reset supplementary service.

The general facility reset supplementary service allows a customer to deactivate with one subscriber controlled input command (SCI) a number of supplementary services.

The supplementary services to be deactivated as a result of the SCI can be network operator dependent.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

No specific attributes were identified.

6.1.9.12 Home meter

The homeMeter managed object class is used to assign to a customer configuration the transmission of metering pulses to the customer premises.

This object class shall only be assigned to non-ISDN customer configurations. It is to be considered that the assigned port must be capable to provide the installation in the customer's premises with the metering pulses.

No specific attributes were identified.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

6.1.9.13 Message waiting indication controller

This service permits a user to activate and deactivate the message waiting indication of a user which supports the voice messaging supplementary service. The user of this object class is likely to be a voice mail box.

No specific attributes were identified.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

6.1.9.14 Message waiting indication receiver

This service permits a user to receive changes to the condition of a message waiting indicator. The user of this object class is likely to be subscribed to a voice messaging service which forwards calls to a voice mail box.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

Table 65: Message waiting indication receive
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Name		M/C/O	Value Set
mwilnvocationMode		М	single
messageWaitingIndicator		М	single
mwiControllingUser		С	single
mwiInvocationMode	Indicates when the service is to be invocated either when the receiving user makes an outgoing call or on activation of the service (by the controlling user).		
messageWaitingIndicator mwiControllingUser	Indicates if one or more messages are waiting for the receiving user. Gives the controlling user number.		

6.1.9.15 Multiple subscriber number

The MSN supplementary service provides the possibility for assigning multiple directory numbers (not necessarily consecutive) to a customer configuration. This enables the selection of one or more 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 from the least significant digit up to the full ISDN number (see CCITT Recommendation E.164 [43]). The digit(s) significant for terminal differentiation shall be an integral part of the ISDN numbering scheme.

- NOTE 1: Within a private ISDN, multiple subscriber number digits may be different from the digits of the public ISDN number. This additional possibility, if provided, has no impact on the public ISDN.
- NOTE 2: More than one multiple subscriber number may be assigned to one terminal.
- NOTE 3: The actual method of relating the ISDN number to a particular terminal is a matter of national implementation.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

Table 66: Multiple subscriber number

	Name	M/C/O	Value Set
assocDefaultDN		М	single
assocDefaultDN	gives the default directory number for a	an MSN config	juration.

6.1.9.16 Personal Identification Number

The pin managed object class is used to assign a PIN to one or more supplementary services to prevent from their unauthorized use.

The initial value and the default value of the pin attribute is determined by the network element resource on its own.

The PIN given in the pin attribute is valid for all PIN controlled customized services assigned to a customer configuration identified by the PIN profile reference.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 67: Personal Identification Number

	Name	M/C/O	Value Set
pin		М	single
pinProfileRef		М	single
pin	contains the PIN. The initial value and determined by the network element res	the default val source on its o	lue of this attribute is wn.
pinProfileRef	identifies the PIN controlled customized services assigned to a customer configuration for which the PIN given in the pin attribute is valid. It is a choice between an INTEGER representing pre-defined profiles on exchange level an SET OF ObjectClass representing supplementary service object classes.		igned to a customer ute is valid. It is a choice les on exchange level and a rvice object classes.

6.1.9.17 Preselected carrier supplementary service

This object class is used for assignment of a preselected carrier to a customer configuration.

It is derived from etsiSupplementaryServiceServiceIndependent.

Name		M/C/O	Value Set
preselectedCarrier		М	set
modificationPermission		С	single
preselectedCarrier	gives the preselected carrier. A carrierType value shall only appear once in this attribute.		
modificationPermission	indicates whether a customer is allowed to modify a service allowing for customer control.		

6.1.9.18 Priority

This supplementary service is used to assign priority to some or all access ports of the related customer profile e.g. to override traffic controls assigned to non-priority traffic.

No specific attributes were identified.

6.1.9.19 Remote control of supplementary service

This supplementary service enables a user to control a supplementary service or a number of supplementary services associated with that user's configuration from another access using the procedures provided for the (supplementary) service(s) to be controlled at the served user's access. Remote control service can be invoked independently of the state of the served user's access, and existing calls at the served user's access shall not be affected by the invocation of the remote control service.

It is a subclass of etsiSupplementaryServiceServiceIndependent.

Table 69: Remote control of supplementary service

	Name	M/C/O	Value Set
remotelyControlledService callDiversionRestrictions		сc	single single
remotelyControlledService	indicates which supplementary service remote control.	s the served u	ser has subscribed for
callDiversionRestrictions	indicates whether the forwarded-to number specified at remote activation shall have some restrictions (choice within a specified geographical area or belonging to a list of predetermined forwarded-to numbers) or not.		

6.1.9.20 Semi permanent connection

This information model only covers the aspect of relationship of a customer configuration to a semi permanent connection. The semi permanent connection as such might e.g. be modelled by using the M3100: crossConnection object class or a subclass of it. If the semi permanent connection as such is managed by this means, the semipermanentLine attribute of etsiAccessPortAnalogue / virtualAnalogueAccessR1 should not be used. Instead, the information whether a customer configuration is involved in a semi permanent line can be retrieved by reading the crossConnection object pointer attribute.

6.1.9.21 Terminating calls not charged

The supplementary service terminating calls not charged is a service associated with the called party.

Calls to a directory number with this service will not be charged.

To prevent the charging in the originating exchange in case of an incoming terminating call, the terminating exchange will, if the signalling system supports it, send a backward signal "no charge" and provide for the answer signal or, in case the signalling system does not support the sending of information that the call is not to be charged, withhold the answer signal.

No specific attributes were identified.

This object class is derived from etsiSupplementaryServiceServiceIndependent.

6.1.10 General services

The object classes given hereafter are placeholders for methods of general service provision to all customer configurations accessed to an exchange. With the catalogued service object classes, superclasses are provided for teleservice and supplementary service facilities to be configured on exchange base. Appropriate subclasses may be derived from them. The service container object classes are superior object classes for e.g. supplementary services defined in the present document, which may be subject to be provided on a general base to all customer configurations.

6.1.10.1 Catalogued supplementary service

This object class is defined in ITU-T Recommendation Q.824.0 [46].

The catalogued supplementary service managed object class is a superclass for other service subclasses that have attributes that are not customizable by the customer. The subclasses will be defined once candidates for the non-customizable attributes have been identified.

This object class is not instantiated.

6.1.10.2 Catalogued teleservice

This object class is defined in ITU-T Recommendation Q.824.0 [46].

The catalogued teleservice managed object class defines a communication service that makes available layer 4 - layer 7 capabilities. and has attributes that are not customizable by the customer. This object class is a superclass from which specific catalogued teleservice objects may be derived as subclasses.

This object class is not instantiated.

6.1.10.3 General ISDN service container

The General ISDN service container is the superior object class for supplementary services available to all ISDN customer configurations.

It is to be considered that a service configuration within a customer configuration overrides this general service configuration.

This object class shall only be used for the general provision of services for which the resource (i.e. the exchange) is capable to provide them generally on exchange level.

	Name	M/C/O	Value Set
serviceContainerId		М	single
generalServiceList		0	single
serviceContainerId	gives the RDN.		
generalServiceList	lists the services having no configurable attributes which are available generally		
	for the respective customer configurations.		

Table 70: General ISDN service container

6.1.10.4 General PSTN service container

The General PSTN service container is the superior object class for supplementary services available to all PSTN customer configurations.

It is to be considered that a service configuration within a customer configuration overrides this general service configuration.

This object class shall only be used for the general provision of services for which the resource (i.e. the exchange) is capable to provide them generally on exchange level.

	Name	M/C/O	Value Set
serviceContainerId		М	single
generalServiceList		0	single
serviceContainerId	gives the RDN.		
generalServiceList	lists the services having no configurable attributes which are available generally for the respective customer configurations.		

Table 71: General PSTN service container

6.1.10.5 Non ISDN service

The non ISDN service object class is defined to allow the creation of specific supplementary services for analogue customer profiles.

Name		M/C/O	Value Set
nonIsdnServiceId		М	single
"CCITT Recommendation X.721 [53]: 1992": administrativeState		М	single
"ITU-T Recommendation Q.824.0 (1996)" [46]:		М	set
customizedResourcePtrList			
nonIsdnServiceId	gives the RDN.		
administrativeState	is defined in CCITT Recommendation X.721 [53]. It indicates the current		
	administrative state of the non ISDN service.		
customizedResourcePtrList	is a set-valued attribute whose value(s) points to the associated		
customizedResource object instances.			

Table 72: Non ISDN service

6.1.11 Service provision fragment

6.1.11.1 Service manager

The serviceManager is a support object that is needed complete the exchange provisioning without a detailed knowledge of the provisioning model. The serviceManager is a superclass object that can be subclassed to support specific actions for specific functions or technologies. The serviceManager is used in conjunction with servicePackage object instances to perform these actions. The servicePackage contains instances of managed objects with initial values that are used in creating all or part of a customer's service. If resource managed object classes are included in a servicePackage, then their attributes (e.g., etsiE164DirectoryNumber attribute of the etsiDirectoryNumberE164 object or the officeEquipment attribute of the accessPort object) must have dummy values. The actual values are taken from the ACTION parameters. Knowledge of the serviceManager or service packages used to create the customer service is not retained. Different service packages may be defined by service providers to meet specific business requirements.

Service packages that can be defined for a particular serviceManager must only use those parameters that are defined in the Action of that serviceManager. If additional input parameters are required, a new subclass of serviceManager has to be created.

These service packages are defined using the same object classes as in the model providing service definitions.

The serviceManager object class is defined in ITU-T Recommendation Q.824.0 [46].

6.1.11.2 Configuration service manager

The configurationServiceManager object class is derived from ITU-T Recommendation Q.824.0 [46]: serviceManager.

The configurationServiceManager performs actions which establish customer configurations and services. In addition, the configurationServiceManager performs actions which change directory number and access port assignments.

No specific attributes were identified.

6.1.11.3 Service package

This object class is used to group instances of different object classes that are used to provide initial values for attributes of service objects created by the serviceManager object class.

The servicePackage object class is defined in ITU-T Recommendation Q.824.0 [46].

6.1.11.4 Reference service configuration

The referenceServiceConfiguration object class is derived from ITU-T Recommendation Q.824.0 [46]: servicePackage.

An instance of this object class contains reference profiles for service assignments which are referenced in ACTIONS on an instance of configurationServiceManager. If the override attribute is not empty set, an addServiceToConfiguration action shall replace an instance of a service defining object class indicated in this attribute if this object class is part of the contained profile. Else, an existing instance of a service defining object class shall not be replaced. In both cases, no error information shall be indicated.

Table 73: Reference service configuration

	Name	M/C/O	Value Set
override		0	set
override	identifies whether an instance of a service defining object class indicated in this attribute shall be replaced by an addServiceToConfiguration action if this object class is part of the contained profile. The instantiation of conditional packages is considered in this attribute as an option.		

6.2 Attributes description

This subclause provides the description of all generic attributes used within the customer administration model. It is to be regarded that they are either inherited from superclasses, or attributes defined in the present document are derived from them.

6.2.1 Relative distinguished name

The semantics of the RDN attribute type are specified in CCITT Recommendation X.720 [52]. This attribute type is used to identify an instance of a managed object uniquely within the scope of its immediate superior in the management information tree.

6.2.2 Relationship attributes

Relationship attributes of managed objects for customer administration conform to the generic relationship model as defined by CCITT Recommendation X.732 [57]. In general the group relationship is utilized.

6.2.3 State attributes

State related attributes of managed objects in this information model comprise the generic state model as defined by CCITT Recommendation X.731 [56].

6.2.4 Counter

The counter attribute is defined in CCITT Recommendation X.721 [53].

6.3 Actions description

The following actions are defined within the present document:

Table 74: Actions description

Action	Purpose
addServiceToConfiguration	This action is used to add service instances to a customer configuration.
changeAccessPort	This action is used to change the accessPort for a given customer profile.
changeDirectoryNumber	This action is used to change the etsiE164DirectoryNumber for a given customer profile.
establishCustomerConfiguration	This action is used to create all instances relevant for a single line access.

6.4 Notifications description

The following generic notifications will be utilized by the customer administration:

- object creation according to CCITT Recommendations X.721 [53] and X.730 [55];
- object deletion according to CCITT Recommendations X.721 [53] and X.730 [55];
- attribute value change according to CCITT Recommendations X.721 [53] and X.730 [55];
- state change according to CCITT Recommendations X.721 [53] and X.731 [56];
- relationship change according to CCITT Recommendations X.721 [53] and X.732 [57].

It is to be considered that in most cases these notifications applying to the object classes defined in the present document are inherited from their superclasses defined in the ITU-T Q.824 Recommendation series.

The following specific notification will be utilized by the customer administration:

- failedAlarmCall.

The failedAlarmCall notification indicates directory number, date, time and reason of unsuccessful alarm calls (e.g. due to absent subscriber, busy line, etc.).

7 Formal object class definitions

7.1 Definition of object classes

7.1.1 Managed element

The managedElement object class is defined in CCITT Recommendation M.3100 [45].

7.1.2 Access port fragment

7.1.2.1 Access port

The accessPort object class is defined in ITU-T Recommendation Q.824.0 [46].

```
etsiAccessPort MANAGED OBJECT CLASS
    DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)": accessPort;
    CHARACTERIZED BY
    etsiAccessPortPkg PACKAGE
        BEHAVIOUR
        etsiAccessPortBhv BEHAVIOUR
        DEFINED AS "It represents the resource concept and is used to identify the resource
        capabilities supporting a customer services.
        Both etsiDirectoryNumberE164 and etsiAccessPort have the conditional package
        meteringCounterPkg containing the meteringCounter attribute. This package shall only be
        instantiated with one of these two object classes or their subclasses within one managed
        element.";;;;;
    CONDITIONAL PACKAGES
        meteringCounterPkg
        PRESENT IF "an instance supports it and if this package is not instantiated with
        etsiDirectoryNumberE164 or its subclasses within the same managed element",
        localDefinedNumberPkg
        PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 1};
```

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7.1.2.3 ETSI access port analogue

```
etsiAccessPortAnalogue MANAGED OBJECT CLASS
   DERIVED FROM etsiAccessPort;
   CHARACTERIZED BY
    etsiAccessPortAnaloguePkg PACKAGE
        BEHAVIOUR
        etsiAccessPortAnalogueBhv BEHAVIOUR
        DEFINED AS "It is the conventional two-wire loop access to a basic telephone set.
        It represents the resource concept and is used to identify the resource capabilities
        supporting a customer services.
        The Q.824.0:officeEquipment attribute shall be used to identify special types of line cards,
        e.g. such providing a third wire, or ... DSL capability, etc. ";;
        ATTRIBUTES
        lineSignalling
                                DEFAULT VALUE
                                CustomerAdminModuleV2.lineSignallingDefault
                                GET-REPLACE,
        lineCharacteristics
                                DEFAULT VALUE
                                CustomerAdminModuleV2.lineCharacteristicsDefault
                                GET-REPLACE;;;
   CONDITIONAL PACKAGES
        semipermanentLinePkg
        PRESENT IF "this entity may be related to a semipermanent line and it is required in the
        customer configuration";
REGISTERED AS {ocaManagedObjectClass 2};
```

7.1.2.4 ETSI access port digital

```
etsiAccessPortDigital MANAGED OBJECT CLASS
DERIVED FROM etsiAccessPort;
CHARACTERIZED BY
etsiAccessPortDigitalPkg PACKAGE
BEHAVIOUR
etsiAccessPortDigitalBhv BEHAVIOUR
DEFINED AS "It represents the termination of any non-ISDN digital access. It represents the
resource concept and is used to identify the resource capabilities supporting a customer
services.";;;;
REGISTERED AS {ocaManagedObjectClass 3};
```

7.1.2.5 ETSI access port ISDN basic rate

etsiAccessPortISDNBasicRate MANAGED OBJECT CLASS DERIVED FROM etsiAccessPort; CHARACTERIZED BY etsiAccessPortISDNBasicRatePkg PACKAGE BEHAVIOUR etsiAccessPortISDNBasicRateBhv BEHAVIOUR DEFINED AS "It represents the resource concept and is used to identify the resource capabilities supporting a customer services. The etsiAccessPortISDNBasicRate object class supports up to 2 B-channels of 64 kbit/s for transfer of information and data and 1 D-channel of 16 kbit/s for signalling and data transfer (2 B + D).";; ATTRIBUTES DEFAULT VALUE dChannelLaver1Activation CustomerAdminModuleV2.dChannelActivationDefault GET-REPLACE. dChannelLaver2Activation DEFAULT VALUE CustomerAdminModuleV2.dChannelActivationDefault GET-REPLACE;;;

REGISTERED AS {ocaManagedObjectClass 4};

7.1.2.6 ETSI access port ISDN primary rate

```
etsiAccessPortISDNPrimaryRate MANAGED OBJECT CLASS
   DERIVED FROM etsiAccessPort;
   CHARACTERIZED BY
    etsiAccessPortISDNPrimaryRatePkg PACKAGE
        BEHAVIOUR
        etsiAccessPortISDNPrimaryRatePkgBhv BEHAVIOUR
        DEFINED AS "It represents the resource concept and is used to identify the resource
        capabilities supporting a customer services.
        The etsiAccessPortISDNPrimaryRate object class supports up to 30 B-channels of 64 kbit/s for
        transfer of information and data and 1 D-channel of 64 kbit/s for signalling and data
        transfer (30 B + D).";;
        ATTRIBUTES
        dChannelLayer2Activation
                                        DEFAULT VALUE
                                        CustomerAdminModuleV2.dChannelActivationDefault
                                        GET-REPLACE;;;
```

REGISTERED AS {ocaManagedObjectClass 5};

7.1.2.7 Access channel

The accessChannel object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.2.8 ETSI access channel

```
etsiAccessChannel MANAGED OBJECT CLASS
   DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":accessChannel;
   CHARACTERIZED BY
   etsiAccessChannelPkg PACKAGE
        BEHAVIOUR
        etsiAccessChannelBhv BEHAVIOUR
        DEFINED AS "It represents an individual ISDN B-channel or D-channel of an ISDN access port
        or an individual channel of a digital access port. It identifies the set of attributes which
        apply in common to all types of ISDN and digital access channels. Instances of this object
        class are contained within ISDN or digital access ports.
        The number of access channels belonging to an access port depends on the access port
        architecture. This object class may be related to a set of customizedResource when services
        shall be provisioned on a per access channel basis.";;
        ATTRIBUTES
        channelType
                        GET-REPLACE;;;
   CONDITIONAL PACKAGES
        semipermanentLinePkg
        PRESENT IF "this entity may be related to a semipermanent line and it is required in the
        customer configuration"
REGISTERED AS {ocaManagedObjectClass 6};
```

7.1.2.9 Access port profile

The accessPortProfile object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.3 V5 interface fragment

ETS 300 377-1 [59] covers the configuration management of V5 interfaces and associated customer profiles. Since the customer administration related part of it was based on I-ETS 300 291 which is replaced by the present document, hereafter a re-definition of the affected object classes is given. The corresponding labels are extended by "R1".

The "ASN1DefinedTypesModule" references in the INITIAL VALUE definitions within this fragment refer to ETS 300 377-1 [59].

7.1.3.1 Virtual access port

This object class is subclassed for the different types of customer access ports and not instantiated within the scope of this application.

```
virtualAccessPortR1 MANAGED OBJECT CLASS
    DERIVED FROM etsiAccessPort;
    CHARACTERIZED BY
     "CCITT Recommendation M.3100:1992":ttpInstancePackage,
    "ETS 300 377-1 (1995)":commonDeleteBehaviourPackage,
    virtualAccessPortR1Pkg PACKAGE
         BEHAVIOUR
         virtualAccessPortR1Bhv BEHAVIOUR
         DEFINED AS "A virtualAccessPortR1 is an object class representing an image of the customer
         access port which is located in an AN and connected to the LE via V5 interface.
         The upstreamConnectivityPointer and the downstreamConnectivityPointer attributes have NULL
         value.
         The inherited operationalStatePackage is mandatory in this object class.
         The operationalState attribute indicates whether or not the user port is able to provide its service to the customer's terminal equipment. It reflects the states of the user port FSM in
         the LE according to annex A of ETS 300 377-1 (1995).
         An access port may have assigned one or more bearer time slots and/or one or more C-paths
         providing transport for different data types (bearer, signalling, f-type, p-type). The
         operationalState attribute shall be set to 'enabled' as long as the port has access to any
         service, and if there are no other contradictory conditions.
The operationalState attribute shall be set to 'disabled' if an access port has no service
         at all, i.e. the V5 interface itself or the related ISDN Ds or the PSTN C-path has failed. The assocV5Interface attribute gives the relation to the V5 interface, that virtual access
         port is assigned to. It is a group relationship attribute according to CCITT Recommendation
         X.732. The V5 interface is the owner object.
         The relationships are maintained by use of the setReciprocalPointers and
         releaseReciprocalPointers actions of the v5Interface object class.
If the 'CCITT Recommendation M.3100:1992':tmnCommunicationsAlarmInformationPackage is
         instantiated, then the communicationsAlarm notification shall be used to report errors
         related to this object class. The errors to be reported and the usage of the alarm report
         parameters are specified in ETS 300 379-1.";;
         ATTRIBUTES
         "ETS 300 377-1 (1995)":assocV5Interface
                                                           INITIAL VALUE
                                                           ASN1DefinedTypesModule.initialPointer
                                                           GET;;;
    CONDITIONAL PACKAGES
          CCITT Recommendation M.3100:1992":tmnCommunicationsAlarmInformationPackage
         PRESENT IF "an instance supports it",
         "CCITT Recommendation M.3100:1992":alarmSeverityAssignmentPointerPackage
         PRESENT IF "an instance supports it",
         "ETS 300 377-1 (1995)":anFaultReportedPackage
         PRESENT IF "the associated interface is a V5.2 interface and an instance supports it";
REGISTERED AS {ocaManagedObjectClass 7};
```

7.1.3.2 Virtual analogue access

```
virtualAnalogueAccessR1 MANAGED OBJECT CLASS
    DERIVED FROM virtualAccessPortR1;
    CHARACTERIZED BY
    virtualAnalogueAccessR1Pkg PACKAGE
        BEHAVIOUR
        virtualAnalogueAccessR1Bhv BEHAVIOUR
        DEFINED AS "A virtualAnalogueAccessR1 is an information entity used for the association of a
        PSTN customer's layer 3 port address with a V5.1/V5.2 interface.
        If no virtualAccessChannelR1 object instance is contained in the virtualAnalogueAccessR1
        object instance in the case of a V5.1 interface, the assocV5TimeSlot attribute points to the associated V5 time slot object instance. Otherwise it has NULL value. It is a peer
        relationship according to CCITT Recommendation X.732. The V5 time slot is provider.";;
        ATTRIBUTES
         "ETS 300 377-1 (1995)":layer3PortAddress
                                                        GET-REPLACE
         "ETS 300 377-1 (1995)":assocV5TimeSlot
                                                        INITIAL VALUE
                                  ASN1DefinedTypesModule.initialPointer
                                   GET.
        lineSignalling
                                   DEFAULT VALUE
                                   CustomerAdminModuleV2.lineSignallingDefault
                                  GET-REPLACE;;;
    CONDITIONAL PACKAGES
        semipermanentLinePkg
        PRESENT IF "this entity may be related to a semipermanent line and it is required in the
        customer configuration";
REGISTERED AS {ocaManagedObjectClass 8};
```

7.1.3.3 Virtual basic rate access

```
virtualBasicRateAccessR1 MANAGED OBJECT CLASS
    DERIVED FROM virtualAccessPortR1;
    CHARACTERIZED BY
    virtualBasicRateAccessR1Pkg PACKAGE
        BEHAVIOUR
        virtualBasicRateAccessR1Bhv BEHAVIOUR
        DEFINED AS "A virtualBasicRateAccessR1 is an information entity used for the association of
        an envelope function address representing an ISDN basic access with a V5.1/V5.2 interface.
        The assocIsdnSignallingCommPath attribute points to the associated ISDN communication path
        carrying the signalling messages of the assigned ISDN access.
        The assocPacketCommPath attribute points to the associated ISDN communication path carrying the D-channel packet mode data of the assigned ISDN access if the customer has subscribed to
        this service. Else, it has NULL value.
        The assocFrameCommPath attribute points to the associated ISDN communication path carrying
        the D-channel frame mode data of the assigned ISDN access if the customer has subscribed to
        this service. Else, it has NULL value.
        They are group relationships according to CCITT Recommendation X.732. The ISDN communication
        path is owner.
        The assocV5TimeSlotB1 and assocV5TimeSlotB2 attributes indicate for both B-channels the
        associated V5 time slot object instances, if no virtualAccessChannelR1 object instance is
        contained in the virtualBasicRateAccessR1 object instance in the case of a V5.1 interface.
        Otherwise it has NULL value. It is a peer relationship according to
        CCITT Recommendation X.732.
        These relationships are maintained by use of the setReciprocalPointer and
        releaseReciprocalPointer actions of the v5Interface object class.";;
        ATTRIBUTES
        dChannelLaver1Activation
                                          DEFAULT VALUE
                                          CustomerAdminModuleV2.dChannelActivationDefault
                                          GET-REPLACE,
        dChannelLayer2Activation
                                          DEFAULT VALUE
                                          CustomerAdminModuleV2.dChannelActivationDefault
                                          GET-REPLACE,
        "ETS 300 377-1 (1995)":envelopeFunctionAddress
                                                               GET-REPLACE,
        "ETS 300 377-1 (1995)":assocIsdnSignallingCommPath INITIAL VALUE
                                          ASN1DefinedTypesModule.initialPointer
                                          GET,
        "ETS 300 377-1 (1995)":assocPacketCommPath
                                                               INITIAL VALUE
                                          ASN1DefinedTypesModule.initialPointer
                                          GET,
        "ETS 300 377-1 (1995)":assocFrameCommPath
                                                               INITIAL VALUE
                                          ASN1DefinedTypesModule.initialPointer
                                          GET,
        "ETS 300 377-1 (1995)":assocV5TimeSlotB1
                                                               INITIAL VALUE
                                          ASN1DefinedTypesModule.initialPointer
                                          GET,
        "ETS 300 377-1 (1995)":assocV5TimeSlotB2
                                                               INITIAL VALUE
                                         ASN1DefinedTypesModule.initialPointer
                                          GET;;;
```

7.1.3.4 Virtual leased access

```
virtualLeasedAccessR1 MANAGED OBJECT CLASS
    DERIVED FROM virtualAccessPortR1;
    CHARACTERIZED BY
    virtualLeasedAccessR1Pkg PACKAGE
        BEHAVIOUR
        virtualLeasedAccessR1Bhv BEHAVIOUR
        DEFINED AS "A virtualLeasedAccessR1 is an information entity used for the association of a
        single analogue or digital semipermanent leased line or a multiple digital semipermanent
        leased line configuration with a V5.1/V5.2 interface.
        If it is a single semipermanent leased line, and if no virtualAccessChannelR1 object
        instance is contained in the virtualLeasedAccessRl object instance, and if it is associated with a V5.1 interface, the assocV5TimeSlot attribute points to the associated V5 Time Slot
        object instance. Otherwise it has NULL value. It is a peer relationship according to CCITT
        Recommendation X.732. The relationship shall be maintained by use of the
        setReciprocalPointer and releaseReciprocalPointer actions of the V5 Interface object class.
        A virtualLeasedAccessR1 object instance representing a single semipermanent leased line
        shall contain either no or one virtualAccessChannelR1 object instance. In a multiple
        semipermanent leased line configuration, the virtualLeasedAccessR1 object instance shall
        contain the appropriate number of virtualAccessChannelR1 object instances.
        The v5UserPortAddress attribute gives for a single semipermanent leased line the layer 3
        port address the access is assigned to, otherwise it gives the envelope function address.";;
        ATTRIBUTES
        "ETS 300 377-1 (1995)":v5UserPortAddress
                                                       INITIAL VALUE
                                          ASN1DefinedTypesModule.initialPointer
                                          GET-REPLACE,
        "ETS 300 377-1 (1995)":assocV5TimeSlot
                                                       INITIAL VALUE
                                          ASN1DefinedTypesModule.initialPointer
                                          GET;;;
REGISTERED AS {ocaManagedObjectClass 10};
```

7.1.3.5 Virtual primary rate access

```
virtualPrimaryRateAccessR1 MANAGED OBJECT CLASS
   DERIVED FROM virtualAccessPortR1;
   CHARACTERIZED BY
   virtualPrimaryRateAccessR1Pkg PACKAGE
        BEHAVIOUR
        virtualPrimaryRateAccessR1Bhv BEHAVIOUR
        DEFINED AS "A virtualPrimaryRateAccessR1 is an information entity used for the association
        of an envelope function address representing an ISDN primary rate access with a V5.2
        interface.
        The assocIsdnSignallingCommPath attribute points to the associated ISDN communication path
        carrying the signalling messages of the assigned ISDN access.
        The assocPacketCommPath attribute points to the associated ISDN communication path carrying
        the D-channel packet mode data of the assigned ISDN access if the customer has subscribed to
        this service. Else, it has NULL value.
        The assocFrameCommPath attribute points to the associated ISDN communication path carrying
        the D-channel frame mode data of the assigned ISDN access if the customer has subscribed to
        this service. Else, it has NULL value.
        They are group relationships according to CCITT Recommendation X.732. The ISDN communication
        path is owner. These relationships are maintained by use of the setReciprocalPointer and
        releaseReciprocalPointer actions of the v5Interface object class.";;
        ATTRIBUTES
        dChannelLayer2Activation
                                        DEFAULT VALUE
                                        CustomerAdminModuleV2.dChannelActivationDefault
                                        GET-REPLACE,
        "ETS 300 377-1 (1995)":envelopeFunctionAddress GET-REPLACE,
        "ETS 300 377-1 (1995)":assocIsdnSignallingCommPath INITIAL VALUE
                                        ASN1DefinedTypesModule.initialPointer
                                        GET,
        "ETS 300 377-1 (1995)":assocPacketCommPath
                                                        INTTIAL VALUE
                                        ASN1DefinedTypesModule.initialPointer
                                        GET,
        "ETS 300 377-1 (1995)":assocFrameCommPath
                                                        INITIAL VALUE
                                        ASN1DefinedTypesModule.initialPointer
                                        GET;;;
   CONDITIONAL PACKAGES
        "ETS 300 377-1 (1995)":qualityOfServiceAlarmPackage
        PRESENT IF "there is a remote digital subclause or if performance parameters are to be
        monitored against a pre-defined threshold";
REGISTERED AS {ocaManagedObjectClass 11};
```

7.1.3.6 Virtual access channel

```
virtualAccessChannelR1 MANAGED OBJECT CLASS
    DERIVED FROM etsiAccessChannel;
    CHARACTERIZED BY
    "ETS 300 377-1 (1995)":commonDeleteBhvPackage,
    "CCITT Recommendation M.3100:1992":ctpInstancePackage,
    virtualAccessChannelR1Pkg PACKAGE
        BEHAVIOUR
        virtualAccessChannelR1Bhv BEHAVIOUR
        DEFINED AS "A virtualAccessChannelR1 is an object class representing an individual ISDN
        B-/D-channel of an ISDN access port, or the bearer channel for an analogue access port, or
        an individual channel of an access port for a semipermanent leased line.
        If the channel type is an ISDN B-channel or a channel of a non-ISDN access in the case of a
        V5.1 interface, the assocV5TimeSlot attribute points to the associated V5 time slot object
        instance. Otherwise it has NULL value. It is a peer relationship according to CCITT
        Recommendation X.732.
        The relationship is maintained by use of the setReciprocalPointers and
        releaseReciprocalPointers actions of the v5Interface object class.
        The upstreamConnectivityPointer and the downstreamConnectivityPointer attributes have NULL
        value.";;
        ATTRIBUTES
                                                            GET-REPLACE,
        "ETS 300 377-1 (1995)":permanentLineReservation
        "ETS 300 377-1 (1995)":assocV5TimeSlot
                                        INITIAL VALUE ASN1DefinedTypesModule.initialPointer
                                        GET;;;
REGISTERED AS {ocaManagedObjectClass 12};
```

7.1.3.7 V5 bearer channel reservation

```
v5BcReservationR1 MANAGED OBJECT CLASS
DERIVED FROM etsiSupplementaryServiceServiceIndependent;
CHARACTERIZED BY
v5BcReservationR1Pkg PACKAGE
BEHAVIOUR
v5BcReservationR1Bhv BEHAVIOUR
DEFINED AS "The assignment of a v5BcReservationR1 object instance to a customized resource
indicates that a fixed assignment of bearer channels of a v5.2 interface is made for a
customer. Which V5 time slot is assigned is controlled by the resource manager but visible
at the Q3 interface.";;
ATTRIBUTES
"ETS 300 377-1 (1995)":noOfBcRequested GET-REPLACE,
"ETS 300 377-1 (1995)":bcReserved GET SET-BY-CREATE;;;
REGISTERED AS {ocaManagedObjectClass 13};
```

7.1.3.8 V5 leased line reservation

```
v5LlReservationR1 MANAGED OBJECT CLASS
   DERIVED FROM etsiSupplementaryServiceServiceIndependent;
   CHARACTERIZED BY
   v5LlReservationR1Pkg PACKAGE
        BEHAVIOUR
        v5LlReservationR1Bhv BEHAVIOUR
        DEFINED AS "The assignment of a v5LlReservationR1 object instance to a customized resource
        indicates that a fixed assignment of the bearer channel of a V5 interface is made for a
        customer. It is used either for analogue semipermanent leased lines without signalling or
        for digital semipermanent leased lines without signalling. Which V5 time slot in the case of
        a V5.2 interface is assigned is controlled by the resource manager but visible at the Q3
        interface.";;
        ATTRIBUTES
        "ETS 300 377-1 (1995)":bcReserved
                                                GET SET-BY-CREATE;;;
REGISTERED AS {ocaManagedObjectClass 14};
```

7.1.4 Directory number fragment

7.1.4.1 Directory number

The directoryNumber object class is defined in ITU-T Recommendation Q.824.0 [46]. It has no instantiations of itself.

7.1.4.2 ETSI directory number E.164

```
etsiDirectoryNumberE164 MANAGED OBJECT CLASS
    DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":directoryNumber;
    CHARACTERIZED BY
    etsiDirectoryNumberE164Pkg PACKAGE
        BEHAVIOUR
        etsiDirectoryNumberE164Bhv BEHAVIOUR
        DEFINED AS "The etsiDirectoryNumberE164 represents directory numbers belonging to the ISDN
        numbering plan defined in CCITT Recommendation E.164.
        Both etsiDirectoryNumberE164 and etsiAccessPort have the conditional package
        meteringCounterPkg containing the meteringCounter attribute. This package shall only be
        instantiated with one of these two object classes or their subclasses within one managed
        element.";;
        ATTRIBUTES
        "ITU-T Recommendation Q.824.0 (1996)":interceptTreatmentTerm
                                                                        GET-REPLACE,
        etsiE164DirectoryNumber
                                                GET SET-BY-CREATE;;;
    CONDITIONAL PACKAGES
        meteringCounterPkg
        PRESENT IF "an instance supports it and if this package is not instantiated with
        etsiAccessPort or its subclasses within the same managed element",
        portedDirectoryNumberPkg
        PRESENT IF "required for the administration of number portability";
REGISTERED AS {ocaManagedObjectClass 15};
```

7.1.4.3 Directory number X.121

The directoryNumberX121 object class characterizes the ITU-T Recommendation X.121 [51] packet switched directory number resource.

The directoryNumberX121 object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.5 Customer profile fragment

7.1.5.1 Customer profile

The customerProfile object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.5.2 ETSI customer profile

```
etsiCustomerProfile MANAGED OBJECT CLASS
   DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":customerProfile;
   CHARACTERIZED BY
    customerCharacteristicsPkg,
    etsiCustomerProfilePkg PACKAGE
        BEHAVIOUR
        etsiCustomerProfileBhv BEHAVIOUR
        DEFINED AS "An instance of an etsiCustomerProfile subclass may be related to zero, one, or
       more instances of accessPortProfile and/or one instance of etsiDirectoryNumberE164.";;
       ATTRIBUTES
        "CCITT Recommendation X.721: 1992":administrativeState GET-REPLACE;;;
   CONDITIONAL PACKAGES
        originForRouteingPkg
        PRESENT IF "aspects for call routeing purposes are to be considered",
        originForChargingPkg
        PRESENT IF "aspects for charging and/or tariffing purposes are to be considered",
        originForAnalysisPkg
        PRESENT IF "aspects for digit analysis purposes within the call routeing context are to be
        considered";
REGISTERED AS {ocaManagedObjectClass 16};
```

7.1.5.3 Analogue customer profile

```
analogueCustomerProfile MANAGED OBJECT CLASS
DERIVED FROM etsiCustomerProfile;
CHARACTERIZED BY
analogueCustomerProfilePkg PACKAGE
BEHAVIOUR
analogueCustomerProfileBhv BEHAVIOUR
DEFINED AS "This object class is the reference point for the services, directory numbers,
and access ports being part of the related profile. Only accessPortAnalogue or
virtualAnalogueAccessR1 shall be associated via the appropriate accessPortProfile instances
with this object class.";;;;
REGISTERED AS {ocaManagedObjectClass 17};
```

7.1.5.4 ISDN customer profile

```
isdnCustomerProfile MANAGED OBJECT CLASS
DERIVED FROM etsiCustomerProfile;
CHARACTERIZED BY
isdnCustomerProfilePkg PACKAGE
BEHAVIOUR
isdnCustomerProfileBhv BEHAVIOUR
DEFINED AS "This object class is the reference point for the services, directory numbers,
and access ports being part of the related profile. Only
accessPortISDNBasicRate / accessPortISDNPrimaryRate or
virtualBasicRateAccessRl / virtualPrimaryRateAccessRl shall be associated via the
appropriate accessPortProfile instances with this object class.";;;
CONDITIONAL PACKAGES
connectionTypePkg
PRESENT IF "required by the customer configuration";
REGISTERED AS {ocaManagedObjectClass 18};
```

7.1.5.5 Customized resource

The customized Resource object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.5.6 ETSI customized resource

```
etsiCustomizedResource MANAGED OBJECT CLASS
   DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":customizedResource;
   CHARACTERIZED BY
   etsiCustomizedResourcePkg PACKAGE
        BEHAVIOUR
        etsiCustomizedResourceBhv BEHAVIOUR
        DEFINED AS "This object class allows refinement of the service provisioning for a customer.
        It allows association of a set of services to:
            one or more access ports
           one or more DNs
            one or more access channels
        The channels may span more than one access port. The etsiCustomizedResource object class
        also allows association between DNs and access ports without any services associated with
        them.
        This object class is needed when a service is applicable only to a subset of access ports,
        access channels or DNs. It is not needed when all the services specified are applicable to
        all the access ports, access channels and DNs.";;
        ATTRIBUTES
        supplementaryServiceServiceDependentPtrList
                                                        DEFAULT VALUE
                                        CustomerAdminModuleV2.defaultPointerList
                                        GET-REPLACE ADD-REMOVE,
        supplementaryServiceServiceIndependentPtrList
                                                            DEFAULT VALUE
                                        CustomerAdminModuleV2.defaultPointerList
                                        GET-REPLACE ADD-REMOVE;;;
   CONDITIONAL PACKAGES
        directionalityPkg
        PRESENT IF "directionality is required in the customer configuration for this entity",
        connectionTypePkg
        PRESENT IF "required by the customer configuration";
REGISTERED AS {ocaManagedObjectClass 19};
```

7.1.6 Bearer service fragment

7.1.6.1 Bearer service

This object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.6.2 ETSI bearer service

The references of the bearer service subclasses to the service describing standards are given in annex A.

```
etsiBearerService MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":bearerService;
CHARACTERIZED BY
etsiBearerServicePkg PACKAGE
BEHAVIOUR
etsiBearerServiceBhv BEHAVIOUR
DEFINED AS "The 'ITU-T Recommendation Q.824.0':numberOfChannelsPkg and the
'ITU-T Recommendation Q.824.0': bearerSignallingPkg shall not be instantiated with
subclasses of this object class.";;;;
REGISTERED AS {ocaManagedObjectClass 20};
```

7.1.6.3 Circuit mode 3,1 kHz audio

```
circuitMode3100Hz MANAGED OBJECT CLASS
DERIVED FROM etsiBearerService;
CHARACTERIZED BY
circuitMode3100HzPkg PACKAGE
BEHAVIOUR
circuitMode3100HzBhv BEHAVIOUR
DEFINED AS "This object class defines the '3,1 kHz audio' bearer service.";;;;
CONDITIONAL PACKAGES
"ITU-T Recommendation Q.824.1 (1996)":networkProvidedTonePkg
PRESENT IF "supported by the network",
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfTotalCallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 21};
```

7.1.6.4 Circuit mode 64 kbit/s unrestricted

```
circuitMode64kb MANAGED OBJECT CLASS
DERIVED FROM etsiBearerService;
CHARACTERIZED BY
circuitMode64kbPkg PACKAGE
BEHAVIOUR
circuitMode64kbBhv BEHAVIOUR
DEFINED AS "This object class defines the '64 kbit/s unrestricted' bearer service .";;;;
CONDITIONAL PACKAGES
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfTotalCallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 22};
```

7.1.6.5 ETSI packet B channel

```
etsiPacketBChannel MANAGED OBJECT CLASS
DERIVED FROM etsiBearerService;
CHARACTERIZED BY
etsiPacketBChannelPkg PACKAGE
BEHAVIOUR
etsiPacketBChannelBhv BEHAVIOUR
DEFINED AS "This object class defines the packet mode bearer service running over a B
channel .";;;;
CONDITIONAL PACKAGES
localPacketHandlerPkg
PRESENT IF "the packet handler is integrated into the local connection related function",
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network and the packet handler is integrated into the local
connection related function";
```

```
REGISTERED AS {ocaManagedObjectClass 23};
```

7.1.6.6 ETSI packet D channel

```
etsiPacketDChannel MANAGED OBJECT CLASS
DERIVED FROM etsiBearerService;
CHARACTERIZED BY
etsiPacketDChannelPkg PACKAGE
BEHAVIOUR
etsiPacketDChannelBhv BEHAVIOUR
DEFINED AS "This object class defines the packet mode bearer service running over a D
channel .";;;
CONDITIONAL PACKAGES
localPacketHandlerPkg
PRESENT IF "the packet handler is integrated into the local connection related function";
REGISTERED AS {ocaManagedObjectClass 24};
```

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7.1.6.7 Layer entity

The layerEntity object class is defined in ITU-T Recommendation Q.824.0 [46].

Its subclasses layerEntityLAPB, layerEntityLAPD, layerEntityX25PLP, and layerEntityX25PLPShared are defined in ITU-T Recommendation Q.824.1 [47].

7.1.6.8 Multiple rate unrestricted

```
multipleRateUnrestricted MANAGED OBJECT CLASS
DERIVED FROM etsiBearerService;
CHARACTERIZED BY
multipleRateUnrestrictedPkg PACKAGE
BEHAVIOUR
multipleRateUnrestrictedBhv BEHAVIOUR
DEFINED AS "This object class defines the 'multiple rate unrestricted' bearer service .";;;;
CONDITIONAL PACKAGES
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 25};
```

7.1.6.9 Speech

```
speech MANAGED OBJECT CLASS
DERIVED FROM etsiBearerService;
CHARACTERIZED BY
speechPkg PACKAGE
BEHAVIOUR
operChBhv BEHAVIOUR
DEFINED AS "This object class defines the 'speech' bearer service .";;;;
CONDITIONAL PACKAGES
"ITU-T Recommendation Q.824.1 (1996)":networkProvidedTonePkg
PRESENT IF "supported by the network",
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfInfoclalcallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 26};
```

7.1.6.10 Unrestricted digital info with tones / announcements (7 kHz audio)

```
audio7khz MANAGED OBJECT CLASS
   DERIVED FROM etsiBearerService;
   CHARACTERIZED BY
   audio7khzPkg PACKAGE
        BEHAVIOUR
        audio7khzBhv BEHAVIOUR
        DEFINED AS "This object class defines the 'unrestricted digital info with
        tones / announcements' bearer service.";;;;
   CONDITIONAL PACKAGES
        "ITU-T Recommendation Q.824.1 (1996)":networkProvidedTonePkg
        PRESENT IF "supported by the network",
        maxNumOfInfoChannelsPkg
        PRESENT IF "supported by the network",
        maxNumOfTotalCallsPkg
        PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 27};
```
7.1.7 Teleservice fragment

7.1.7.1 Teleservice

This object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.7.2 ETSI teleservice

The references of the teleservice subclasses to the service describing standards are given in annex A.

```
etsiTeleservice MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":teleservice;
CHARACTERIZED BY
etsiTeleservicePkg PACKAGE
BEHAVIOUR
desiTeleserviceBhv BEHAVIOUR
DEFINED AS "The 'ITU-T Recommendation Q.824.0': cataloguedTeleservicePtrPkg and the
'ITU-T Recommendation Q.824.0': layerInfoPkg shall not be instantiated with subclasses of
this object class.
The bearerServicePtr attribute shall only point to object instances representing bearer
services which are permitted to be related to a teleservice represented by the instance of
this object class, regarding EN 300 196-1. Otherwise, it shall be empty string.";;;;
REGISTERED AS {ocaManagedObjectClass 28};
```

7.1.7.3 Telefax group 4

telefaxG4 MANAGED OBJECT CLASS DERIVED FROM etsiTeleservice; CHARACTERIZED BY telefaxG4Pkg PACKAGE BEHAVIOUR telefaxG4Bhv BEHAVIOUR DEFINED AS "This object class defines the telefax group 4 teleservice.";;;; REGISTERED AS {ocaManagedObjectClass 29};

7.1.7.4 Telephony 3,1 kHz

```
telephony MANAGED OBJECT CLASS
DERIVED FROM etsiTeleservice;
CHARACTERIZED BY
telephonyPkg PACKAGE
BEHAVIOUR
telephonyBhv BEHAVIOUR
DEFINED AS "This object class defines the telephony 3,1 kHz teleservice.";;;;
CONDITIONAL PACKAGES
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfTotalCallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 30};
```

7.1.7.5 Telephony 7 kHz

```
telephony7khz MANAGED OBJECT CLASS
DERIVED FROM etsiTeleservice;
CHARACTERIZED BY
telephony7khzPkg PACKAGE
BEHAVIOUR
telephony7khzBhv BEHAVIOUR
DEFINED AS "This object class defines the telephony 7 kHz teleservice.";;;;
CONDITIONAL PACKAGES
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfTotalCallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 31};
```

7.1.7.6 Videotelephony

```
videotelephony MANAGED OBJECT CLASS
DERIVED FROM etsiTeleservice;
CHARACTERIZED BY
videotelephonyPkg PACKAGE
BEHAVIOUR
videotelephonyBhv BEHAVIOUR
DEFINED AS "This object class defines the videotelephony teleservice.";;;;
CONDITIONAL PACKAGES
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfTotalCallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 32};
```

7.1.7.7 Videotex

```
videotex MANAGED OBJECT CLASS
DERIVED FROM etsiTeleservice;
CHARACTERIZED BY
videotexPkg PACKAGE
BEHAVIOUR
videotexBhv BEHAVIOUR
DEFINED AS "This object class defines the videotex teleservice.";;;;
CONDITIONAL PACKAGES
maxNumOfInfoChannelsPkg
PRESENT IF "supported by the network",
maxNumOfTotalCallsPkg
PRESENT IF "supported by the network";
REGISTERED AS {ocaManagedObjectClass 33};
```

7.1.8 Service dependent supplementary service fragment

It is to be regarded that services defined hereafter may apply both to ISDN and PSTN.

7.1.8.1 Supplementary service - service dependent

This object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.8.2 Customized supplementary service

The references of the supplementary service subclasses to the service describing standards are given in annex A.

```
customizedSupplementaryService MANAGED OBJECT CLASS
   DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceServiceDependent;
   CHARACTERIZED BY
   customizedSupplementaryServicePkg PACKAGE
        BEHAVIOUR
        customizedSupplementaryServiceBhv BEHAVIOUR
        DEFINED AS "It represents the supplementary services providing additional capabilities to be
        used with a basic telecommunication service. It may represent:
           an ISDN supplementary service as defined in ETSI;
           a CEPT supplementary service as defined in the CEPT Handbook;
           a non-standard supplementary service, i.e. operator-specific service.
        A customized supplementary service may be related with a bearer service or teleservice
        thereby supplementing this service.";;
        ATTRIBUTES
        "ITU-T Recommendation Q.824.0 (1996)":customizedResourcePtrList
                                                                          GET-REPLACE
        ADD-REMOVE;;;
```

REGISTERED AS {ocaManagedObjectClass 34};

7.1.8.3 Absent customer fixed announcement

```
absentCustomerFixedAnnouncement MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
absentCustomerFixedPkg PACKAGE
BEHAVIOUR
absentCustomerFixedBhv BEHAVIOUR
DEFINED AS "The absent customer fixed announcement supplementary service provides the
possibility for a subscriber to divert his incoming calls to a fixed announcement.";;;;
```

CONDITIONAL PACKAGES customerControlPermissionPkg PRESENT IF "required by service administration", serviceActivatedPkg PRESENT IF "required by service administration"; REGISTERED AS {ocaManagedObjectClass 35};

7.1.8.4 Absent customer operator position

```
absentCustomerOperatorPosition MANAGED OBJECT CLASS
    DERIVED FROM customizedSupplementaryService;
    CHARACTERIZED BY
    absentCustomerOperatorPkg PACKAGE
         BEHAVIOUR
         absentCustomerOperatorBhv BEHAVIOUR
         DEFINED AS "The absent customer operator position supplementary service provides the possibility for a subscriber to divert his incoming calls to an operator position.";;
         ATTRIBUTES
         forwardImmediately
                                     GET-REPLACE;;;
    CONDITIONAL PACKAGES
         customerControlPermissionPkg
         PRESENT IF "required by service administration",
         serviceActivatedPkg
         PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 36};
```

7.1.8.5 Absent customer predetermined announcement

```
absentCustomerPredeterminedAnnouncement MANAGED OBJECT CLASS
    DERIVED FROM customizedSupplementaryService;
    CHARACTERIZED BY
    absentCustomerPredeterminedPkg PACKAGE
         BEHAVIOUR
         absentCustomerPredeterminedBhv BEHAVIOUR
         DEFINED AS "The absent customer predetermined announcement supplementary service provides
the possibility for a subscriber to divert his incoming calls to a predetermined
         announcement.";;
         ATTRIBUTES
         announcementNumber
                                     GET-REPLACE;;;
    CONDITIONAL PACKAGES
         customerControlPermissionPkg
         PRESENT IF "required by service administration",
modificationPermissionPkg
         PRESENT IF "required by service administration",
         serviceActivatedPkg
         PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 37};
```

7.1.8.6 Advice of charge: charging information at call set-up time

```
adviceOfChargeSetup MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
adviceOfChargeSetupPkg PACKAGE
BEHAVIOUR
adviceOfChargeSetupBhv BEHAVIOUR
DEFINED AS "This service provides the served user with information about the charging rates
at call establishment. In addition, the served user shall be informed if a change in
charging rates takes place during the call. The information can be sent for all calls, or on
a per-call basis. The charge information given shall relate to the charges incurred on the
network to which the served user is attached.";;
ATTRIBUTES
adviceOfChargeActivation GET-REPLACE;;;
```

REGISTERED AS {ocaManagedObjectClass 38};

7.1.8.7 Advice of charge: charging information during the call

```
adviceOfChargeDuring MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
adviceOfChargeDuringPkg PACKAGE
```

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7.1.8.8 Advice of charge: charging information at the end of the call

```
adviceOfChargeEnd MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
   adviceOfChargeEndPkg PACKAGE
        BEHAVIOUR
        adviceOfChargeEndBhy BEHAVIOUR
        DEFINED AS "This service provides the served user with charging information for a call when
        the call is terminated. The information can be sent for all calls, or on a per-call basis.
        The charge information given shall relate to the charges incurred on the network to which
        the served user is attached.";;
        ATTRIBUTES
                                        GET-REPLACE;;;
        adviceOfChargeActivation
REGISTERED AS {ocaManagedObjectClass 40};
```

7.1.8.9 Blocking

```
blocking MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
   blockingPkg PACKAGE
        BEHAVIOUR
        blockingBhv BEHAVIOUR
        DEFINED AS "This object class gives the reason(s) for which a subscriber or a service is
        blocked. The accessibility of e.g. emergency numbers during blocking conditions is an
        implementation matter.";;
        ATTRIBUTES
        adminBlocking
                                DEFAULT VALUE
                                CustomerAdminModuleV2.blockingDirectionDefault
                                GET-REPLACE.
                                DEFAULT VALUE
       maintBlocking
                                CustomerAdminModuleV2.maintBlockingDefault
                                GET-REPLACE,
        accountSuspension
                                DEFAULT VALUE
                                CustomerAdminModuleV2.blockingDirectionDefault
                                GET-REPLACE
        catastrophe
                                GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 41};
```

7.1.8.10 Call deflection

```
callDeflection MANAGED OBJECT CLASS
    DERIVED FROM customizedSupplementaryService;
    CHARACTERIZED BY
         callDeflectionPkg PACKAGE
         BEHAVIOUR
         callDeflectionBhy BEHAVIOUR
         DEFINED AS "This service enables the subscriber to respond to an incoming call by requesting redirection of that call to another subscriber.";;
         ATTRIBUTES
         "ITU-T Recommendation Q.824.2 (1996)":deflectingNumberDelivery
                                                                                       GET-REPLACE.
         etsiDeflectingNumberNotification
                                                                                       GET-REPLACE;;;
```

REGISTERED AS {ocaManagedObjectClass 42};

7.1.8.11 Call forwarding busy

```
callForwardBusy MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
    callForwardBusyPkg PACKAGE
        BEHAVIOUR
        callForwardBusyBhv BEHAVIOUR
        DEFINED AS "This service permits a served user to have the network send all incoming calls,
        which meet busy and are addressed to the served user's number to another number. The served
        user's originating service is unaffected.";;
```

ATTRIBUTES	
etsiE164DirectoryNumber	GET-REPLACE,
callForwardActiveNotification	GET-REPLACE,
callForwardCallingNotification	GET-REPLACE,
callForwardReleaseNotification	GET-REPLACE,
callForwardServedNotification	GET-REPLACE;;;
CONDITIONAL PACKAGES	
customerControlPermissionPkg	
PRESENT IF "required by service	administration",
modificationPermissionPkg	
PRESENT IF "required by service	administration",
serviceActivatedPkg	
PRESENT IF "required by service	administration";
GISTERED AS {ocaManagedObjectClass 43]	};

7.1.8.12 Call forwarding no reply

RE

callForwardNoReply MANAGED OBJECT CLASS

```
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
callForwardNoReplyPkg PACKAGE
    BEHAVIOUR
    callForwardNoReplyBhv BEHAVIOUR
    DEFINED AS "This service permits a served user to have the network send all incoming calls,
    which meet no reply and are addressed to the served user's number to another number. The
    served user's originating service is unaffected.";;
    ATTRIBUTES
    etsiE164DirectoryNumber
                                        GET-REPLACE,
    callForwardActiveNotification
                                        GET-REPLACE,
    callForwardCallingNotification
                                        GET-REPLACE,
    callForwardReleaseNotification
                                        GET-REPLACE,
    callForwardServedNotification
                                        GET-REPLACE;;;;
CONDITIONAL PACKAGES
    customerControlPermissionPkg
    PRESENT IF "required by service administration",
    modificationPermissionPkg
    PRESENT IF "required by service administration",
    serviceActivatedPkg
    PRESENT IF "required by service administration";
```

REGISTERED AS {ocaManagedObjectClass 44};

7.1.8.13 Call forwarding unconditional

```
callForwardUnc MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
   callForwardUncPkg PACKAGE
        BEHAVIOUR
        callForwardUncBhv BEHAVIOUR
        DEFINED AS "This service permits a served user to have the network send all incoming calls
        addressed to the served user's number to another number. The served user's originating
        service is unaffected. If this service is activated, calls are forwarded no matter what is
        the condition of the termination.";;
        ATTRIBUTES
        etsiE164DirectoryNumber
                                            GET-REPLACE,
        callForwardActiveNotification
                                            GET-REPLACE.
        callForwardCallingNotification
                                            GET-REPLACE,
        callForwardReleaseNotification
                                            GET-REPLACE,
        callForwardServedNotification
                                            GET-REPLACE;;;
   CONDITIONAL PACKAGES
        customerControlPermissionPkg
        PRESENT IF "required by service administration",
        modificationPermissionPkg
        PRESENT IF "required by service administration",
        serviceActivatedPkg
        PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 45};
```

7.1.8.14 Call hold

callHold MANAGED OBJECT CLASS DERIVED FROM customizedSupplementaryService; CHARACTERIZED BY callHoldPkg PACKAGE BEHAVIOUR callHoldBhv BEHAVIOUR DEFINED AS "This service allows a user to interrupt communications on an existing call and then subsequently, if desired, re-establish communications.";;;; REGISTERED AS {ocaManagedObjectClass 46};

7.1.8.15 Calling line identification presentation

```
clipSupplService MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
clipSupplServicePkg PACKAGE
BEHAVIOUR
clipBhv BEHAVIOUR
DEFINED AS "This supplementary service 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.";;;;
REGISTERED AS {ocaManagedObjectClass 47};
```

7.1.8.16 Calling line identification restriction

clirSupplService MANAGED OBJECT CLASS

```
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
clirSupplServicePkg PACKAGE
BEHAVIOUR
clirBhv BEHAVIOUR
DEFINED AS "This supplementary service 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.";;
ATTRIBUTES
"ITU-T Recommendation Q.824.2 (1996)":callIdRestrictionOptions GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 48};
```

7.1.8.17 Call waiting

```
callWaiting MANAGED OBJECT CLASS
    DERIVED customizedSupplementaryService;
    CHARACTERIZED BY
    callWaitingPkg PACKAGE
        BEHAVIOUR
        callWaitingBhv BEHAVIOUR
        DEFINED AS "This service permits a user to be informed of an incoming call with an
        indication when all access to the user is busy. The user then has the choice of accepting, rejecting or ignoring the waiting call.";;
        ATTRIBUTES
        callWaitingCallingNotification
                                               GET-REPLACE,
        maxNumberOfWaitingCalls
                                               GET-REPLACE;;;
    CONDITIONAL PACKAGES
        customerControlPermissionPkg
        PRESENT IF "required by service administration",
        serviceActivatedPkg
        PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 49};
```

7.1.8.18 Closed user group subscription options

```
etsiCUGSubscriptionOption MANAGED OBJECT CLASS
    DERIVED FROM customizedSupplementaryService;
    CHARACTERIZED BY
    etsiCUGSubscriptionOptionPkg PACKAGE
         BEHAVIOUR
         etsiCUGSubscriptionOptionBhv BEHAVIOUR
         DEFINED AS "The CUG subscription options object shall 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, shall be rejected. The value of attribute preferredCUGIndex should not be NULL when interCUGAccess value is 'none' or 'incomingAccess'.";;
         ATTRIBUTES
        preferredCUGIndex
                                        GET-REPLACE
         interCUGAccess
                                        GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 50};
```

```
7.1.8.19 Completion of call on no reply
```

```
callCompletionNoReply MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
callCompletionNoReplyPkg PACKAGE
BEHAVIOUR
callCompletionNoReplyBhv BEHAVIOUR
DEFINED AS "The completion of call on no reply supplementary service permits a user A,
encountering a destination B, which does not answer the call (no reply), to be notified when
the destination B becomes free after having terminated an activity, and to have the network
reinitiate the call to the specified destination B if user A desires.";;;
CONDITIONAL PACKAGES
callCompletionNoReplyRecallModePkg
PRESENT IF "the recall mode is offered on a per customer configuration basis";
REGISTERED AS {ocaManagedObjectClass 51};
7.1.8.20 Completion of calls to busy subscribers
```

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```
callCompletionBusy MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
callCompletionBusyPkg PACKAGE
BEHAVIOUR
callCompletionBusyBhv BEHAVIOUR
DEFINED AS "This service enables a calling user, encountering a busy destination, to have
the call completed when the busy destination becomes not busy, without having to make a new
call attempt.";;;;
CONDITIONAL PACKAGES
callCompletionBusyRecallModePkg
PRESENT IF "the recall mode is offered on a per customer configuration basis";
REGISTERED AS {ocaManagedObjectClass 52};
```

7.1.8.21 Conference call add-on

conferenceCallAddOn MANAGED OBJECT CLASS

DERIVED FROM customizedSupplementaryService;

CHARACTERIZED BY

conferenceCallAddOnPackage PACKAGE

BEHAVIOUR

conferenceCallAddOnBehaviour BEHAVIOUR

DEFINED AS "This managed object class is used to indicate that the customer is authorized to use the conference call add-on supplementary service.";;;;

REGISTERED AS {ocaManagedObjectClass 53};

7.1.8.22 Connected line identification presentation

```
colpSupplService MANAGED OBJECT CLASS
    DERIVED FROM customizedSupplementaryService ;
    CHARACTERIZED BY
    colpPkg PACKAGE
        BEHAVIOUR
        colpBhv BEHAVIOUR
        "This object class is a supplementary service offered for the calling party, which indicates
        the called party at the calling party. ";;;;
```

REGISTERED AS $\{ ocaManagedObjectClass 54 \}$;

7.1.8.23 Connected line identification restriction

```
colrSupplService MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
colrSupplServicePkg PACKAGE
BEHAVIOUR
colrSupplServiceBhv BEHAVIOUR
DEFINED AS "The called line identification restriction supplementary service is a
supplementary service offered to the called party to prevent presentation of the called
party's ISDN number, and subaddress information (if any) to the calling party.";;
ATTRIBUTES
"ITU-T Recommendation Q.824.2 (1996)":callIdRestrictionOptions GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 55};
```

7.1.8.24 Explicit call transfer

```
explicitCallTransfer MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
explicitCallTransferPkg PACKAGE
BEHAVIOUR
explicitCallTransferBhv BEHAVIOUR
DEFINED AS "This managed object class is used to indicate that the customer is authorized to
use the explicit call transfer supplementary service.";;;;
REGISTERED AS {ocaManagedObjectClass 56};
7.1.8.25 Fixed destination call
```

```
fixedDestinationCall MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
       fixedDestinationCallPkg PACKAGE
       BEHAVIOUR
        fixedDestinationCallBhv BEHAVIOUR
       DEFINED AS "This object class is used to administer the fixed destination call (hot line)
        service both with or without the possibility of administration via customer controlled
        input.
       For administration controlled service operation, the instantiation of the object is
        initiated by the OS. The values of the attributes variant and fixedDestinationNumber shall
       be set at creation, but may afterwards be modified by the OS.
        In the case of service operation by the customer on service provision basis, the
        instantiation of the object is as well initiated by the OS to indicate that the customer has
        the authorization to use the service. The value of the variant attribute shall be set at
       creation by the OS according to the service subscription. The value of the
        fixedDestinationNumber attribute shall be set to NULL. The value of this attribute shall be
       modified by the resource management of the exchange on the customer input of the service
       control operation.";;
       ATTRIBUTES
        variant
                                    GET-REPLACE,
       fixedDestinationNumber
                                    GET-REPLACE;;;
   CONDITIONAL PACKAGES
       customerControlPermissionPkg
       PRESENT IF "required by service administration",
       modificationPermissionPkg
       PRESENT IF "required by service administration",
        serviceActivatedPkg
```

7.1.8.26 Incoming call barring

PRESENT IF "required by service administration"; REGISTERED AS {ocaManagedObjectClass 57};

```
incomingCallBarring MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
incomingCallBarringPkg PACKAGE
BEHAVIOUR
incomingCallBarringBhv BEHAVIOUR
DEFINED AS "With this object class, incoming call barring is assigned. It may activate as
well a do-not-disturb announcement.";;
ATTRIBUTES
doNotDisturb GET-REPLACE;;;
CONDITIONAL PACKAGES
customerControlPermissionPkg
PRESENT IF "required by service administration",
serviceActivatedPkg
PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 58};
```

7.1.8.27 Interception of calls

```
interceptionOfCalls MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
interceptionOfCallsPkg PACKAGE
BEHAVIOUR
interceptionOfCallsBhv BEHAVIOUR
DEFINED AS "This object class allows an interception of calls on a per-service basis.";;
ATTRIBUTES
interceptionReason GET-REPLACE,
"ITU-T Recommendation Q.824.0 (1996)":interceptTreatmentTerm GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 59};
```

7.1.8.28 Malicious call identification

Since due to legal and network operator's requirements the format of the malicious call identification notification may vary from country to country, this notification shall be defined with an implementation specific subclass.

```
maliciousCallIdentification MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
maliciousCallIdentificationPkg PACKAGE
BEHAVIOUR
maliciousCallIdentificationBhv BEHAVIOUR
DEFINED AS "This supplementary service allows a subscriber to start up the tracing of the
malicious call originator.";;;;
CONDITIONAL PACKAGES
automaticInvocationPkg
PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 60};
```

7.1.8.29 Outgoing call barring

```
outgoingCallBarring MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
   outgoingCallBarringPkg PACKAGE
        BEHAVIOUR
        outgoingCallBarringBhv BEHAVIOUR
        DEFINED AS "With this object class, outgoing call barring with fixed and/or user controlled
        program is assigned. The barring program may cover as well subscriber controlled input
        restrictions.";;
        ATTRIBUTES
                                    GET-REPLACE ADD-REMOVE,
        fixedPrograms
        userControlledPrograms
                                    GET-REPLACE ADD-REMOVE;;;
   CONDITIONAL PACKAGES
        customerControlPermissionPkg
        PRESENT IF "required by service administration",
        serviceActivatedPkg
        PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 61};
```

7.1.8.30 Subaddressing

subaddressing MANAGED OBJECT CLASS DERIVED FROM customizedSupplementaryService; CHARACTERIZED BY subaddressingPackage PACKAGE BEHAVIOUR subaddressingBehaviour BEHAVIOUR DEFINED AS " This managed object class is used to indicate that the called customer is authorized to use the subaddressing supplementary service.";;;; REGISTERED AS {ocaManagedObjectClass 62};

7.1.8.31 Terminal portability

```
termPortabilitySupplService MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
termPortabilitySupplServicePkg PACKAGE
BEHAVIOUR
termPortabilityBhv BEHAVIOUR
DEFINED AS "This supplementary service allows a user engaged in an active call to adjourn
communication by an appropriate signalling procedure and resume the call at a later
time.";;;;
REGISTERED AS {ocaManagedObjectClass 63};
```

7.1.8.32 Three party

```
threeParty MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
threePartyPkg PACKAGE
BEHAVIOUR
threePartyBhv BEHAVIOUR
DEFINED AS "This service enables a user to establish a three-way conversation, i.e. a
simultaneous communication between the user and two other parties.";;;
REGISTERED AS {ocaManagedObjectClass 64};
```

7.1.8.33 User to user signalling

```
userToUserSignalling MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
   userToUserSignallingPkg PACKAGE
        BEHAVIOUR
        userToUserSignallingBhv BEHAVIOUR
        DEFINED AS "The user to user signalling supplementary service permits a user to
        send / receive a limited amount of information to/from another user over the signalling
        channel in association with a call to the other user.";;
        ATTRIBUTES
        uusServicelImplicit
                                GET-REPLACE,
        uusServicelExplicit
                                GET-REPLACE,
                                GET-REPLACE,
        uusService2
        uusService3
                                GET-REPLACE;;;
```

REGISTERED AS {ocaManagedObjectClass 65};

7.1.8.34 Voice messaging busy

```
voiceMessagingBusy MANAGED OBJECT CLASS
    DERIVED FROM customizedSupplementaryService;
    CHARACTERIZED BY
    voiceMessagingBusyPkg PACKAGE
        BEHAVIOUR
        voiceMessagingBusyBhv BEHAVIOUR
        DEFINED AS "The voice messaging supplementary service allows the customer to activate a
        centralized voice messaging system to collect voice messages for calls which meet busy.";;;;
    CONDITIONAL PACKAGES
        voiceMessagingNumberPkg
        PRESENT IF "needed for routeing to the voice messaging system on subscription basis",
        mwiReceiverPointerPkg
        PRESENT IF "a dedicated mwiReceiver object class is to be assigned",
        customerControlPermissionPkg
        PRESENT IF "required by service administration",
        serviceActivatedPkg
        PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 66};
```

7.1.8.35 Voice messaging no reply

```
voiceMessagingNoReply MANAGED OBJECT CLASS
   DERIVED FROM customizedSupplementaryService;
   CHARACTERIZED BY
   voiceMessagingNoReplyPkg PACKAGE
        BEHAVIOUR
        voiceMessagingNoReplyBhv BEHAVIOUR
        DEFINED AS "The voice messaging supplementary service allows the customer to activate a
        centralized voice messaging system to collect voice messages for calls which meet no
        reply.";;;;
   CONDITIONAL PACKAGES
        voiceMessagingNumberPkg
        PRESENT IF "needed for routeing to the voice messaging system on subscription basis",
        mwiReceiverPointerPkg
        PRESENT IF "a dedicated mwiReceiver object class is to be assigned",
        customerControlPermissionPkg
        PRESENT IF "required by service administration",
        serviceActivatedPkg
        PRESENT IF "required by service administration";
REGISTERED AS {ocaManagedObjectClass 67};
```

7.1.8.36 Voice messaging unconditional

```
voiceMessagingUnconditional MANAGED OBJECT CLASS
DERIVED FROM customizedSupplementaryService;
CHARACTERIZED BY
voiceMessagingUnconditionalPkg PACKAGE
BEHAVIOUR
voiceMessagingUnconditionalBhv BEHAVIOUR
DEFINED AS "The voice messaging supplementary service allows the customer to activate a
centralized voice messaging system to collect voice messages for all calls no matter what
the condition of the termination is.";;;;
```

7.1.9 Service independent supplementary service fragment

It is to be regarded that services defined hereafter may apply both to ISDN and PSTN.

7.1.9.1 Supplementary service - service independent

This object class is defined in ITU-T Recommendation Q.824.0 [46].

The references of its subclasses to the service describing standards are given in annex A.

7.1.9.2 ETSI supplementary service - service independent

The references of the supplementary service subclasses to the service describing standards are given in annex A.

```
etsiSupplementaryServiceServiceIndependent MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceServiceIndependent;
CHARACTERIZED BY
etsiSupplementaryServiceServiceIndependentPkg PACKAGE
BEHAVIOUR
etsiSupplementaryServiceServiceIndependentBhv BEHAVIOUR
DEFINED AS "It represents the supplementary services providing additional capabilities to be
used with a basic telecommunication service. It may represent:
- an ISDN supplementary service as defined in ETSI;
- a CEPT supplementary service as defined in the CEPT Handbook;
- a non-standard supplementary service, i.e. operator-specific service.";;
ATTRIBUTES
"ITULT Recommendation 0.824.0 (1996)":gustomizedDesourcePtrLigt GFT-PEPLACE ADD-PEMOVE:::
```

"ITU-T Recommendation Q.824.0 (1996)":customizedResourcePtrList GET-REPLACE ADD-REMOVE;;; REGISTERED AS {ocaManagedObjectClass 69};

7.1.9.3 Abbreviated dialling

```
abbreviatedDialling MANAGED OBJECT CLASS
   DERIVED FROM etsiSupplementaryServiceServiceIndependent;
   CHARACTERIZED BY
   abbreviatedDiallingPkg PACKAGE
        BEHAVIOUR
        abbreviatedDiallingBhy BEHAVIOUR
        DEFINED AS "This managed object class is used to indicate that the customer is authorized to
        use the abbreviated dialling supplementary service.
        This object class shall be instantiated either with the ownedListPkg or the sharedListPkg.
        This choice is exclusive.";;;;
   CONDITIONAL PACKAGES
        ownedListPkg
        PRESENT IF "an owned list for abbreviated dialling is to be assigned to a customer
        configuration and the sharedListPkg package is not present",
        sharedListPkg
        PRESENT IF "one or more shared lists for abbreviated dialling are to be assigned to a
        customer configuration and the ownedListPkg package is not present";
REGISTERED AS {ocaManagedObjectClass 70};
```

```
alarmCall MANAGED OBJECT CLASS
    DERIVED FROM etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
         alarmCallPkg PACKAGE
         BEHAVIOUR
         alarmCallBhv BEHAVIOUR
         DEFINED AS "The alarm call supplementary service provides the possibility for a user to
         cause an alarm call or calls to be made to his line at the time or times specified in
         advance to him, and to hear an appropriate announcement when the call is answered.
An instance of this object class shall be automatically deleted if all related alarm calls
         are performed and if it is contained in a customer configuration.
         More than one instance of alarmCall may exist for a specific customer profile.";;
         ATTRIBUTES
         timeOfDay
                               GET SET-BY-CREATE,
                               GET SET-BY-CREATE,
         kindOfAlarmCall
         alarmCallType
                               GET SET-BY-CREATE;
         NOTIFICATIONS
         failedAlarmCall;;;
REGISTERED AS {ocaManagedObjectClass 71};
```

7.1.9.5 Closed user group

```
etsiCUG MANAGED OBJECT CLASS
    DERIVED FROM etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
    etsiCUGPkg PACKAGE
        BEHAVIOUR
        etsiCUGBhv BEHAVIOUR
        DEFINED AS "The managed object class is used to store the closed user group general
        subscription options .
        The attribute cUGIndex shall be explicitly assigned upon object creation.
        No two instances of object class etsiCUG contained within a single object shall have
        identical values for attribute cUGIndex.
        No two instances of object class etsiCUG contained within a single object shall have
        identical values of attribute cUGInterlockCode and cUGDataNetworkIdentification.
        When the value of attribute cUGBarring is outBarred, this CUG shall not be a preferential
        closed user group (denoted by attribute preferredCUGIndex in cUGSubscriptionOption managed
        object).";;
        ATTRIBUTES
        cUGIndex
                                        GET SET-BY-CREATE,
        cUGInterlockCode
                                        GET SET-BY-CREATE.
                                        GET SET-BY-CREATE,
        cUGDataNetworkIdentification
        cUGBarring
                                        GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 72};
```

7.1.9.6 Cordless terminal mobility

```
cordlessTerminalMobility MANAGED OBJECT CLASS
   DERIVED FROM etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
   cordlessTerminalMobilityPkg PACKAGE
        BEHAVIOUR
        cordlessTerminalMobilityBhv BEHAVIOUR
        DEFINED AS "The cordless terminal mobility service allows users of cordless terminals to be
        mobile within and between networks. Where radio coverage is provided and the cordless
        terminal has appropriate access rights the user is able to make calls from, and to receive
        calls at, any location within the fixed public and/or private networks, and may move without
        interruption of a call in progress.";;
        ATTRIBUTES
        ctmId
                                GET-REPLACE
        permittedMobileArea
                                GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 73};
```

7.1.9.7 Customer observation

customerObservation MANAGED OBJECT CLASS

DERIVED FROM etsiSupplementaryServiceServiceIndependent;

CHARACTERIZED BY

customerObservationPkg PACKAGE

```
BEHAVIOUR
```

customerObservationBhv BEHAVIOUR DEFINED AS "The customer observation service activates the recording of call details e.g. for verification of the increments to the metering counter of the customer, supervision purposes, quality of service verification, etc. ";;;;

```
CONDITIONAL PACKAGES
observationModePkg
PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 74};
```

7.1.9.8 Detailed billing

detailedBilling MANAGED OBJECT CLASS DERIVED FROM etsiSupplementaryServiceServiceIndependent; CHARACTERIZED BY detailedBillingPkg PACKAGE BEHAVIOUR detailedBillingBhv BEHAVIOUR DEFINED AS "The service of detailed billing gives the customer the possibility of being billed with a complete detail of the originated traffic. The completeness of the data presented on the bill depends on the detail class subscribed by the customer or available in the network and/or exchange.";; ATTRIBUTES detailClass GET-REPLACE;;;

REGISTERED AS {ocaManagedObjectClass 75};

7.1.9.9 Different ringing

differentRinging MANAGED OBJECT CLASS DERIVED FROM etsiSupplementaryServiceServiceIndependent; CHARACTERIZED BY differentRingingPkg PACKAGE BEHAVIOUR differentRingingBhv BEHAVIOUR DEFINED AS "It is used to allocate different directory numbers to a single analogue access. For calls to such an access, different ringing signals (e.g. different sequences) are to be sent to the customer installation, according to the directory number dialled by the calling party. It is to be considered that the assigned port must be capable to provide the different ringing. This object class shall only be assigned to non-ISDN customer configurations.";; ATTRIBUTES primaryDN GET REPLACE. GET REPLACE;;; ringingSequence REGISTERED AS {ocaManagedObjectClass 76};

7.1.9.10 Direct dialling in

```
ddi MANAGED OBJECT CLASS
    DERIVED FROM etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
    ddiPkg PACKAGE
        BEHAVIOUR
        ddiBhv BEHAVIOUR
        DEFINED AS "This supplementary service enables a user to call directly via a public ISDN a
        user on a private ISDN by use of the public ISDN numbering plan.";;;;
    CONDITIONAL PACKAGES
        "ITU-T Recommendation Q.824.2 (1996)":digitsOptionsPkg
        PRESENT IF "supported by the administration";
    REGISTERED AS {ocaManagedObjectClass 77};
```

7.1.9.11 General facility reset

```
generalFacilityReset MANAGED OBJECT CLASS
DERIVED FROM etsiSupplementaryServiceServiceIndependent;
CHARACTERIZED BY
generalFacilityResetPackage PACKAGE
BEHAVIOUR
generalFacilityResetBehaviour BEHAVIOUR
DEFINED AS " This managed object class is used to indicate that the customer is authorized
to use general facility reset supplementary service.
The general facility reset supplementary service allows a customer to deactivate with one
subscriber controlled input command (SCI) a number of supplementary services.
The supplementary services to be deactivated as a result of the SCI can be network operator
dependent.";;;;
REGISTERED AS {ocaManagedObjectClass 78};
```

```
homeMeter MANAGED OBJECT CLASS
DERIVED FROM etsiSupplementaryServiceServiceIndependent;
CHARACTERIZED BY
homeMeterPkg PACKAGE
BEHAVIOUR
homeMeterBhv BEHAVIOUR
DEFINED AS "It is used to assign to a customer configuration the transmission of metering
pulses to the customer premises.
This object class shall only be assigned to non-ISDN customer configurations. It is to be
considered that the assigned port must be capable to provide the installation in the
customer's premises with the metering pulses.";;;;
REGISTERED AS {ocaManagedObjectClass 79};
```

7.1.9.13 Message waiting indication controller

```
mwiController MANAGED OBJECT CLASS
DERIVED FROM etsiSupplementaryServiceServiceIndependent;
CHARACTERIZED BY
mwiControllerPkg PACKAGE
BEHAVIOUR
mwiControllerBhv BEHAVIOUR
DEFINED AS "This service permits a user to activate and deactivate the message waiting
indication of a user which supports the voice messaging supplementary service. The user of
this object class is likely to be a voice mail box.";;;;
REGISTERED AS {ocaManagedObjectClass 80};
```

7.1.9.14 Message waiting indication receiver

```
mwiReceiver MANAGED OBJECT CLASS
   DERIVED FROM etsiSupplementaryServiceServiceIndependent;
   CHARACTERIZED BY
   mwiReceiverPackage PACKAGE
        BEHAVIOUR
        mwiReceiverBehaviour BEHAVIOUR
        DEFINED AS "This service permits a user to receive changes to the condition of a message
        waiting indicator. The user of this object class is likely to be subscribed to a voice
        messaging service which forwards calls to a voice mail box.";;
        ATTRIBUTES
        mwiInvocationMode
                                    GET-REPLACE .
       messageWaitingIndicator
                                    GET;;;
   CONDITIONAL PACKAGES
        mwiControllingUserPkg
        PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 81};
```

7.1.9.15 Multiple subscriber number

```
msn MANAGED OBJECT CLASS
    DERIVED FROM etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
    msnPkg PACKAGE
         BEHAVIOUR
         msnBhv BEHAVIOUR
         DEFINED AS "The MSN supplementary service provides the possibility for assigning multiple
         directory numbers (not necessarily consecutive) to a customer configuration. This enables
         the selection of one or more multiple distinct terminals attached to the same interface.
         The MSN supplementary service is only valid for single line, standard subscribers connected to a basic access port. The MSN supplementary service shall be created prior to assignment
         of the second CCITT Recommendation E.164 DN to attribute directoryNumberPtrList of the ISDN
         customer profile.
         The MSN supplementary service object class may not be deleted unless attribute
         directoryNumberPtrList of the ISDN customer profile contains two or more CCITT
         Recommendation E.164 DN.";;
         ATTRIBUTES
         assocDefaultDN
                                        GET-REPLACE;;;
REGISTERED AS {ocaManagedObjectClass 82};
```

```
pinSvc MANAGED OBJECT CLASS
   DERIVED FROM etsiSupplementaryServiceServiceIndependent;
   CHARACTERIZED BY
   pinSvcPkg PACKAGE
        BEHAVIOUR
        pinSycBhy BEHAVIOUR
        DEFINED AS "This managed object class is used to assign a PIN to one or more supplementary
        services to prevent from their unauthorized use.
        The initial value and the default value of the pin attribute is determined by the network
        element resource on its own.
        The PIN given in the pin attribute is valid for all PIN controlled customized services
        assigned to a customer configuration identified by the PIN profile reference.";;
        ATTRIBUTES
                                    REPLACE-WITH-DEFAULT
       pin
                DEFAULT VALUE DERIVATION RULE
                pinDefaultAndInitialBhv BEHAVIOUR
                DEFINED AS "The initial value and the default value of the pin attribute is
                determined by the network element resource on its own.";
                INTTIAL VALUE
                DERIVATION RULE pinDefaultAndInitialBhv,
       pinProfileRef
                                    GET-REPLACE;;;;
REGISTERED AS {ocaManagedObjectClass 83};
```

7.1.9.17 Preselected carrier supplementary service

7.1.9.18 Priority

```
priority MANAGED OBJECT CLASS
DERIVED FROM etsiSupplementaryServiceServiceIndependent;
CHARACTERIZED BY
priorityPkg PACKAGE
BEHAVIOUR
priorityBhv BEHAVIOUR
DEFINED AS "This supplementary service is used to assign priority to some or all access
ports of the related profile e.g. to override traffic controls assigned to non-priority
traffic.";;;;
REGISTERED AS {ocaManagedObjectClass 85};
```

7.1.9.19 Remote control of supplementary service

```
remoteControlService MANAGED OBJECT CLASS
   DERIVED FROM etsiSupplementaryServiceServiceIndependent;
   CHARACTERIZED BY
   remoteControlServicePkg PACKAGE
        BEHAVIOUR
        remoteControlServiceBhv BEHAVIOUR
        DEFINED AS "The remote control supplementary service enables a user to control a
        supplementary service or a number of supplementary services associated with that user's
        configuration from another access using the procedures provided for the (supplementary)
        service(s) to be controlled at the served user's access. Remote control service can be
        invoked independently of the state of the served user's access, and existing calls at the
        served user's access shall not be affected by the invocation of the remote control
        service.";;;;
   CONDITIONAL PACKAGES
        remotelyControlledServicePkg
        PRESENT IF "this service facility is provided on subscription basis",
        callDiversionRestrictionsPkg
        PRESENT IF "this service facility is provided on subscription basis";
REGISTERED AS {ocaManagedObjectClass 86};
```

7.1.9.20 Terminating calls not charged

```
terminatingCallsNotCharged MANAGED OBJECT CLASS
DERIVED FROM etsiSupplementaryServiceServiceIndependent;
CHARACTERIZED BY
terminatingCallsNotChargedPkg PACKAGE
BEHAVIOUR
terminatingCallsNotChargedBhv BEHAVIOUR
DEFINED AS "The terminating calls not charged supplementary service is a service associated
with the called party.
Calls to a directory number with this service will not be charged.
To prevent the charging in the originating exchange in case of an incoming terminating call,
the terminating exchange will, if the signalling system supports it, send a backward signal
'no charge' and provide for the answer signal or, in case the signalling system does not
support the sending of information that the call is not to be charged, withhold the answer
signal.";;;;
```

REGISTERED AS {ocaManagedObjectClass 87};

7.1.10 General services

In this clause, services are defined which are subject to be provided on a per exchange basis.

7.1.10.1 Catalogued supplementary service

This object class is defined in ITU-T Recommendation Q.824.0 [46].

The catalogued supplementary service managed object class is a superclass for other service subclasses that have attributes that are not customizable by the customer. The subclasses will be defined once candidates for the non-customizable attributes have been identified.

This object class is not instantiated.

7.1.10.2 Catalogued teleservice

This object class is defined in ITU-T Recommendation Q.824.0 [46].

The catalogued teleservice managed object class defines a communication service that makes available layer 4 - layer 7 capabilities. and has attributes that are not customizable by the customer. This object class is a superclass from which specific catalogued teleservice objects may be derived as subclasses.

This object class is not instantiated.

7.1.10.3 General ISDN service container

```
generalIsdnServiceContainer MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Recommendation X.721: 1992":top;
    CHARACTERIZED BY
    generalIsdnServiceContainerPkg PACKAGE
         BEHAVIOUR
         generalIsdnServiceContainerBhv BEHAVIOUR
         DEFINED AS "The General ISDN service container is the superior object class for
         supplementary services available to all ISDN customer configurations.
         It is to be considered that a service configuration within a customer configuration
         overrides this general service configuration.
         This object class shall only be used for the general provision of services for which the resource (i.e. the exchange) is capable to provide them generally on exchange level.";;
         ATTRIBUTES
         serviceContainerId
                                    GET;;;
    CONDITIONAL PACKAGES
         generalServiceListPkg
         PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 88};
```

7.1.10.4 General PSTN service container

```
generalPstnServiceContainer MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Recommendation X.721: 1992":top;
   CHARACTERIZED BY
   generalPstnServiceContainerPkg PACKAGE
        BEHAVIOUR
        generalPstnServiceContainerBhv BEHAVIOUR
        DEFINED AS "The General PSTN service container is the superior object class for
        supplementary services available to all PSTN customer configurations.
        It is to be considered that a service configuration within a customer configuration
        overrides this general service configuration.
        This object class shall only be used for the general provision of services for which the
        resource (i.e. the exchange) is capable to provide them generally on exchange level.";;
        ATTRIBUTES
        serviceContainerId
                                GET;;;
   CONDITIONAL PACKAGES
        generalServiceListPkg
        PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 89};
```

7.1.10.5 Non ISDN service

```
nonIsdnService MANAGED OBJECT CLASS
   DERIVED FROM "CCITT Recommendation X.721: 1992":top;
   CHARACTERIZED BY
        nonIsdnServicePkg PACKAGE
        BEHAVIOUR
        nonIsdnServiceBhv BEHAVIOUR
        DEFINED AS "This object class is defined to allow the creation of specific supplementary
        services for analogue customer profiles.";;
        ATTRIBUTES
        nonIsdnServiceId
                                                                         GET,
        "CCITT Recommendation X.721: 1992":administrativeState
                                                                         GET-REPLACE,
        "ITU-T Recommendation Q.824.0 (1996)":customizedResourcePtrList GET-REPLACE ADD-REMOVE;
        NOTIFICATIONS
        "CCITT Recommendation X.721: 1992":stateChange,
        "CCITT Recommendation X.721: 1992":attributeValueChange;;;
REGISTERED AS {ocaManagedObjectClass 90};
```

7.1.11 Service provision fragment

7.1.11.1 Service manager

The serviceManager object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.11.2 Configuration service manager

```
configurationServiceManager MANAGED OBJECT CLASS
    DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":serviceManager;
    CHARACTERIZED BY
    configurationServiceManagerPkg PACKAGE
    BEHAVIOUR
    configurationServiceManagerBhv BEHAVIOUR
    DEFINED AS "The configurationServiceManager performs actions which establish customer
    configurations and services. In addition, the configurationServiceManager performs actions
    which change directory number and access port assignments.";;
    ACTIONS
    changeDirectoryNumber "ITU-T Recommendation Q.824.1 (1996)":invalidReferenceError,
    changeAccessPort "ITU-T Recommendation Q.824.1 (1996)":invalidReferenceError,
    addServiceToConfiguration "ITU-T Recommendation Q.824.1 (1996)":invalidReferenceError,
    addServiceToConfiguration "ITU-T Recommendation Q.824.1 (1996)":invalidReferenceError;;;
    REGISTERED AS {ocaManagedObjectClass 91};
```

7.1.11.3 Service package

The servicePackage object class is defined in ITU-T Recommendation Q.824.0 [46].

7.1.11.4 Reference service configuration

```
referenceServiceConfiguration MANAGED OBJECT CLASS
DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":servicePackage;
CHARACTERIZED BY
referenceServiceConfigurationPkg PACKAGE
BEHAVIOUR
referenceServiceConfigurationBhv BEHAVIOUR
DEFINED AS "An instance of this object class contains reference profiles for service
assignments which are referenced in ACTIONS on an instance of
configurationServiceManager.";;;;
CONDITIONAL PACKAGES
overridePkg
PRESENT IF "an instance supports it";
REGISTERED AS {ocaManagedObjectClass 92};
```

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7.2 Name bindings

7.2.1 Access channel-service package

accessChannel-servicePackage NAME BINDING SUBORDINATE OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":accessChannel AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":servicePackage AND SUBCLASSES; WITH ATTRIBUTE "CCITT Recommendation M.3100":cTPId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE; REGISTERED AS {ocaNameBinding 1};

7.2.2 Access port profile-managed element

accessPortProfile-managedElement NAME BINDING SUBORDINATE OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":accessPortProfile AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS "CCITT Recommendation M.3100(1992)":managedElement AND SUBCLASSES; WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":accessPortProfileId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE DELETES-CONTAINED-OBJECTS; REGISTERED AS {ocaNameBinding 2};

7.2.3 Access port profile-service package

```
accessPortProfile-servicePackage NAME BINDING

SUBORDINATE OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":accessPortProfile

AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":servicePackage

AND SUBCLASSES;

WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":accessPortProfileId;

CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE DELETES-CONTAINED-OBJECTS;

REGISTERED AS {ocaNameBinding 3};
```

7.2.4 Customer observation-ETSI access port

```
customerObservation-etsiAccessPort NAME BINDING
SUBORDINATE OBJECT CLASS customerObservation AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS etsiAccessPort AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE;
REGISTERED AS {ocaNameBinding 4};
```

7.2.5 Customer observation-ETSI customized resource

```
customerObservation-etsiCustomizedResource NAME BINDING
    SUBORDINATE OBJECT CLASS
                                    customerObservation AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS
                                    etsiCustomizedResource AND SUBCLASSES;
   WITH ATTRIBUTE
                                    "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE;
```

REGISTERED AS {ocaNameBinding 5};

Customer observation-ETSI directory number E.164 7.2.6

```
customerObservation-etsiDirectoryNumberE164 NAME BINDING
   SUBORDINATE OBJECT CLASS
                                    customerObservation AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS
                                    etsiDirectoryNumberE164 AND SUBCLASSES;
   WITH ATTRIBUTE
                                     "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE;
REGISTERED AS {ocaNameBinding 6};
```

7.2.7 Customer profile-managed element

```
customerProfile-managedElement NAME BINDING
                                     "ITU-T Recommendation Q.824.0 (1996)":customerProfile
   SUBORDINATE OBJECT CLASS
                                    AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS
                                    "CCITT Recommendation M.3100(1992)":managedElement
                                    AND SUBCLASSES;
   WITH ATTRIBUTE
                                    "ITU-T Recommendation Q.824.0 (1996)":customerProfileId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 7};
```

7.2.8 Customer profile-service package

```
customerProfile-servicePackage NAME BINDING
   SUBORDINATE OBJECT CLASS
                                    "ITU-T Recommendation Q.824.0 (1996)":customerProfile
                                    AND SUBCLASSES;
                                    "ITU-T Recommendation Q.824.0 (1996)":servicePackage
   NAMED BY SUPERIOR OBJECT CLASS
                                    AND SUBCLASSES;
   WITH ATTRIBUTE
                                    "ITU-T Recommendation Q.824.0 (1996)":customerProfileId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 8};
```

7.2.9 Customized supplementary service-general ISDN service container

```
customizedSupplementaryService-generalIsdnServiceContainer NAME BINDING
   SUBORDINATE OBJECT CLASS
                                    customizedSupplementaryService AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS
                                    generalIsdnServiceContainer AND SUBCLASSES;
   WITH ATTRIBUTE
                                    "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE;
REGISTERED AS {ocaNameBinding 9};
```

Customized supplementary service-general PSTN service container 7.2.10

```
customizedSupplementaryService-generalPstnServiceContainer NAME BINDING
    SUBORDINATE OBJECT CLASS
                                    customizedSupplementaryService AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS
                                    generalPstnServiceContainer AND SUBCLASSES;
                                     "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
   WITH ATTRIBUTE
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE;
REGISTERED AS {ocaNameBinding 10};
```

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7.2.11 Customized supplementary service-non ISDN service

customizedSupplementaryService nonIsdnService NAME BINDING SUBORDINATE OBJECT CLASS customizedSupplementaryService AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS nonIsdnService AND SUBCLASSES; WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE; REGISTERED AS {ocaNameBinding 11};

7.2.12 Customized supplementary service-service package

```
customizedSupplementaryService-servicePackage NAME BINDING
SUBORDINATE OBJECT CLASS customizedSupplementaryService AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":servicePackage
AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE;
REGISTERED AS {ocaNameBinding 12};
```

7.2.13 Directory number-managed element

directoryNumber-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":directoryNumber
AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "CCITT Recommendation M.3100(1992)":managedElement
AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":directoryNumberId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE;
REGISTERED AS {ocaNameBinding 13};

7.2.14 ETSI access channel-ETSI access port

etsiAccessChannel-etsiAccessPort NAME BINDING SUBORDINATE OBJECT CLASS etsiAccessChannel AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS etsiAccessPort AND SUBCLASSES; WITH ATTRIBUTE "CCITT Recommendation M.3100:1992":cTPId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE; REGISTERED AS {ocaNameBinding 14};

7.2.15 ETSI access port-managed element

```
etsiAccessPort-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS etsiAccessPort AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "CCITT Recommendation M.3100(1992)":managedElement
AND SUBCLASSES;
WITH ATTRIBUTE "CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 15};
```

7.2.16 ETSI bearer service-customer profile

```
etsiBearerService-customerProfile NAME BINDING
SUBORDINATE OBJECT CLASS etsiBearerService AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":customerProfile
AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":bearerServiceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 16};
```

7.2.17 ETSI bearer service- general ISDN service container

```
etsiBearerService-generalIsdnServiceContainer NAME BINDING
SUBORDINATE OBJECT CLASS etsiBearerService AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS generalIsdnServiceContainer AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":bearerServiceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 17};
```

7.2.18 ETSI bearer service-service package

```
etsiBearerService-servicePackage NAME BINDING

SUBORDINATE OBJECT CLASS etsiBearerService AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":servicePackage

AND SUBCLASSES;

WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":bearerServiceId;

CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE DELETES-CONTAINED-OBJECTS;

REGISTERED AS {ocaNameBinding 18};
```

7.2.19 ETSI customized Resource-customer profile

```
etsiCustomizedResource-customerProfile NAME BINDING
SUBORDINATE OBJECT CLASS etsiCustomizedResource AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":customerProfile
AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":customizedResourceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE;
REGISTERED AS {ocaNameBinding 19};
```

7.2.20 ETSI supplementary service - service independent-general ISDN service container

etsiSupplementaryServiceServiceIndependent-generalIsdnServiceContainer NAME BINDING SUBORDINATE OBJECT CLASS etsiSupplementaryServiceServiceIndependent AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS generalIsdnServiceContainer AND SUBCLASSES; WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE;

REGISTERED AS {ocaNameBinding 20};

7.2.21 ETSI supplementary service - service independent-general PSTN service container

etsiSupplementaryServiceServiceIndependent-generalPstnServiceContainer NAME BINDING SUBORDINATE OBJECT CLASS etsiSupplementaryServiceServiceIndependent AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS generalPstnServiceContainer AND SUBCLASSES; WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE;

REGISTERED AS {ocaNameBinding 21};

7.2.22 ETSI supplementary service - service independent-service package

etsiSupplementaryServiceServiceIndependent-servicePackage NAME BINDING
SUBORDINATE OBJECT CLASS etsiSupplementaryServiceServiceIndependent AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":servicePackage
AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":supplementaryServiceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE;
REGISTERED AS {ocaNameBinding 22};

7.2.23 ETSI teleservice-customer profile

etsiTeleservice-customerProfile NAME BINDING SUBORDINATE OBJECT CLASS etsiTeleservice AND SUBCLASSES; NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":customerProfile AND SUBCLASSES; WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":teleserviceId; CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING; DELETE DELETES-CONTAINED-OBJECTS; REGISTERED AS {ocaNameBinding 23};

7.2.24 ETSI teleservice-general ISDN service container

```
etsiTeleservice-generalIsdnServiceContainer NAME BINDING
SUBORDINATE OBJECT CLASS etsiTeleservice AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS generalIsdnServiceContainer AND SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":teleserviceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 24};
```

7.2.25 ETSI teleservice-service package

```
etsiTeleservice-servicePackage NAME BINDING
SUBORDINATE OBJECT CLASS etsiTeleservice AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":servicePackage AND
SUBCLASSES;
WITH ATTRIBUTE "ITU-T Recommendation Q.824.0 (1996)":teleserviceId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 25};
```

7.2.26 General ISDN service container-managed element

generalIsdnServiceContainer-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS generalIsdnServiceContainer AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
"CCITT Recommendation M.3100(1992)":managedElement
AND SUBCLASSES;
WITH ATTRIBUTE serviceContainerId;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 26};

7.2.27 General PSTN service container-managed element

```
generalPstnServiceContainer-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS generalPstnServiceContainer AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
WITH ATTRIBUTE "CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 27};
```

7.2.28 Non ISDN service-customer profile

```
nonIsdnService-customerProfile NAME BINDING
SUBORDINATE OBJECT CLASS nonIsdnService AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS "ITU-T Recommendation Q.824.0 (1996)":customerProfile
AND SUBCLASSES;
WITH ATTRIBUTE nonIsdnServiceId
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE DELETES-CONTAINED-OBJECTS;
REGISTERED AS {ocaNameBinding 28};
```

7.2.29 Service manager-managed element

The serviceManger-managedElement name binding is defined in ITU-T Recommendation Q.824.0 [46].

The servicePackage-managedElement name binding is defined in ITU-T Recommendation Q.824.0 [46].

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7.3 Definition of packages

7.3.1 Administrative state package

```
adminStatePkg PACKAGE
ATTRIBUTES
"CCITT Recommendation X.721:1992":adminstrativeState GET-REPLACE;
REGISTERED AS {ocaPackage 1};
```

7.3.2 Automatic invocation package

```
automaticInvocationPkg PACKAGE
   ATTRIBUTES
   "ITU-T Recommendation Q.824.2 (1996)":automaticInvocation GET-REPLACE;
REGISTERED AS {ocaPackage 2};
```

7.3.3 Call completion busy recall mode package

```
callCompletionBusyRecallModePkg PACKAGE
   ATTRIBUTES
   callCompletionBusyRecallMode GET-REPLACE;
REGISTERED AS {ocaPackage 3};
```

7.3.4 Call completion no reply recall mode package

```
callCompletionNoReplyRecallModePkg PACKAGE
   ATTRIBUTES
   callCompletionNoReplyRecallMode GET-REPLACE;
REGISTERED AS {ocaPackage 4};
```

7.3.5 Call diversion restrictions package

```
callDiversionRestrictionsPkg PACKAGE
   ATTRIBUTES
   callDiversionRestrictions GET-REPLACE;
REGISTERED AS {ocaPackage 5};
```

7.3.6 Connection type package

7.3.7 Customer characteristics package

```
customerCharacteristicsPkg PACKAGE
BEHAVIOUR
customerCharacteristicsPkgBhv BEHAVIOUR
DEFINED AS "The Customer Type attribute specifies whether the customer profile is for:
- a single line customer; or
- a hot line customer; or
- a multi line customer.
- 'customerType' attribute value = 'singleLine': The customer profile instance
may be related to at most one access Port instance:
In the case where the access port is analogue or digital the customer profile is
related to a single directory Number instance and may contain CEPT or non-
standard supplementary services.
In the case of a basicAccess / primaryRateAccess the customer profile may be
related to one or more directory Number instances and contains at least one
bearer- and/or teleservice.
```

customerType' attribute value = 'multiLinePBX' or 'multiLineNonPBX ': The customer profile instance may be related to several instances of access Port which may be of different architecture: In case of an homogeneous analogue access architecture the customer profile is non-related to one or more directory number instance(s) and may contain CEPT or standard supplementary services. In case of an homogeneous digital access architecture the customer profile is related to one or more directory number instance(s) and may contain CEPT or non-standard supplementary services. In case of an homogeneous basic access / primary rate access architecture the customer profile may be related to one or more directory number instance(s) and contains at least one bearer- and/or teleservice. In case of a mixture of analogue- / ISDN- / digital access the customer profile may be related to one or more directory number instance(s) and contains for each access port architecture at least one customized Resource instance and its appropriate service instance(s). The Customer Category attribute identifies the customer as being for instance:

- a standard customer (default value);
- a coin box;
- a mobile customer;
- a test equipment;
- an operator etc.

The Customer Type attribute is a single-valued, read-write attribute. In the initial state, it has the 'singleLine' value. Changing the value of the Customer Type attribute generates an attribute value change notification.

The Customer Category attribute is a single-valued, read-write attribute. In the initial state, it has the 'standard' value. Changing the value of the Customer Category attribute generates an attribute value change notification.";; ATTRIBUTES customerType DEFAULT VALUE CustomerAdminModuleV2.customerTypeDefault GET-REPLACE, customerCategory DEFAULT VALUE

customercategory

GET-REPLACE, DEFAULT VALUE CustomerAdminModuleV2.customerCategoryDefault GET-REPLACE;

REGISTERED AS {ocaPackage 7};

7.3.8 Customer control permission package

```
customerControlPermissionPkg PACKAGE
   ATTRIBUTES
   customerControlPermission GET-REPLACE;
REGISTERED AS {ocaPackage 8};
```

7.3.9 Directionality package

```
directionalityPkg PACKAGE
   ATTRIBUTES
   directionality GET SET-BY-CREATE;
REGISTERED AS {ocaPackage 9};
```

7.3.10 General service list package

```
generalServiceListPkg PACKAGE
   ATTRIBUTES
   generalServiceList GET-REPLACE;
REGISTERED AS {ocaPackage 10};
```

7.3.11 Local defined number package

```
localDefinedNumberPkg PACKAGE
   ATTRIBUTES
   localDefinedNumber   GET-REPLACE;
REGISTERED AS {ocaPackage 11};
```

7.3.12 Local packet handler package

```
localPacketHandlerPkg PACKAGE
   BEHAVTOUR
   localPacketHandlerPkgBhv BEHAVIOUR
       DEFINED AS "According to ETS 300 007, the value of the notificationClass attribute shall be
        restricted to noNotificationClass and conditionalNotification respectively.
       The layer2InfoEntityPtr shall only point to an instance of layerEntityLAPB in the case of
       packet B channel or to an instance of layerEntityLAPD in the case of packet D channel or its
        subclasses.
       The layer3InfoEntityPtr shall point to the appropriate instance of layerEntityX25PLP or
        layerEntityX25PLPShared or its subclasses.";;
   ATTRIBUTES
    "ITU-T Recommendation Q.824.1 (1996)": notificationClass
                                                                           GET-REPLACE
                       PERMITTED VALUES CustomerAdminModuleV2.PermittedNotificationClass,
    "ITU-T Recommendation Q.824.1 (1996)": layer2InfoEntityPtr GET-REPLACE,
    "ITU-T Recommendation Q.824.1 (1996)": layer3InfoEntityPtr
                                                                           GET-REPLACE;
REGISTERED AS {ocaPackage 12};
```

7.3.13 Maximum number of information channels package

```
maxNumOfInfoChannelsPkg PACKAGE
BEHAVIOUR
maxNumOfInfoChannelsPkgBhv BEHAVIOUR
DEFINED AS "The value of the maxNumOfInfoChannels attribute shall not be in contradiction
with the value of this attribute in the corresponding bearer resp. teleservice object
instance.";;
ATTRIBUTES
maxNumOfInfoChannels GET SET-BY-CREATE;
REGISTERED AS {ocaPackage 13};
```

7.3.14 Maximum number of total calls package

```
maxNumOfTotalCallsPkg PACKAGE
BEHAVIOUR
maxNumOfTotalCallsPkgBhv BEHAVIOUR
DEFINED AS "The value of the maxNumOfTotalCalls attribute shall not be in contradiction with
the value of this attribute in the corresponding bearer resp. teleservice object
instance.";;
ATTRIBUTES
maxNumOfTotalCalls GET SET-BY-CREATE;
REGISTERED AS {ocaPackage 14};
```

7.3.15 Message waiting indication controlling user package

```
mwiControllingUserPkg PACKAGE
   ATTRIBUTES
   mwiControllingUser GET-REPLACE;
REGISTERED AS {ocaPackage 15};
```

7.3.16 Message waiting indication receiver pointer package

```
mwiReceiverPointerPkg PACKAGE
    ATTRIBUTES
    mwiReceiverPointer GET-REPLACE;
REGISTERED AS {ocaPackage 16};
```

7.3.17 Metering counter package

```
meteringCounterPkg PACKAGE
BEHAVIOUR
meteringCounterPkgBhv BEHAVIOUR
DEFINED AS "Both etsiDirectoryNumberE164 and etsiAccessPort have the conditional package
meteringCounterPkg containing the meteringCounter attribute. This package shall only be
instantiated with one of these two object classes or their subclasses within one managed
element.";;
ATTRIBUTES
meteringCounter GET;
REGISTERED AS {ocaPackage 17};
```

7.3.18 Modification permission package

modificationPermissionPkg PACKAGE
 ATTRIBUTES
 modificationPermission GET-REPLACE;
REGISTERED AS {ocaPackage 18};

7.3.19 Observation mode package

observationModePkg PACKAGE ATTRIBUTES observationMode GET-REPLACE; REGISTERED AS {ocaPackage 19};

7.3.20 Origin for analysis package

originForAnalysisPkg PACKAGE ATTRIBUTES "EN 300 292 (1998)":originForAnalysis REGISTERED AS {ocaPackage 20};

GET-REPLACE;

7.3.21 Origin for charging package

originForChargingPkg PACKAGE ATTRIBUTES originForCharging GET-REPLACE; REGISTERED AS {ocaPackage 21};

7.3.22 Origin for routeing package

originForRouteingPkg PACKAGE
 ATTRIBUTES
 "EN 300 292 (1998)":originForRouteing
REGISTERED AS {ocaPackage 22};

GET-REPLACE;

7.3.23 Override package

```
overridePkg PACKAGE
BEHAVIOUR
overridePkgBhv BEHAVIOUR
DEFINED AS "If the override attribute is not empty set, an addServiceToConfiguration action
shall replace an instance of a service defining object class indicated in this attribute if this
object class is part of the contained profile. Else, an existing instance of a service defining
object class shall not be replaced. In both cases, no error information shall be indicated.";;
ATTRIBUTES
override GET-REPLACE ADD-REMOVE;
REGISTERED AS {ocaPackage 23};
```

7.3.24 Owned list package

ownedListPkg PACKAGE
ATTRIBUTES
ownedList GET-REPLACE ADD-REMOVE,
listShared DEFAULT VALUE
CustomerAdminModuleV2.listSharedDefault
GET-REPLACE,
maxNumberOfEntries GET-REPLACE;
REGISTERED AS {ocaPackage 24};

7.3.25 Ported directory number package

```
portedDirectoryNumberPkg PACKAGE
    ATTRIBUTES
    routeingInformation GET-REPLACE;
REGISTERED AS {ocaPackage 25};
```

7.3.26 Remotely controlled service package

```
remotelyControlledServicePkg PACKAGE
ATTRIBUTES
remotelyControlledService GET-REPLACE;
REGISTERED AS {ocaPackage 26};
```

7.3.27 Shared list package

```
sharedListPkg PACKAGE
   ATTRIBUTES
   sharedList GET-REPLACE ADD-REMOVE;
REGISTERED AS {ocaPackage 27};
```

7.3.28 Semipermanent line package

semipermanentLinePkg PACKAGE BEHAVIOUR

```
semipermanentLinePkgBhv BEHAVIOUR

DEFINED AS "This information model only covers the aspect of relationship of a customer

configuration to a semi permanent connection. The semi permanent connection as such might e.g.

be modelled by using the M3100:crossConnection object class or a subclass of it. If the semi

permanent connection as such is managed by this means, the semipermanentLine attribute should

not be used. Instead, the information whether a customer configuration is involved in a semi

permanent line can be retrieved by reading the crossConnection object pointer attribute.";;

ATTRIBUTES

semipermanentLine DEFAULT VALUE

Customer Advised and 20 semipermanentLineDefault
```

CustomerAdminModuleV2.semipermanentLineDefault GET-REPLACE;

```
REGISTERED AS {ocaPackage 28};
```

7.3.29 Service activated package

```
serviceActivatedPkg PACKAGE
   ATTRIBUTES
   serviceActivated GET SET-BY-CREATE;
REGISTERED AS {ocaPackage 29};
```

7.3.30 Voice messaging number package

```
voiceMessagingNumberPkg PACKAGE
    ATTRIBUTES
    voiceMessagingNumber GET-REPLACE;
REGISTERED AS {ocaPackage 30};
```

7.4 Definition of attributes

```
accountSuspension ATTRIBUTE
    WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.BlockingDirection;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    accountSuspensionBhv BEHAVIOUR
    DEFINED AS "It gives the blocking direction for blocking (none, incoming, outgoing, bothways)
    due to non-payment.";;
REGISTERED AS {ocaAttribute 1};
adminBlocking ATTRIBUTE
    WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.BlockingDirection;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    adminBlockingBhv BEHAVIOUR
    DEFINED AS "It gives the blocking direction for administrative blocking (none, incoming,
    outgoing, bothways)";;
REGISTERED AS {ocaAttribute 2};
adviceOfChargeActivation ATTRIBUTE
    WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.AdviceOfChargeActivation;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    adviceOfChargeActivationBhv BEHAVIOUR
    DEFINED AS "Flag indicating whether the service is available for all calls automatically or on a
    per call basis.";;
REGISTERED AS {ocaAttribute 3};
```

alarmCallType ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.AlarmCallType; MATCHES FOR EQUALITY; BEHAVIOUR alarmCallTypeBhv BEHAVIOUR DEFINED AS "It gives the type of alarm call (casual, regular consecutive days, regular specified days) and the related program if the type is not casual.";; REGISTERED AS {ocaAttribute 4}; announcementNumber ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Number; MATCHES FOR EQUALITY; BEHAVIOUR announcementNumberBhv BEHAVIOUR DEFINED AS "It gives the announcement number (INTEGER). Which announcement corresponds with an announcement number is a matter of local implementation.";; REGISTERED AS {ocaAttribute 5}; assocDefaultDN ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.IsdnNb; MATCHES FOR EQUALITY; BEHAVIOUR assocDefaultDNBhv BEHAVIOUR DEFINED AS "It gives the default directory number for an MSN configuration.";; REGISTERED AS {ocaAttribute 6}; callCompletionBusyRecallMode ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallCompletionRecallMode; MATCHES FOR EQUALITY; BEHAVIOUR callCompletionBusyRecallModeBhv BEHAVIOUR DEFINED AS "Flag indicating whether a completion of calls to busy subscribers recall is offered to the termination which activated the service or to all compatible terminations.";; REGISTERED AS {ocaAttribute 7}; callCompletionNoReplyRecallMode ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallCompletionRecallMode; MATCHES FOR EQUALITY; BEHAVIOUR callCompletionNoReplyRecallModeBhv BEHAVIOUR DEFINED AS "It is a flag indicating whether a completion of calls on no replying customer recall is offered to the termination which activated the service or to all compatible terminations.";; REGISTERED AS {ocaAttribute 8}; callDiversionRestrictions ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallDiversionRestrictions; MATCHES FOR EQUALITY; BEHAVIOUR callDiversionRestrictionsBhv BEHAVIOUR DEFINED AS "It indicates whether the forwarded-to number specified at remote activation shall have some restrictions (choice within a specified geographical area or belonging to a list of predetermined forwarded-to numbers) or not.";; REGISTERED AS {ocaAttribute 9}; callForwardActiveNotification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR callForwardActiveNotificationBhv BEHAVIOUR DEFINED AS "Flag indicating whether the served user is to be notified that call forwarding is active.";; REGISTERED AS {ocaAttribute 10}; callForwardCallingNotification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallForwardCallingNotification; MATCHES FOR EQUALITY; BEHAVIOUR callForwardCallingNotificationBhv BEHAVIOUR DEFINED AS "Flag indicating whether the calling user is to be notified that his call has been forwarded.";; REGISTERED AS {ocaAttribute 11}; callForwardReleaseNotification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallForwardReleaseNotification; MATCHES FOR EQUALITY; BEHAVIOUR callForwardReleaseInformationBhy BEHAVIOUR DEFINED AS "Flag indicating whether served user releases number information to forwarded-to user.";; REGISTERED AS {ocaAttribute 12};

callForwardServedNotification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallForwardServedNotification; MATCHES FOR EQUALITY; BEHAVIOUR callForwardServedNotificationBhv BEHAVIOUR DEFINED AS "Flag indicating whether served user receives notification that a call has been forwarded.";; REGISTERED AS {ocaAttribute 13}; callWaitingCallingNotification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CallWaitingCallingNotification; MATCHES FOR EQUALITY; BEHAVIOUR callWaitingCallingNotificationBhv BEHAVIOUR DEFINED AS "Flag indicating whether the calling user is to be notified that his call is waiting.";; REGISTERED AS {ocaAttribute 14}; catastrophe ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Catastrophe; MATCHES FOR EQUALITY; BEHAVIOUR catastropheBhy BEHAVIOUR DEFINED AS "It indicates the preference category of the access during catastrophe.";; REGISTERED AS {ocaAttribute 15}; channelType ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.ChannelType; MATCHES FOR EQUALITY; BEHAVIOUR channelTypeBhv BEHAVIOUR DEFINED AS "It specifies the channel type (e.g. ISDN D-channel, non-ISDN channel).";; REGISTERED AS {ocaAttribute 16}; connectionType ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.ConnectionType; MATCHES FOR EOUALITY; BEHAVIOUR connectionTypeBhv BEHAVIOUR DEFINED AS "It indicates whether it is a point to point or a point to multipoint configuration.";; REGISTERED AS {ocaAttribute 17}; ctmId ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.DialledDigits; MATCHES FOR EQUALITY; BEHAVIOUR ctmIdBhv BEHAVIOUR DEFINED AS "It provides the relevant data for the search of DECT terminals being part of a CTM configuration.";; REGISTERED AS {ocaAttribute 18}; cUGBarring ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CUGBarring; MATCHES FOR EQUALITY; BEHAVIOUR cUGBarringBhv BEHAVIOUR DEFINED AS "This attribute maintains the intra-CUG restriction of the general subscription option in ETS 300 136. It may have one of the following values: none, incomingCallsBarred or outgoingCallsBarred.";; REGISTERED AS {ocaAttribute 19}; cUGDataNetworkIdentification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CUGDataNetworkIdentification; MATCHES FOR EQUALITY; BEHAVIOUR cUGDataNetworkIdentificationBhv BEHAVIOUR DEFINED AS "This information is signalled during set-up of a CUG call and serves (in conjunction with the closed user group interlock code) to uniquely identify the CUG in the international network. It can be thought of as the area code of the CUG.";; REGISTERED AS {ocaAttribute 20}; cUGIndex ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CUGIndex; MATCHES FOR EQUALITY; BEHAVIOUR cUGIndexBhy BEHAVIOUR DEFINED AS "cUGIndex of general subscription option in ETS 300 136 must be explicitly assigned upon object creation. The cUGIndex is used by the calling user to select a particular CUG when originating a call.";; REGISTERED AS {ocaAttribute 21};

cUGInterlockCode ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CUGInterlockCode; MATCHES FOR EQUALITY; BEHAVIOUR cUGInterlockCodeBhv BEHAVIOUR DEFINED AS "The attribute cUGInterlockCode must be explicitly assigned upon object creation. The attribute is a means of identifying a CUG membership within the network.";; REGISTERED AS {ocaAttribute 22}; customerCategory ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CustomerCategory; MATCHES FOR EQUALITY; BEHAVIOUR customerCategoryBhv BEHAVIOUR DEFINED AS "The customer category attribute identifies the customer as being for instance: - a standard customer, - a coin box, - a mobile customer. - a test equipment, - an operator, etc.";; REGISTERED AS {ocaAttribute 23}; customerControlPermission ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR customerControlPermissionBhv BEHAVIOUR DEFINED AS "This attribute indicates whether a customer is allowed to activate / deactivate a service allowing for customer control.";; REGISTERED AS {ocaAttribute 24}; customerType ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.CustomerType; MATCHES FOR EQUALITY; BEHAVIOUR customerTypeBhv BEHAVIOUR DEFINED AS "It specifies whether the customer profile is for a single line or for a multi-line customer.";; REGISTERED AS {ocaAttribute 25}; dChannelLayer1Activation ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.DChannelActivation; MATCHES FOR EQUALITY; BEHAVIOUR dChannelLayer1ActivationBhv BEHAVIOUR DEFINED AS "It specifies whether layer one has to be held active.";; REGISTERED AS {ocaAttribute 26}; dChannelLayer2Activation ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.DChannelActivation; MATCHES FOR EOUALITY; BEHAVIOUR dChannelLayer2ActivationBhv BEHAVIOUR DEFINED AS "It specifies whether layer two has to be held active.";; REGISTERED AS {ocaAttribute 27}; detailClass ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.DetailClass; MATCHES FOR EQUALITY; BEHAVIOUR detailClassBhv BEHAVIOUR DEFINED AS "It defines the detail class for the detailed billing service. This detail can be limited e.g. to international calls, national long distance calls, special service calls, successful calls.";; REGISTERED AS {ocaAttribute 28}; directionality ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Directionality; MATCHES FOR EQUALITY; BEHAVIOUR directionalityBhv BEHAVIOUR DEFINED AS "It indicates the directionality (incoming, outgoing, bothways, where bothways is default value)";; REGISTERED AS {ocaAttribute 29}; doNotDisturb ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR doNotDisturbBhy BEHAVIOUR DEFINED AS "It indicates whether the do-not-disturb announcement is activated (TRUE) or not (FALSE).";; REGISTERED AS {ocaAttribute 30};

etsiDeflectingNumberNotification ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.EtsiDeflectingNumberNotification; MATCHES FOR EQUALITY; BEHAVIOUR etsiDeflectingNumberNotificationBhv BEHAVIOUR DEFINED AS "It indicates the subscription option of whether a calling user receives notification that his call has been deflected (1) or not (0). In the case the use is to be notified, the deflected to number may be sent to the originator of the call (2).";; REGISTERED AS {ocaAttribute 31}; etsiE164DirectoryNumber ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.EtsiE164DirectoryNumber; MATCHES FOR EQUALITY; BEHAVIOUR etsiE164DirectoryNumberBhv BEHAVIOUR DEFINED AS "It represents the ISDN number according to the ISDN numbering plan defined in CCITT Recommendation E.164. It is composed of two fields: - country code (optional); - national significant number. The national significant number is itself composed of two fields: - national destination code (optional);
- customer number.";; REGISTERED AS {ocaAttribute 32}; fixedDestinationNumber ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.FixedDestinationNumber; MATCHES FOR EOUALITY; BEHAVIOUR fixedDestinationNumberBhv BEHAVIOUR DEFINED AS "It gives the directory number to which the call shall be forwarded. Its value NULL means that calls are not to be forwarded to a fixed destination unless the OS or the customer by remote control changes its value to a directory number.";; REGISTERED AS {ocaAttribute 33}; fixedPrograms ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Programs; MATCHES FOR EQUALITY; BEHAVIOUR fixedProgramsBhv BEHAVIOUR DEFINED AS "It gives the assigned fixed barring programs.";; REGISTERED AS {ocaAttribute 34}; forwardImmediately ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR forwardImmediatelyBhv BEHAVIOUR DEFINED AS "It indicates call forward immediately (TRUE) or call forward on no reply (FALSE).";; REGISTERED AS {ocaAttribute 35}; generalServiceList ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.GeneralServiceList; MATCHES FOR EQUALITY; BEHAVIOUR generalServiceListBhv BEHAVIOUR DEFINED AS "It lists the services having no configurable attributes which are available generally for the respective customer configurations.";; REGISTERED AS {ocaAttribute 36}; interCUGAccess ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.InterCUGAccess; MATCHES FOR EQUALITY; BEHAVIOUR interCUGAccessCodeBhv BEHAVIOUR DEFINED AS "Inter-CUG access of per service subscription option in ETS 300 136. The values are none, outgoingAccess, incomingAccess and outgoingAndIncomingAccess";; REGISTERED AS {ocaAttribute 37}; interceptionReason ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.NameType; MATCHES FOR EQUALITY; BEHAVIOUR interceptionReasonBhv BEHAVIOUR DEFINED AS "It gives the reason for the interception";; REGISTERED AS {ocaAttribute 38};

kindOfAlarmCall ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.KindOfAlarmCall; MATCHES FOR EQUALITY; BEHAVIOUR kindOfAlarmCallBhv BEHAVIOUR DEFINED AS "It gives the kind of alarm call (manual, automatic, semi automatic).";; REGISTERED AS {ocaAttribute 39}; lineCharacteristics ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.LineCharacteristics; MATCHES FOR EQUALITY; BEHAVIOUR lineCharacteristicsBhv BEHAVIOUR DEFINED AS "It specifies the transmission characteristics of the analogue line (e.g. attenuation).";; REGISTERED AS {ocaAttribute 40}; lineSignalling ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.LineSignalling; MATCHES FOR EOUALITY; BEHAVIOUR lineSignallingBhv BEHAVIOUR DEFINED AS "It specifies which signalling the analogue access port uses for the line (e.g. Dual Tone Multi Frequency (DTMF) or pulse dialling).";; REGISTERED AS {ocaAttribute 41}; listShared ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR listSharedBhv BEHAVIOUR DEFINED AS "It indicates whether the owned list is shared (TRUE) or not (FALSE).";; REGISTERED AS {ocaAttribute 42}; localDefinedNumber ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.EtsiE164DirectoryNumber; MATCHES FOR EOUALITY; BEHAVIOUR localDefinedNumberBhv BEHAVIOUR DEFINED AS "It is an identifier for the access port that is used if in a configuration the port itself is not associated with a E.164 directory number.";; REGISTERED AS {ocaAttribute 43}; maintBlocking ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.MaintBlocking; MATCHES FOR EQUALITY; BEHAVIOUR maintBlockingBhv BEHAVIOUR DEFINED AS "It gives the blocking status for maintenance blocking.";; REGISTERED AS {ocaAttribute 44}; maxNumberOfEntries ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Number; MATCHES FOR EQUALITY; BEHAVIOUR maxNumberOfEntriesBhv BEHAVIOUR DEFINED AS "It gives the maximum number of entries for abbreviated dialling.";; REGISTERED AS {ocaAttribute 45}; maxNumOfInfoChannels ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.MaxNb; MATCHES FOR EQUALITY; BEHAVIOUR maxNumOfInfoChannelsBhv BEHAVIOUR DEFINED AS "It gives the maximum number of information channels.";; REGISTERED AS {ocaAttribute 46}; maxNumOfTotalCalls ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.MaxNb; MATCHES FOR EQUALITY; BEHAVIOUR maxNumOfTotalCallsBhv BEHAVIOUR DEFINED AS "It gives the maximum number of total calls.";; REGISTERED AS {ocaAttribute 47}; maxNumberOfWaitingCalls ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Number; MATCHES FOR EQUALITY, ORDERING; BEHAVIOUR maxNumberOfWaitingCallsBhv BEHAVIOUR DEFINED AS "The maximum number of calls that can be waiting.";; REGISTERED AS {ocaAttribute 48};

messageWaitingIndicator ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; messageWaitingIndicatorBhv BEHAVIOUR BEHAVIOUR DEFINED AS "It indicates if one or more messages are waiting for the receiving user (TRUE).";; REGISTERED AS {ocaAttribute 49}; meteringCounter ATTRIBUTE DERIVED FROM "CCITT Recommendation X.721:1992":counter; BEHAVIOUR meteringCounterBhv BEHAVIOUR DEFINED AS "It gives the current value of the metering counter for charging.";; REGISTERED AS {ocaAttribute 50}; modificationPermission ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR modificationPermissionBhy BEHAVIOUR DEFINED AS "This attribute indicates whether a customer is allowed to modify a service allowing for customer control.";; REGISTERED AS {ocaAttribute 51}; mwiControllingUser ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.EtsiE164DirectoryNumber; MATCHES FOR EQUALITY; mwiControllingUserBhv BEHAVIOUR BEHAVIOUR DEFINED AS "It gives the controlling user's directory number.";; REGISTERED AS {ocaAttribute 52}; mwiInvocationMode ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; mwiInvocationModeBhy BEHAVIOUR BEHAVIOUR DEFINED AS "It indicates when the service is to be invocated either when the receiving user makes an outgoing call (TRUE) or on activation of the service (by the controlling user) (FALSE).";; REGISTERED AS {ocaAttribute 53}; mwiReceiverPointer ATTRIBUTE
WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Pointer; MATCHES FOR EQUALITY; mwiReceiverPointerBhv BEHAVIOUR BEHAVIOUR DEFINED AS "It gives the associated mwiReceiver instance.";; REGISTERED AS {ocaAttribute 54}; nonIsdnServiceId ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.NameType; MATCHES FOR EQUALITY; BEHAVIOUR nonIsdnServiceIdBhv BEHAVIOUR DEFINED AS "It gives the RDN.";; REGISTERED AS {ocaAttribute 55}; observationMode ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Number; MATCHES FOR EQUALITY; BEHAVIOUR observationModeBhv BEHAVIOUR DEFINED AS "It distinguishes between e.g. charging observation, expensive call monitoring, and quality of service verification, or between observation of incoming calls and/or outgoing calls, etc. Which observation mode corresponds with the value of this attribute number is a matter of local implementation.";; REGISTERED AS {ocaAttribute 56}; originForCharging ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Origin; MATCHES FOR EQUALITY; BEHAVIOUR originForChargingBhv BEHAVIOUR DEFINED AS "It groups customer profiles for charging and/or tariffing purposes.";; REGISTERED AS {ocaAttribute 57};

override ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Override; MATCHES FOR EQUALITY; BEHAVIOUR overrideBhv BEHAVIOUR DEFINED AS "It identifies whether an instance of a service defining object class indicated in this attribute shall be replaced by an addServiceToConfiguration action if this object class is part of the contained profile. The instantiation of conditional packages is considered in this attribute as an option.";; REGISTERED AS {ocaAttribute 58}; ownedList ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.OwnedList; MATCHES FOR EQUALITY; BEHAVIOUR ownedListBhv BEHAVIOUR DEFINED AS "It gives an individual list for abbreviated dialling.";; REGISTERED AS {ocaAttribute 59}; permittedMobileArea ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Area; MATCHES FOR EQUALITY; BEHAVIOUR permittedMobileAreaBhv BEHAVIOUR DEFINED AS "It gives the area of the network in which the DECT terminal can make and receive calls.";; REGISTERED AS {ocaAttribute 60}; pin ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Pin; MATCHES FOR EQUALITY; BEHAVIOUR pinBhv BEHAVIOUR DEFINED AS "It contains the PIN. The initial value and the default value of this attribute is determined by the network element resource on its own.";; REGISTERED AS {ocaAttribute 61}; pinProfileRef ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.PinProfileRef; MATCHES FOR EQUALITY; BEHAVIOUR pinProfileRefBhv BEHAVIOUR DEFINED AS "It identifies the PIN controlled customized services assigned to a customer configuration for which the PIN given in the pin attribute is valid. It is a choice between an INTEGER representing pre-defined profiles on exchange level and a SET OF ObjectClass representing supplementary service object classes.";; REGISTERED AS {ocaAttribute 62}; preferredCUGIndex ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.PreferredCUGIndex; MATCHES FOR EOUALITY; BEHAVIOUR preferredCUGIndexBhv BEHAVIOUR DEFINED AS "CUG index of general subscription option in ETS 300 136. It is used to identify the required CUG in the absence of a CUG index being included in the outgoing call request";; REGISTERED AS {ocaAttribute 63}; preselectedCarrier ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.PreselectedCarrier; MATCHES FOR EQUALITY; BEHAVIOUR preselectedCarrierBhv BEHAVIOUR DEFINED AS "It gives the preselected carrier. A carrierType value shall only appear once in this attribute.";; REGISTERED AS {ocaAttribute 64}; primaryDN ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR primaryDNBhv BEHAVIOUR DEFINED AS "It defines whether the line is a primary (TRUE) or secondary (FALSE) line of the customer.";; REGISTERED AS {ocaAttribute 65}; remotelyControlledService ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.RemotelyControlledService; MATCHES FOR EQUALITY; BEHAVIOUR remotelyControlledServiceBhv BEHAVIOUR DEFINED AS "It indicates which supplementary services the served user has subscribed for remote control.";; REGISTERED AS {ocaAttribute 66};

ringingSequence ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.RingingSequence; MATCHES FOR EQUALITY; BEHAVIOUR ringingSequenceBhv BEHAVIOUR DEFINED AS "It defines the characteristics of the ringing signal to be sent.";; REGISTERED AS {ocaAttribute 67}; routeingInformation ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.RouteingInformation; MATCHES FOR EQUALITY; BEHAVIOUR routeingInformationBhv BEHAVIOUR DEFINED AS "It gives the directory number porting information. If this attribute is empty string, the directory number is not ported. If it has NULL value, the routeing information is to be retrieved from another server (e.g. IN SCP). In all other cases, the information relevant for routeing is given.";; REGISTERED AS {ocaAttribute 68}; semipermanentLine ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.SemipermanentLine; MATCHES FOR EQUALITY; BEHAVIOUR semipermanentLineBhv BEHAVIOUR DEFINED AS "It indicates whether this entity is related to a semipermanent line (TRUE) or not (FALSE).";; REGISTERED AS {ocaAttribute 69}; serviceActivated ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR serviceActivatedBhv BEHAVIOUR DEFINED AS "It indicates whether the service is activated (TRUE) or not (FALSE).";; REGISTERED AS {ocaAttribute 70}; serviceContainerId ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.NameType; MATCHES FOR EQUALITY; BEHAVIOUR serviceContainerIdBhv BEHAVIOUR DEFINED AS "It gives the RDN.";; REGISTERED AS {ocaAttribute 71}; sharedList ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.SharedList; MATCHES FOR EQUALITY; BEHAVIOUR sharedListBhy BEHAVIOUR DEFINED AS "It is a pointer to one or more object instances of abbreviatedDialling representing shared lists.";; REGISTERED AS {ocaAttribute 72}; supplementaryServiceServiceDependentPtrList ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.PointerList; MATCHES FOR EQUALITY; BEHAVIOUR supplementaryServiceServiceDependentPtrListBhv BEHAVIOUR DEFINED AS "It points to the associated supplementaryServiceServiceDependent object instances.";; REGISTERED AS {ocaAttribute 73}; supplementaryServiceServiceIndependentPtrList ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.PointerList; MATCHES FOR EQUALITY; BEHAVIOUR supplementaryServiceServiceIndependentPtrListBhv BEHAVIOUR DEFINED AS "It points to the associated supplementaryServiceServiceIndependent object instances.";; REGISTERED AS {ocaAttribute 74}; timeOfDay ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TimeOfDay; MATCHES FOR EQUALITY; BEHAVIOUR timeOfDayBhv BEHAVIOUR DEFINED AS "It gives the time of day (hours and minutes) for the execution of the alarm call.";; REGISTERED AS {ocaAttribute 75};

userControlledPrograms ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.Programs; MATCHES FOR EQUALITY; BEHAVIOUR userControlledProgramsBhv BEHAVIOUR DEFINED AS "It gives the barring programs assigned by user control.";; REGISTERED AS {ocaAttribute 76}; uusServicelImplicit ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR uusServicelImplicitBhv BEHAVIOUR DEFINED AS "It indicates whether the service is available (TRUE) or not (FALSE) during origination and termination of calls by means of an implicit request.";; REGISTERED AS {ocaAttribute 77}; uusServicelExplicit ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR uusService1ExplicitBhv BEHAVIOUR DEFINED AS "It indicates whether the service is available (TRUE) or not (FALSE) during origination and termination of calls by means of an implicit request.";; REGISTERED AS {ocaAttribute 78}; uusService2 ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR uusService2Bhv BEHAVIOUR DEFINED AS "It is a flag indicating whether the service is available (TRUE) or not (FALSE) after the calling user has received an indication that the called user is being informed of the call and prior to the establishment of the connection.";; REGISTERED AS {ocaAttribute 79}; uusService3 ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR uusService3Bhv BEHAVIOUR DEFINED AS "It is a flag indicating whether the service is available (TRUE) or not (FALSE) only during the connection is established.";; REGISTERED AS {ocaAttribute 80}; variant ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.TrueFalse; MATCHES FOR EQUALITY; BEHAVIOUR variantBhy BEHAVIOUR DEFINED AS "It identifies whether the call is forwarded to the fixed destination immediately (TRUE) or after time out (FALSE).";; REGISTERED AS {ocaAttribute 81}; voiceMessagingNumber ATTRIBUTE WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.VoiceMessagingNumber; MATCHES FOR EQUALITY; BEHAVIOUR voiceMessagingNumberBhv BEHAVIOUR DEFINED AS "It gives the routeing information (directory number) to the voice messaging box in the voice messaging system.";; REGISTERED AS {ocaAttribute 82};

7.5 Definition of behaviours

No general behaviours were identified.
7.6.1 Add service to configuration

addServiceToConfiguration ACTION

BEHAVIOUR

addServiceToConfigurationBhv BEHAVIOUR

DEFINED AS "The action adds the subtrees contained in the referenceServiceConfiguration addressed with referenceServiceConfiguration instance to an already existing customerProfile or any object class of the subtree of it referenced with managedObjectClass and managedObjectInstance. The action first verifies that the referenceServiceConfiguration identified in the action is valid. If not the agent returns an invalid reference error. If elements in the referenceServiceConfiguration instance are conflicting with the destination configuration, the action shall be rejected without changing the customer configuration. The service(s) provided by the referenced referenceServiceConfiguration is (are) instantiated based on the definition provided by a referenceServiceConfiguration. Further data of existing object instances of the customer configuration (e.g. data which are configurable on a per subscriber basis) can be given with parameter customerData. The subcomponent attributeList of parameter customerData indicates how the data of the reference object classes / object instances (components of customerData) are replaced for the extended customer service configuration. The parameter selectionInformation indicates to which destination class / instance(s) the subtree under the specified referenceServiceConfiguration instance shall be added. The destination instance(s) may be selected by scope / filter mechanisms. The attribute values of conditional packages to be instantiated shall be supplied within the component customerData of the information syntax of the action. If the action is successful or partly executed, the reply may also contain the list of names of the object instances just created. How far the action was successful can be recognized from the executed value in the reply syntax. Optionally, services being not created may be indicated. If the action has failed, the action leaves the MIB unaffected (unchanged).";; MODE CONFIRMED; WITH INFORMATION SYNTAX CustomerAdminModuleV2.AddServiceToConfigurationRequest;

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WITH REPLY SYNTAX CustomerAdminModuleV2.AddServiceToConfigurationReply;

REGISTERED AS {ocaAction 1};

7.6.2 Change access port

changeAccessPort ACTION

BEHAVIOUR

changeAccessPortBhv BEHAVIOUR

DEFINED AS "This action is used to change the accessPort for a given customer profile. The action request identifies the customer profile with the old accessPort. The request also indicates the new accessPort to use.

The action verifies that the old accessPort is in service and assigned to the given customer profile, and that the new accessPort is valid. The new accessPort is considered valid if it exists and does not have a relationship with an accessPortProfile (it is not in service). If not, the agent returns an invalid reference error.

This action shall alter the relationship between accessPortProfile and the old accessPort to the new accessPort, create copies of the accessChannel instances under the new accessPort, change the pointers between customizedResource and accessChannel instances from old to new, and delete the old accessChannel instances.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX CustomerAdminModuleV2.ChangeAccessPortRequest;

WITH REPLY SYNTAX CustomerAdminModuleV2.ManagedInstancesNames;

REGISTERED AS {ocaAction 2};

7.6.3 Change directory number

changeDirectoryNumber ACTION

BEHAVIOUR

changeDirectoryNumberBhv BEHAVIOUR

 $\tt DEFINED AS$ "This action is used to change the <code>etsiEl64DirectoryNumber</code> for a given customer profile. The action request identifies the customer profile with the old

etsiE164DirectoryNumber. The request also indicates the new etsiE164DirectoryNumber to use and the interceptTreatmentTerm to apply to the old etsiE164DirectoryNumber. The action verifies that the old etsiE164DirectoryNumber is in service, and that the new

The action verifies that the old etsiE164DirectoryNumber is in service, and that the new etsiE164DirectoryNumber and interceptTreatmentTerm are valid. The new

etsiE164DirectoryNumber is considered valid if it exists and does not have a relationship with a customerProfile or its subclasses (it is not in service). If not, the agent returns an invalid reference error.

The action sets the interceptTreatmentTerm of the new etsiEl64DirectoryNumber based on the values of those attributes of the old etsiEl64DirectoryNumber and then sets the value of interceptTreatmentTerm of the old etsiEl64DirectoryNumber to the value provided by the action request information.

Moreover, the relationship of the customerProfile or its subclasses associated with the old etsiE164DirectoryNumber is deleted and replaced by a relationship with the new etsiE164DirectoryNumber.";;

MODE CONFIRMED;

WITH INFORMATION SYNTAX CustomerAdminModuleV2.ChangeDirectoryNumberRequest; WITH REPLY SYNTAX CustomerAdminModuleV2.ManagedInstancesNames; REGISTERED AS {ocaAction 3};

7.6.4 Establish customer configuration

establishCustomerConfiguration ACTION

BEHAVIOUR

establishCustomerConfigurationBhv BEHAVIOUR

DEFINED AS "The action copies the subtree (e.g. of a customerProfile) contained under an instance of referenceServiceConfiguration to a customer configuration contained in managedElement. It establishes the links from the customerProfile to the etsiDirectoryNumberE164 and the accessPort (or accessPortProfile if accessPortProfile is already existing) and vice versa. If the referenceServiceConfiguration instance does not exist, the agent returns an invalid reference error. The links to the etsiDirectoryNumberE164 and the accessPort / accessPortProfile have to be exclusively supplied in the following way: The link to etsiDirectoryNumberE164 is indicated with parameter directoryNumber. If the accessPortProfile already exists, the link between the customerProfile and the accessPortProfile has to be indicated in parameter access. If the accessPortProfile does not yet exist, the accessPortProfile has to be present in the reference customer configuration contained in referenceServiceConfiguration and the link to the accessPort has to be indicated in parameter access. The action verifies that the access port trail termination point name respectively the accessPortProfile instance identified in the service is valid. Otherwise the agent returns an invalid reference error. The access port trail termination point name or the accessPortProfile instance is considered valid if an instance for the identifier provided in the action exists. Furthermore, the trail termination point (either supplied with the action or already present) and the etsiDirectoryNumberE164 must be compatible with the data given in the customer profile and contained object classes (e.g. supplementary services). Further data of existing object instances of the customer configuration (e.g. data which are configurable on a per subscriber basis) can be given with parameter customerData. The subcomponent attributeList of parameter customerData indicates how the data of the reference object classes / object instances (components of customerData) are replaced for the customer configuration to be instantiated. It has to be verified that the resulting customer configuration is consistent in itself. If the naming attribute(s) is (are) not given, automatic instance naming is applied. If the action is successful, the reply shall contain at least a list of object instances created subordinate to managed element. It may as well contain all instances of the created subtree. If the action is not successful, the MIB is left unaffected (unchanged).";; MODE CONFIRMED;

WITH INFORMATION SYNTAX CustomerAdminModuleV2.EstablishCustomerConfigurationRequest; WITH REPLY SYNTAX CustomerAdminModuleV2.ManagedInstancesNames; REGISTERED AS {ocaAction 4};

7.7 Definition of notifications

7.7A Failed alarm call

failedAlarmCall NOTIFICATION

BEHAVIOUR

failedAlarmCallBhv BEHAVIOUR

DEFINED AS "The failedAlarmCall notification indicates directory number, date, time and reason of unsuccessful alarm calls (e.g. due to absent subscriber, busy line, etc.).";;

WITH INFORMATION SYNTAX CustomerAdminModuleV2.FailedAlarmCall;;

REGISTERED AS {ocaNotification 1};

7.8 ASN.1 defined types module

BEGIN

```
TMPORTS
    -- CCITT Recommendation X.711
         ObjectClass, ObjectInstance, Attribute, Scope, CMISFilter
         FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) version1(1) protocol(3)}
    -- CCITT Recommendation X.721
         AttributeList
         FROM Attribute-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1}
    -- ITU-T Recommendation Q.821.0
         InterceptTreatmentTerm
         FROM CACommonModule {itu-t(0) recommendation (0) q(17) ca(824) dot(127) common(0)
         informationModel(0) asn1Modules(2) cACommonModule(0)};
informationModel
                               OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0)
                                             customerAdministration(291)
                                             informationModel(1) }
ocaManagedObjectClass
                               OBJECT IDENTIFIER ::= {informationModel managedObjectClass
                                                                                                     (3)
                               OBJECT IDENTIFIER ::= {informationModel package
OBJECT IDENTIFIER ::= {informationModel parameter
ocaPackage
                                                                                                     (4)
ocaParameter
                                                                                                     (5)
                               OBJECT IDENTIFIER ::= {informationModel nameBinding
OBJECT IDENTIFIER ::= {informationModel attribute
ocaNameBinding
                                                                                                     (6)
ocaAttribute
                                                                                                     (7)
                               OBJECT IDENTIFIER ::= { informationModel action
OBJECT IDENTIFIER ::= { informationModel notification
ocaAction
                                                                                                     (9)
ocaNotification
                                                                                                     (10)
AddServiceToConfigurationReply ::= SEQUENCE {
                                   ManagedInstancesNames OPTIONAL,
    createdInstances
                           [0]
    execution
                           [1]
                                   Execution,
    failedInstances
                           [2]
                                   FailedInstances OPTIONAL }
AddServiceToConfigurationRequest ::= SEQUENCE {
    referenceServiceConfigurationInstance
                                                      ObjectInstance,
    selectionInformation
                                                      SelectionInformation
    customerData
                                                      CustomerData OPTIONAL}
AdviceOfChargeActivation ::= ENUMERATED {
    allCalls
                (0),
                  (1)
    perCall
AlarmCallEnd ::= CHOICE {
    repetitions
                     INTEGER,
     -- gives the number of days(for DailyAlarmCall) or the number of weeks (for SpecificAlarmCall)
    -- 0 means infinite
    endDate
                     Date}
-- support of endDate is optional
AlarmCallType ::= CHOICE {
                 [0] CasualAlarmCall,
    casual
                  [1] DailvAlarmCall,
    dailv
    specific
                  [2] SpecificAlarmCall}
Area ::= ENUMERATED {
                               -- A DECT terminal can make and receive calls only within the area % \left( \left( {{{\left( {{{\left( {{{\left( {{{c}}} \right)}} \right)}_{i}}}}} \right)} \right)
    limited
                  (0),
                               -- code of the directory number
    extended
                  (1),
                               -- A DECT terminal can make outgoing calls even outside his area code
                               -- of the directory number but not receive incoming calls outside his
                               -- area code of the directory number
    universal
                  (2)}
                               -- A DECT terminal can make and receive calls even outside the area
                               -- code of the directory number
BlockingDirection ::= ENUMERATED {
    noBlocking (0),
    incoming
                  (1),
                  (2),
    outgoing
                  (3)}
    bothWay
CallCompletionRecallMode ::= ENUMERATED {
    recallAll
                          (0),
    recallActivator
                           (1)
```

CallDiversionRestrictions ::= CHOICE { NULL, noRestrict [0] geogrRestrict [1] DialledDigits, -- National destination number listRestrict [2] NumberList } CallForwardCallingNotification ::= ENUMERATED { no (0), yesWithoutNumber (1)yesWithNumber (2)} CallForwardReleaseNotification ::= BOOLEAN CallForwardServedNotification ::= BOOLEAN CallWaitingCallingNotification ::= BOOLEAN CarrierType ::= CHOICE { OBJECT IDENTIFIER, objectIdentifier NameTvpe } name CasualAlarmCall ::= CHOICE { within24H [0] NULL, date [1] Date} Catastrophe ::= INTEGER ChangeAccessPortRequest ::= SEQUENCE { customerProfile ObjectInstance, ObjectInstance, accessPortProfile oldAccessPort ObjectInstance, newAccessPort ObjectInstance} ChangeDirectoryNumberRequest ::= SEQUENCE { customerProfile ObjectInstance, oldEtsiE164DirectoryNumber ObjectInstance, oldDirectoryNumberIntercept InterceptTreatmentTerm, newEtsiE164DirectoryNumber ObjectInstance} ChannelType ::= CHOICE { isdn [0] Isdn, nonIsdn [1] NonIsdn} CondPackages ::= SET OF OBJECT IDENTIFIER -- object identifiers of conditional packages to be instantiated with the service object class ConnectionType ::= ENUMERATED { pointToPoint (0), (1)} pointToMultipoint CUGBarring ::= ENUMERATED { -- no blocking of CUG calls none (0) -- Subscriber cannot receive calls from other members of his CUG. inBarred (1)outBarred (2)} -- Subscriber cannot originate calls to other members of his CUG. CUGDataNetworkIdentification ::= DialledDigits (SIZE(4)) -- this information is signalled during set-up of a CUG call and serves (in conjunction with the -- cugInterlockCode) to uniquely identify the CUG in the international network. It can be thought -- of as the area code of the CUG. CUGIndex ::= DialledDigits CUGInterlockCode ::= DialledDigits (SIZE(5)) -- this information is signalled during set-up of a CUG call and serves to uniquely identify the -- CUG in the national network. It can be thought of as the 'directory number' for the CUG. CustomerCategory ::= ENUMERATED { standard (0), coinBox (1), mobile (2), testEquipment (3), (4)} operator CustomerData := SET OF SEQUENCE { referenceObjectClass ObjectClass, referenceObjectInstance ObjectInstance OPTIONAL, attributeList AttributeList } CustomerType ::= ENUMERATED { singleLine (0), multiLinePBX (1). multiLineNonPBX (2)}

DailyAlarmCall ::= SEQUENCE {

alarmCallEnd [0] AlarmCallEnd, holidays [1] BOOLEAN OPTIONAL} holidays Date ::= SEQUENCE { year NumericString(SIZE(4))(FROM("0"|"1"|..|"9")), -- gives the year in four digits month NumericString(SIZE(2))(FROM("0"|"1"|..|"9")), -- gives the month in two digits day NumericString(SIZE(2))(FROM("0"|"1"|..|"9"))} -- gives the day in two digits Day ::= ENUMERATED { monday (1), tuesday (2), wednesday (3), thursday (4), friday (5), saturday (6) (7)} sundav DChannelActivation ::= ENUMERATED { deact (0), --link deactivated --layer 1 maintained act1 (1), --layer 1 and 2 maintained act2 (2)} DetailClass ::= INTEGER -- success long distance = 0 -- success international = 1 -- successful calls = 2 -- calls = 3 -- special service 1 = 4 -- special service 2 = 5 -- etc. DetailedNb ::= SEQUENCE { incoming INTEGER, outgoing INTEGER, bothWay INTEGER } DialledDigits ::= IA5String (FROM ("0"|"1"|"2"|"3"|"4"|"5"|"6"|"7"|"8"|"9"|"*"|"#"|"A"|"B"|"C"|"D"|"E"|"F")) -- According to Q.23 only 16 frequency combinations are available. Therefore, # and * are mapped -- internally on two of the letters from A to F. This mapping is implementation dependent. DigitTreatment ::= INTEGER -- operator = 0 -- external = 1 -- emergency = 2 -- activationCode1 = 3 -- accessCode1 = 4 -- activationCode2 = 5 -- accessCode2 = 6 -- etc. Directionality ::= ENUMERATED { (0), incoming outgoing (1)bothways (2)} EstablishCustomerConfigurationRequest ::= SEQUENCE { referenceServiceConfigurationInstance ObjectInstance, access ObjectInstance, -- accessPort(Profile) directoryNumber ObjectInstance, customerData CustomerData OPTIONAL} EtsiDeflectingNumberNotification ::= ENUMERATED { noNotification (0), withoutDN (1)withDN (2)} EtsiE164DirectoryNumber ::= SEQUENCE { DialledDigits OPTIONAL, countryCode SEQUENCE { nationalSignificantNumber nationalDestinationNumber DialledDigits OPTIONAL, subscriberNumber DialledDigits}} Execution ::= ENUMERATED { -- all required instances could be copied
 -- not all required instances could be copied
 -- none of the required instances could be copied successful (0), partlyExecuted (1). (2)} failed

```
FailedAlarmCall ::= SEQUENCE {
    directoryNumber EtsiE164DirectoryNumber,
    date
                         Date,
    time
                         TimeOfDay,
    alarmCallType
                         AlarmCallType
    kindOfAlarmCall
                        KindOfAlarmCall,
    reason
                        Reason}
FailedInstances ::= SET OF SEQUENCE {
                                          ObjectInstance, -- destination instance
PointerList } -- instances to be copied
    destinationConfigurationInstance
    referenceConfigurationInstances
FixedDestinationNumber ::= CHOICE {
    noDestination
                             NULL
                             DialledDigits}
    fixedDestination
GeneralServiceList ::= SET OF CHOICE {
                                                  -- gives the object identifier of a registered -- service representing object class
    registeredService
                            ObjectClass,
   nonRegisteredService
                             NameType}
                                                  -- represents a non-registered service
InterCUGAccess ::= ENUMERATED {
                                  (1),
    none
    outgoingAccess
                                         -- Calls to non-CUG members allowed
                                  (2),
    incomingAccess
                                         -- Incoming calls from non-CUG members allowed
                                  (3).
    outgoingAndIncomingAccess
                                       -- Subscriber can be accessed by other members of CUG
                                  (4)}
Isdn ::= ENUMERATED {
              (0),
    bChannel
    dChannel
                 (1)}
IsdnNb ::= DialledDigits
KindOfAlarmCall ::= ENUMERATED {
   manual
                    (0),
    semiAutomatic
                   (1),
    automatic
                    (2)}
LineCharacteristics ::= INTEGER
-- short: 0
-- long: 1
LineSignalling ::= ENUMERATED {
    dtmf (0), -- push button
            (1),
                    -- rotary
    pulse
            (2)}
    both
MaintBlocking ::= ENUMERATED {
    locked
                    (0),
    unlocked
                    (1)
    shuttingDown
                  (2)
ManagedInstancesNames ::= SET OF SEQUENCE {
    objectClass ObjectClass,
objectInstance ObjectInstance}
MaxNb ::= CHOICE {
   detailed [0] DetailedNb,
total [1] INTEGER}
NameType ::= CHOICE {
            INTEGER,
    number
    string
                GraphicString}
NonIsdn :: ENUMERATED {
    kbit64
                (0),
    kbit32
                 (1),
    kbit16
                 (2),
    kbit8
                 (3)
Number ::= INTEGER
NumberList ::= SET OF EtsiE164DirectoryNumber
Origin ::= NameType
OwnedList ::= SET OF SEQUENCE {
    shortCode
                             DialledDigits,
    fullDirectoryNumber
                             DialledDigits}
```

```
Override ::= SET OF SEQUENCE {
                        ObjectClass,
    service
    serviceInstance
                        ObjectInstance OPTIONAL,
    condPackages
                        CondPackages OPTIONAL}
Pin ::= IA5string(SIZE4..12)(FROM("0"|"1"|..|"9"|"A"|"B"|..|"Z"|"a"|"b"|..|"Z"))
PinProfileRef ::= CHOICE {
                  INTEGÈR,
    pinProfile
                                             -- pre-defined profiles on exchange level
                    GeneralServiceList }
                                             -- explicit pointing to supplementary services
    serviceList
Pointer ::= ObjectInstance
PointerList ::= SET OF ObjectInstance
PreferredCUGIndex ::= CHOICE {
    notDefined [0] NULL,
    defined
                [1]
                        CUGIndex }
PreselectedCarrier ::= SET OF SEQUENCE {
    carrierType
                       CarrierType,
    preselectedCarrier IA5String}
Programs ::= SET OF INTEGER
Reason ::= CHOICE {
   specificReason [0] SpecificReason,
   ctherReason [1] NameType}
RemotelyControlledService ::= CHOICE {
                          NULL,
                    [0]
    all
    serviceList
                   [1]
                            GeneralServiceList }
RingingSequence ::= INTEGER
RouteingInformation ::= CHOICE {
    server
                    NULL,
    routeingNumber DialledDigits}
SelectionInformation ::= SEQUENCE {
    destinationObjectClass
                                     ObjectClass,
    destinationObjectInstance
                                     ObjectInstance,
                                     Scope DEFAULT baseObject
    scope
    filter
                                     CMISFilter DEFAULT and {} }
SemipermanentLine ::= BOOLEAN
SharedList ::= SET OF ObjectInstance
SpecificAlarmCall ::= SEQUENCE {
    days0fWeek
                  SET OF Day,
                    -- gives the days of the week on which alarm calls are to be performed
    alarmCallEnd
                    AlarmCallEnd,
    holidays
                    BOOLEAN OPTIONAL }
                     -- indicates whether alarm calls are to be performed on public holidays
                    -- (TRUE) or not (FALSE)
SpecificReason ::= INTEGER
-- absent customer: 0,
-- busy line: 1,
-- network congestion: 2,
-- resource problem:
                        3, etc.
TimeOfDay ::= SEQUENCE {
                INTEGER(0..23)
    hour
                INTEGER(0..59)}
    minute
TrueFalse ::= BOOLEAN
VoiceMessagingNumber ::= SEQUENCE {
    etsiE164DirectoryNumber EtsiE164DirectoryNumber,
                            GraphicString OPTIONAL}
    controlCode
-- default value definitions
```

blockingDirectionDefaultBlockingDirection::= noBlockingcustomerCategoryDefaultCustomerCategory::= standardcustomerTypeDefaultCustomerType::= singleLinedChannelActivationDefaultDChannelActivation::= deactdefaultPointerListPointerList::= {}lineCharacteristicsDefaultLineCharacteristics::= 0lineSignallingDefaultLineSignalling::= bothlistSharedDefaultTrueFalse::= FALSEmaintBlockingDefaultSemipermanentLine::= FALSE

-- permitted value definitions

PermittedNotificationClass ::= notificationClass(noNotificationClass|conditionalNotification)

END -- of CustomerAdminModuleV2

Annex A (normative): References to service description standards

The following tables give references to the service description standards.

Table A.1: Circuit mode bearer services

Service	ITU-T Recommendation	ETS/EN	Service representing object class
3,1 kHz audio	1.231.3	300 110 [4]	circuitMode3100Hz
64 kbit/s unrestricted	I.231.1	300 108 [2]	circuitMode64kb
Multiple-rate unrestricted	I.231.10	300 389 [5]	multipleRateUnrestricted
Speech	1.231.2	300 109 [3]	speech
Unrestricted digital info with tones / announcements (7 kHz audio)	-	(300 196-1 [1])	audio7khz

Table A.2: Packet -mode bearer services

Service	ITU-T Recommendation	ETS	Service representing object class
X.31 case B - B channel	-	300 048 [6]	etsiPacketBChannel
X31 case B - D channel	-	300 049 [7]	etsiPacketDChannel

Table A.3: Teleservices

Service	ITU-T Recommendation	ETS	Service representing object class
Telefax 4	I.241.3	300 120 [9]	telefaxG4
Telephony 3,1 kHz	I.241.1	300 111 [8]	telephony
Telephony 7 kHz	1.241.7	300 263 [11]	telephony7khz
Videotelephony	-	300 264 [12]	videotelephony
Videotex	1.241.5	300 262 [10]	videotex

Table A.4: Supplementary services

Service	ITU-T Recommendation	ETS/EN/	Service representing object
		Work Item	class
Advice of Charge: charging information at call set-up time (AOC-S)	l.256.2.a	300 178 [27]	adviceOfChargeSetup
Advice of charge: charging information at the end of the call (AOC-E)	l.256.2.c	300 180 [29]	adviceOfChargeEnd
Advice of Charge: charging information during the call (AOC-D)	I.256.2.b	300 179 [28]	adviceOfChargeDuring
Call Deflection (CD)	1.252.5	300 202 [35]	callDeflection
Call Forwarding Busy (CFB)	1.252.2	300 199 [32]	callForwardBusy
Call Forwarding No Reply (CFNR)	1.252.3	300 201 [34]	callForwardNoReply
Call Forwarding Unconditional (CFU)	1.252.4	300 200 [33]	callForwardUnc
Call Hold (HOLD)	1.253.2	300 139 [26]	callHold
Call Waiting (CW)	I.253.1	300 056 [15]	callWaiting
Calling Line Identification Presentation (CLIP)	l.251.3	300 089 [18] (ISDN) 300 648 [19] (PSTN)	clipSupplService
Calling Line Identification Restriction (CLIR)	251.4	300 090 [20] (ISDN) 300 649 [21] (PSTN)	clirSupplService
Closed User Group (CUG)	1.255.1	300 136 [25]	etsiCUG, etsiCUGSubscriptionOption
Completion of Call on no Reply (CCNR)	1.253.4	301 134 [63]	callCompletionNoReply
Completion of Calls to Busy Subscribers (CCBS)	1.253.3	300 357 [37]	callCompletionBusy
Conference call, add-on (CONF)	I.254.1	300 183 [30]	conferenceCallAddOn
Connected Line Identification Presentation (COLP)	251.5	300 094 [22]	colpSupplService
Connected Line Identification Restriction (COLR)	I.251.6	300 095 [23]	colrSupplService
Cordless Terminal Mobility (CTM)		301 175 [64]	cordlessTerminalMobility
Direct Dialling In (DDI)	I.251.1	300 062 [17]	ddi
Explicit Call Transfer (ECT)	1.252.7	300 367 [38]	explicitCallTransfer
Malicious Call Identification (MCID)	l.251.7	300 128 [24]	maliciousCallIdentification
Message waiting indication (MWI)		300 650 [39]	mwiReceiver, mwiController
Multiple Subscriber Number (MSN)	I.251.2	300 050 [13]	msn
Outgoing Call Barring- User Controlled (OCB-UC)		301 084 [41]	outgoingCallBarring
Outgoing Call Barring-Fixed (OCB-F)		301 082 [40]	outgoingCallBarring
Remote Control of Supplementary Service (RCSS)	1.258.3	DEN/NA-020009	remoteControlService
Subaddressing (SUB)	1.251.8	300 059 [16]	subaddressing
Terminal portability (TP)	I.258.1	300 053 [14]	termPortabilitySupplService
Three Party (3PTY)	1.245.2	300 186 [31]	threeParty
User-to-User Signalling (UUS)	I.257.1	300 284 [36]	userToUserSignalling

Table A.5: Selection of additional services not yet defined by ITU-T or ETSI ISDN service descriptions

Service	CEPT Handbook on services and	Service representing object class
	facilities [58], section:	
abbreviated dialling	1.1	abbreviatedDialling
absent subscriber	4.1	absentCustomerFixed-
		Announcement,
		absentCustomerOperatorPosition,
		absentCustomerPredetermined-
		Announcement
alarm call (wake up)	2.1	alarmCall
call observation		customerObservation
charging observation		customerObservation
coinbox		customerCategory attribute in customerProfile
detailed billing		detailedBilling
do not disturb	5.1	incomingCallBarring
fixed destination call (hot line)	1.2	fixedDestinationCall
general deactivation	14.8	generalFacilityReset
home meter		homeMeter
incoming call barring	3.2	incomingCallBarring
interception of calls	13.1	interceptionOfCalls
modify keyword		pin
permanent active layer 1/2		dChannelLayer1Activation /
		dChannelLayer2Activation in
		etsiAccessPortISDNBasicRate /
		etsiAccessPortISDNPrimaryRate
private number ringing signal		differentRinging
semipermanent / nailed up connection		(M3100: crossConnection)
terminating calls not charged		terminatingCallsNotCharged
toll catastrophe		blocking
traffic restriction		blocking, outgoingCallBarring
voice messaging		voiceMessagingBusy,
		voiceMessagingNoReply,
		voiceMessagingUnconditional

The paragraph numbers given hereafter with the object classes refer to the respective ITU-T Recommendation.

B.1 ITU-T Recommendation Q.824.0

- 3.4 Administered Circuit Endpoint Subgroup
- 3.8 Directory Number E164
- 3.11 Routing Block
- 4.1 Catalogued Optional User Facilities
- 4.5 Optional User Facilities

B.2 ITU-T Recommendation Q.824.1

- 3.1.1 Access Channel B-Channel
- 3.1.2 Access Channel D-Channel
- 3.2.1 Access Port ISDN Basic Rate
- 3.2.2 Access Port ISDN Primary Rate
- 3.3.1 Access Port Profile ISDN
- 3.3.2 Access Port Profile ISDN Basic Rate
- 3.3.3 Access Port Profile ISDN Primary Rate
- 3.3.4 Calling Number Screening
- 3.3.5 Network User Identification
- 4.1 Catalogued Access Port ISDN Primary Rate
- 4.2 Catalogued Access Port Profile ISDN
- 4.3 Catalogued Access Port Profile ISDN Basic Rate
- 4.4 Catalogued Layer Entity DSS1
- 4.5 Catalogued Layer Entity LAPD
- 5.1 Terminal Configuration
- 5.2 Terminal Service Profile
- 6.1.1 Bearer Service For 384 kbps Data
- 6.1.2 Bearer Service For 1 536 kbps Data
- 6.1.3 Bearer Service For 1 920 kbps Data
- 6.1.4 Bearer Service For Multiple Rate Data
- 6.1.5 Circuit 3,1 kHz
- 6.1.6 Circuit Combined Switched Digital Data
- 6.1.7 Circuit Combined Voice Band
- 6.1.8 Circuit MultiUse
- 6.1.9 Bearer Service For 64 kbps Data (Unrestricted) Rate Adapted From 56 kbps
- 6.1.10 Circuit Speech
- 6.1.11 Circuit Unrestricted Digital Data
- 6.1.12 Packet
- 6.1.13 Packet B Channel
- 6.1.14 Packet D Channel
- 7.1 Service Manager ISDN
- 7.2 Service Manager Retrieve Service

B.3 ITU-T Recommendation Q.824.2

- 3.1.1. ISDN Circuit Service Set 3.1.2. Service Restrictions 3.2.1. Advice of Charge at Call Set-Up Time 3.2.2. Advice of Charge During the Call 3.2.3. Advice of Charge End of The Call 3.2.4. Call Deflection 3.2.5. Call Forwarding Busy 3.2.6. Call Forwarding No Reply 3.2.7. Call Forwarding Unconditional 3.2.8. Call Hold 3.2.9. Call Transfer 3.2.10. Call Waiting 3.2.11. CLIP 3.2.12. CLIR 3.2.13. Conference Calling 3.2.14. Direct Dialling In 3.2.15. Malicious Call Identification 3.2.16. Multiple Subscriber Number 3.2.17. Outgoing Call Barring 3.2.18. Three Party
- 3.2.19. User-to-User Signalling
- 4.1 Catalogued Call Hold

B.4 ITU-T Recommendation Q.824.3

- 2.1.1. Service X25 Permanent Virtual Circuit (PVC)
- 2.1.2 Semi-Permanent Access To Packet Handler
- 2.2.1. ChargingControl
- 2.2.2. Call Restrictions
- 2.2.3. Path Control

B.5 ITU-T Recommendation Q.824.4

- 3.1. Telefax 4
- 3.2. Telephony
- 3.3. Teletex

Annex C (informative): Examples for customer configurations

This annex gives examples for customer configurations on object instance basis.

In these examples the service assignment to the customer configurations is not drawn.



Figure C.1: Logical configuration





Figure C.2: Logical configuration

Annex D (informative): Modelling of Centrex

Centrex is not to be considered as a standardized service. Therefore, the information model fragment given hereafter is to be seen as a potential and non-normative modelling approach for an implementation of Centrex within a network.



Figure D.1: Entity relationship diagram

D.2 Inheritance hierarchy

An inheritance hierarchy diagram of the Centrex specific object classes is given in the following:



Figure D.2: Inheritance hierarchy

D.3 GDMO definitions

Thus the GDMO template for the object classes and attribute might look as follows:

D.3.1 Object class definitions

The following object class definitions are provided:

```
centrexGroupProfile MANAGED OBJECT CLASS
    DERIVED FROM "ITU-T Recommendation Q.824.0 (1996)":customerProfile;
    CHARACTERIZED BY
    centrexGroupProfilePkg PACKAGE
        BEHAVIOUR
        centrexGroupProfileBhv BEHAVIOUR
        DEFINED AS "The Centrex group profile provides the common characteristics for a Centrex
        group. It is a subclass of the customer profile object class. It provides a single point of
        reference to the (supplementary) services associated with all users of the group.
        The accessPortProfilePtrList attribute inherited from customerProfile may only contain an
        empty set.";;
        ATTRIBUTES
        centrexCustomerPtrList
                                    GET;;;
REGISTERED AS {ocaManagedObjectClass x};
centrexMemberProfile MANAGED OBJECT CLASS
    DERIVED FROM :etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
    centrexMemberProfilePkg PACKAGE
        BEHAVIOUR
        centrexMemberProfileBhv BEHAVIOUR
        DEFINED AS "The Centrex member profile provides the common characteristics for all members
        of the Centrex group. It provides a single point of reference to the resources and services
        associated with the customer.
        The attribute centrexGroupPtr must not have a NULL value.
        Only one instance of centrexMemberProfile may exist for a given customerProfile.";;
        ATTRIBUTES
        centrexGroupPtr
                            GET SET-BY-CREATE,
                            GET-REPLACE;;;;
        intercomNumber
REGISTERED AS {ocaManagedObjectClass x};
centrexGroupSupplService MANAGED OBJECT CLASS
    DERIVED FROM :etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
    centrexGroupSupplServicePkg PACKAGE
         BEHAVIOUR
         centrexGroupSupplServiceBhv BEHAVIOUR
        DEFINED AS "The centrexGroupSupplService provides the common characteristics for all
        supplementary services associated to an instance of object class centrexGroupProfile.";;;;
REGISTERED AS {ocaManagedObjectClass x};
centrexMemberSupplService MANAGED OBJECT CLASS
    DERIVED FROM :etsiSupplementaryServiceServiceIndependent;
    CHARACTERIZED BY
    centrexMemberSupplServicePkg PACKAGE
        BEHAVIOUR
         centrexMemberSupplServiceBhv BEHAVIOUR
         DEFINED AS
        "The centrexMemberSupplService provides the common characteristics for all Centrex specific
        supplementary services of an instance of object class centrexMemberProfile.";;;;
REGISTERED AS {ocaManagedObjectClass x};
groupDialPlan MANAGED OBJECT CLASS
    DERIVED FROM "CCITT Recommendation X.721: 1992":top;
    CHARACTERIZED BY
    groupDialPlanPkg PACKAGE
        BEHAVIOUR
        groupDialPlanBhv BEHAVIOUR
        DEFINED AS "The group dial plan object class represents the treatment of dialled digits on
        the terminating equipment of Centrex users, within a specific Centrex group.";;
        ATTRIBUTES
            groupDialPlanId
                                            GET SET-BY-CREATE,
            dialledCodesList
                                            GET-REPLACE ADD-REMOVE,
            translationTable
                                            GET-REPLACE ADD-REMOVE;;;
REGISTERED AS {ocaManagedObjectClass x};
```

D.3.2 Name bindings

```
centrexGroupProfile-groupDialPlan NAME BINDING
   SUBORDINATE OBJECT CLASS
                                    groupDialPlan AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS centrexGroupProfile AND SUBCLASSES;
   WITH ATTRIBUTE
                                    groupDialPlanId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE;
REGISTERED AS {ocaNameBinding x};
centrexMemberProfile-centrexMemberSupplService NAME BINDING
    SUBORDINATE OBJECT CLASS
                                    centrexMemberSupplService AND SUBCLASSES;
   NAMED BY SUPERIOR OBJECT CLASS
                                    centrexMemberProfile AND SUBCLASSES;
   WITH ATTRIBUTE
                                    supplementaryServiceId;
   CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE;
REGISTERED AS {ocaNameBinding x};
```

D.3.3 Attribute definitions

```
centrexGroupPtr ATTRIBUTE
    WITH ATTRIBUTE SYNTAX "M.3100":Pointer;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    centrexGroupPtrBhv BEHAVIOUR
    DEFINED AS
    "It points to the associated instance of object class centrexGroupProfile.";;
REGISTERED AS {ocaAttribute x};
centrexCustomerPtrList ATTRIBUTE
    WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.PointerList;
    MATCHES FOR EOUALITY, SET-COMPARISON, SET-INTERSECTION;
    BEHAVIOUR
    centrexCustomerPtrListBhv BEHAVIOUR
    DEFINED AS
    "It points to the associated instances of object class centrexCustomerProfile.";;
REGISTERED AS {ocaAttribute x};
dialledCodesList ATTRIBUTE
    WITH ATTRIBUTE SYNTAX OcaAnnexD.DialledCodesList;
    MATCHES FOR SET-INTERSECTION, SET-COMPARISON;
    BEHAVIOUR
    dialledCodesListBhv BEHAVIOUR
    DEFINED AS "It defines the range of dialled digits which are to receive specific treatments
    within the Centrex group. Examples include specific digits used to access attendants, external
    lines, emergency switchboards, etc., as well as the list of access and activation codes for
    service features used within the group.";;
REGISTERED AS {ocaAttribute x};
groupDialPlanId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.NameType;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    groupDialPlanIdBhv BEHAVIOUR
    DEFINED AS "It gives the RDN.";;
REGISTERED AS {ocaAttribute x};
intercomNumber ATTRIBUTE
    WITH ATTRIBUTE SYNTAX CustomerAdminModuleV2.DialledDigits;
    MATCHES FOR EOUALITY;
    BEHAVIOUR
    intercomNumberBhy
                       BEHAVIOUR
    DEFINED AS
"It gives the intercom number of a Centrex customer.";; REGISTERED AS {ocaAttribute x};
translationTable ATTRIBUTE
    WITH ATTRIBUTE SYNTAX OcaAnnexD.TranslationTable;
    MATCHES FOR EQUALITY;
    BEHAVIOUR
    translationTableBhv BEHAVIOUR
    DEFINED AS "It defines how calls are routed between extensions in the customer group. A sequence
    of dialled digits will translate to a PSTN number range for routeing. These need to be mutually
    compatible. A $ is used as a wild card.";;
REGISTERED AS {ocaAttribute 83};
```

D.3.4 ASN.1 types

OcaAnnexD

```
BEGIN
```

```
DialledCodesList ::= SET OF SEQUENCE {
    code    DialledDigits,
    treatment  DigitTreatment}
TranslationTable ::= SET OF SEQUENCE {
    dialledNumLength    INTEGER (1..16),
    dialledNum    DialledDigits,
    actualNum    DialledDigits}
END
```

D.4 Further remarks

The extension of the model to Centrex consoles, Centrex attendant groups and Centrex attendants is not yet covered.

Centrex group specific supplementary services (e.g. distinctive ringing, feature control, message detail recording, ...) are not yet defined.

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Centrex customer specific supplementary services (e.g. call restrictions, call diversion restrictions, ...) are not yet defined. These supplementary services may also have an impact on PSTN supplementary services.

Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

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ETR 037: "Network Aspects (NA); Telecommunications Management Network (TMN); Objectives, principles, concepts and reference configurations".

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