



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.836.1

(02/2000)

SERIES Q: SWITCHING AND SIGNALLING

Specifications of Signalling System No. 7 – Q3 interface

SSF management information model

ITU-T Recommendation Q.836.1

(Previously CCITT Recommendation)

ITU-T Q-SERIES RECOMMENDATIONS

SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4 AND No. 5	Q.120–Q.249
SPECIFICATIONS OF SIGNALLING SYSTEM No. 6	Q.250–Q.309
SPECIFICATIONS OF SIGNALLING SYSTEM R1	Q.310–Q.399
SPECIFICATIONS OF SIGNALLING SYSTEM R2	Q.400–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.849
General	Q.700
Message transfer part (MTP)	Q.701–Q.709
Signalling connection control part (SCCP)	Q.711–Q.719
Telephone user part (TUP)	Q.720–Q.729
ISDN supplementary services	Q.730–Q.739
Data user part	Q.740–Q.749
Signalling System No. 7 management	Q.750–Q.759
ISDN user part	Q.760–Q.769
Transaction capabilities application part	Q.770–Q.779
Test specification	Q.780–Q.799
Q3 interface	Q.800–Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
General	Q.850–Q.919
Data link layer	Q.920–Q.929
Network layer	Q.930–Q.939
User-network management	Q.940–Q.949
Stage 3 description for supplementary services using DSS 1	Q.950–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1699
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2000	Q.1700–Q.1799
BROADBAND ISDN	Q.2000–Q.2999

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

ITU-T RECOMMENDATION Q.836.1

SSF MANAGEMENT INFORMATION MODEL

Summary

This Recommendation is one in a series of Recommendations that deals with the management of IN functional entities. There will be one Recommendation for each functional entity. This Recommendation specifies the Management Information Model for the Service Switching Function (SSF).

Source

ITU-T Recommendation Q.836.1 was prepared by ITU-T Study Group 4 (1997-2000) and was approved under the WTSC Resolution 1 procedure on 4 February 2000.

FOREWORD

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

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

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution 1.

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

NOTE

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

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

© ITU 2001

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

CONTENTS

	Page
1	Scope..... 1
2	Normative references 1
2.1	Informative reference..... 1
3	Definitions 1
4	Abbreviations..... 2
5	Requirements met 3
5.1	Management functional areas 3
5.1.1	Fault management..... 3
5.1.2	Configuration Management..... 3
5.1.3	Accounting management 3
5.1.4	Performance management 3
5.1.5	Security management..... 3
5.2	Operational requirements..... 4
5.2.1	Introduction..... 4
6	Information Model – Overview 4
6.1	Managed Object Class Relationship Model..... 4
6.1.1	"Configure SRF/SCF relaying capabilities" and "Configure SRF assisting" Relationships 4
6.1.2	Managed Object descriptions 5
6.2	Inheritance Hierarchy..... 6
6.3	Naming Hierarchy..... 7
7	Managed Object Class Definitions 8
7.1	IN Authorization 8
7.2	Basic Call State Model (BCSM)..... 9
7.3	Trigger Detection Point (TDP) 9
7.4	Originating Attempt Authorized Trigger 10
7.5	Collected Information Trigger 10
7.6	Analysed Information Trigger..... 11
7.7	Route Select Failure Trigger 11
7.8	Originating Called Party Busy Trigger 12
7.9	Originating No Answer Trigger 12
7.10	Originating Answer Trigger..... 12
7.11	Originating Mid Call Trigger..... 13
7.12	Originating Disconnect Trigger 13
7.13	Originating Abandon Trigger..... 14

	Page
7.14 Terminating Attempt Authorized Trigger.....	14
7.15 Terminating Called Party Busy Trigger.....	14
7.16 Terminating No Answer Trigger.....	15
7.17 Terminating Answer Trigger.....	15
7.18 Terminating Mid Call Trigger.....	16
7.19 Terminating Disconnect Trigger.....	16
7.20 Terminating Abandon Trigger.....	17
7.21 Trigger Base.....	17
7.22 Originating Line Trigger Base.....	18
7.23 Originating Trunk Trigger Base.....	18
7.24 Terminating Line Trigger Base.....	18
7.25 Terminating Trunk Trigger Base.....	18
7.26 Private Facility Trigger Base.....	19
7.27 Office Trigger Base.....	19
7.28 IN Call Gap.....	19
7.29 Service Filtering.....	20
7.30 Service Filtering Counter.....	21
7.31 Service Filtering Duration Default.....	22
7.32 Initiate Call Default Information.....	22
7.33 INAP Counter.....	22
7.34 Service Feature Control.....	23
7.35 SCF Access.....	24
7.36 SCF Access Point Code Based.....	24
7.37 SCF Global Title Based.....	25
7.38 IP Configuration.....	25
7.39 Assist Treatment Configuration.....	26
7.40 Ported Number Trigger.....	26
7.41 Ported Number List.....	27
7.42 INAP Current Data.....	27
7.43 INAP History Data.....	27
7.44 Default Charging.....	28
7.45 Exception Handler.....	28
7.46 SSF Timer.....	29
7.47 SCF Application Entity.....	29
7.48 SSF Application Entity.....	29
8 Package definitions.....	29

	Page
9	Attribute definitions..... 30
9.1	bcsmId Attribute 30
9.2	tdpId Attribute..... 30
9.3	tdpMode Attribute..... 30
9.4	tdp1Criteria Attribute..... 30
9.5	tdp2Criteria Attribute..... 30
9.6	tdp3Criteria Attribute..... 31
9.7	tdp4Criteria Attribute..... 31
9.8	tdp5Criteria Attribute..... 31
9.9	tdp6Criteria Attribute..... 31
9.10	tdp7Criteria Attribute..... 32
9.11	tdp8Criteria Attribute..... 32
9.12	tdp9Criteria Attribute..... 32
9.13	tdp10Criteria Attribute..... 32
9.14	tdp12Criteria Attribute..... 33
9.15	tdp13Criteria Attribute..... 33
9.16	tdp14Criteria Attribute..... 33
9.17	tdp15Criteria Attribute..... 33
9.18	tdp16Criteria Attribute..... 34
9.19	tdp17Criteria Attribute..... 34
9.20	tdp18Criteria Attribute..... 34
9.21	triggerAssociation Attribute..... 34
9.22	inEscape Attribute..... 34
9.23	congestionAction Attribute..... 35
9.24	serviceKey Attribute 35
9.25	inCallGapId Attribute 35
9.26	gapDuration Attribute 35
9.27	gapInterval Attribute..... 35
9.28	gapTreatment Attribute..... 36
9.29	digitString Attribute..... 36
9.30	authenticationCode Attribute..... 36
9.31	calledPartyNumberList Attribute..... 36
9.32	callingPartyNumberList Attribute..... 36
9.33	version Attribute 37
9.34	observedEventId Attribute 37
9.35	observedSCFAccessList Attribute 37

	Page
9.36	count Attribute 37
9.37	defaultCharging Attribute 37
9.38	chargingProfile Attribute 38
9.39	iNAPASE Attribute 38
9.40	iNEscape Attribute 38
9.41	exceptionHandling Attribute 38
9.42	sCFAccessPointer Attribute 38
9.43	triggerList Attribute 39
9.44	basePriority Attribute 39
9.45	gapCriteria Attribute 39
9.46	gapDuration Attribute 39
9.47	gapInterval Attribute 39
9.48	gapTreatment Attribute 40
9.49	controlType Attribute 40
9.50	iPCapabilityList Attribute 40
9.51	dialledDigitLength 40
9.52	terminatingDialDigitsList Attribute 40
9.53	defaultChargingAction Attribute 41
9.54	timerValue Attribute 41
9.55	missingCustomerRecordException Attribute 41
10	Name Bindings 41
10.1	TDP to BCSM 41
10.2	Originating Trunk Trigger Base to Configured End Point Group 42
10.3	Terminating Trunk Trigger Base to Configured End Point Group 42
10.4	Originating Line Trigger Base to Customer Profile 42
10.5	Terminating Line Trigger Base to Customer Profile 42
10.6	SCF Access to Managed Element 43
10.7	BCSM to Managed Element 43
10.8	IN Call Gap to SSF-SCF Application Entity 43
10.9	Service Filtering to Service Feature Control 43
10.10	IP Configuration to Managed Element 44
10.11	Dialled Digit Length to Managed Element 44
10.12	Terminating Dialled Digit List to Dialled Digit Length 44
10.13	inAuthorization to tdp 45
10.14	Initiate Call Default Information to Managed Element 45
10.15	Assist Treatment Configuration to Managed Element 45

	Page
10.16 Ported Number Trigger to Managed Element.....	45
10.17 Ported Number List to Managed Element.....	46
10.18 Default Charging to Service Feature Control	46
10.19 Exception Handler to Service Feature Control.....	46
10.20 SSF Timer to SCF Access	46
10.21 INAP Counter to SSF Application Entity.....	47
10.22 INAP Current Data to SSF Application Entity.....	47
10.23 INAP History Data to SSF Application Entity	47
10.24 Assist Treatment Configuration to SSF Application Entity	48
10.25 Service Feature Control to SSF Application Entity.....	48
11 ASN.1 Module	48
Appendix I – Productions Imported From Q.1218	53

Recommendation Q.836.1

SSF MANAGEMENT INFORMATION MODEL

1 Scope

This Recommendation specifies the information model for the management of IN functionality provided in the Service Switching Function (SSF). In the physical functional plane the data structures implied by this model may reside in any physical system (Network Element (NE)), e.g. Service Switching Point (SSP) or Service Switching Control Point (SSCP), that implements the SSF functionality.

This Recommendation defines:

- the managed objects and associated attributes, actions, notifications and behaviour;
- the name bindings;
- the GDMO templates and associated ASN.1 syntax used in specifying the information model; and
- the representation of the management information at the Q3 interface between the system supporting the SSF functionality and the management system.

This Recommendation does not define:

- the internal implementation of the data structures used to represent the information model in the physical system.

2 Normative references

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

- ITU-T Recommendation Q.1236 (1999), *Intelligent Network Capability Set 3 – Management Information Model Requirements and Methodology*.

2.1 Informative reference

- ETSI ES 201 386 Ver.1.1.1 (1999), *Telecommunications Management Network (TMN); Service Switching Function (SSF) management information model*.

3 Definitions

This Recommendation defines the following terms:

3.1 assisting: If SRF functionality is required but no appropriate SRP is available at the SSP, the call is forwarded to a second SSP, the "assisting SSP", having a suitable SRF. Signalling to this SRP is relayed via the assisting SSP.

3.2 IN-based Service Feature Control: This is the control of the feature processing of a specified IN service. It uses signalling addresses to invoke associations with SCPs.

3.3 IN trigger: A mechanism for deciding under which conditions normal call processing has to be suspended and IN-based Service Feature Control has to be activated.

3.4 service key: An abstract identification of service logic. Within this Recommendation, only the concept of a 'logical' service key is used.

Other terms used in this Recommendation are defined in the Q.12xx series of Recommendations (IN CS-1).

4 Abbreviations

This Recommendation uses the following abbreviations:

ACSE	Association Control Service Element
AE	Application Entity
AP	Application Process
ASN.1	Abstract Syntax Notation One
BCSM	Basic Call State Model
CMIP	Common Management Information Protocol
CMISE	Common Management Information Service Element
INAP	Intelligent Network Application Protocol
ISUP	ISDN User Part
ITU	International Telecommunication Union
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
MOC	Managed Object Class
NE	Network Element
OS	Operations System
OSI	Open Systems Interconnection
SCF	Switching Control Function
SCP	Switching Control Point
SE	application-service-element
SMASE	Systems Management Application Service Element
SRF	Special Resource Function
SRP	Special Resource Point
SSF	Service Switching Function
SSP	Service Switching Point
TDP	Trigger Detection Point
TMN	Telecommunications Management Network

5 Requirements met

5.1 Management functional areas

This Recommendation meets the following SSF management:

5.1.1 Fault management

- Report automatic restoration.

5.1.2 Configuration Management

- Download trigger data.

The following trigger data is configurable for each trigger:

- trigger type;
- routing to SCF;
- service key;
- congestion control (action to be taken in case of SCF overload);
 - a) terminate call;
 - b) play announcement;
 - c) alternate route.
- Modify trigger data.
- Delete trigger data.
- Block and unblock trigger tables.

5.1.3 Accounting management

For further study.

5.1.4 Performance management

- Monitor call gapping, e.g.:
 - number of calls blocked per call gap;
 - number of calls blocked per call gap type.
- Manage call gap parameters:
 - type of call gapping (manual, SCF overload, destination overload, etc.);
 - status of call gap;
 - call gapping criteria (e.g. calling region, called region, calling party, called party);
 - gapping duration interval;
 - call treatment for gapped calls (e.g. play announcement, busy tone).
- Traffic measurements, e.g.:
 - number of failed calls due to caller abandon, SSF failure or SCF failure;
 - number of successful calls;
 - number of queries sent to SCF;
 - average waiting time per call.

5.1.5 Security management

For further study.

5.2 Operational requirements

The operational requirements to be met by this specification are specified in Recommendation Q.1236. That Recommendation provides detailed requirements for the functionality identified in the overview below. The information model specified in this Recommendation is being released in phases and presently the requirement identified as OR9 in Recommendation Q.1236 is not met by this information model. OR9 would require access to charging information while a call was in progress. Support of this capability would result in introducing complexity that is currently not supported.

5.2.1 Introduction

The following operational requirements are defined:

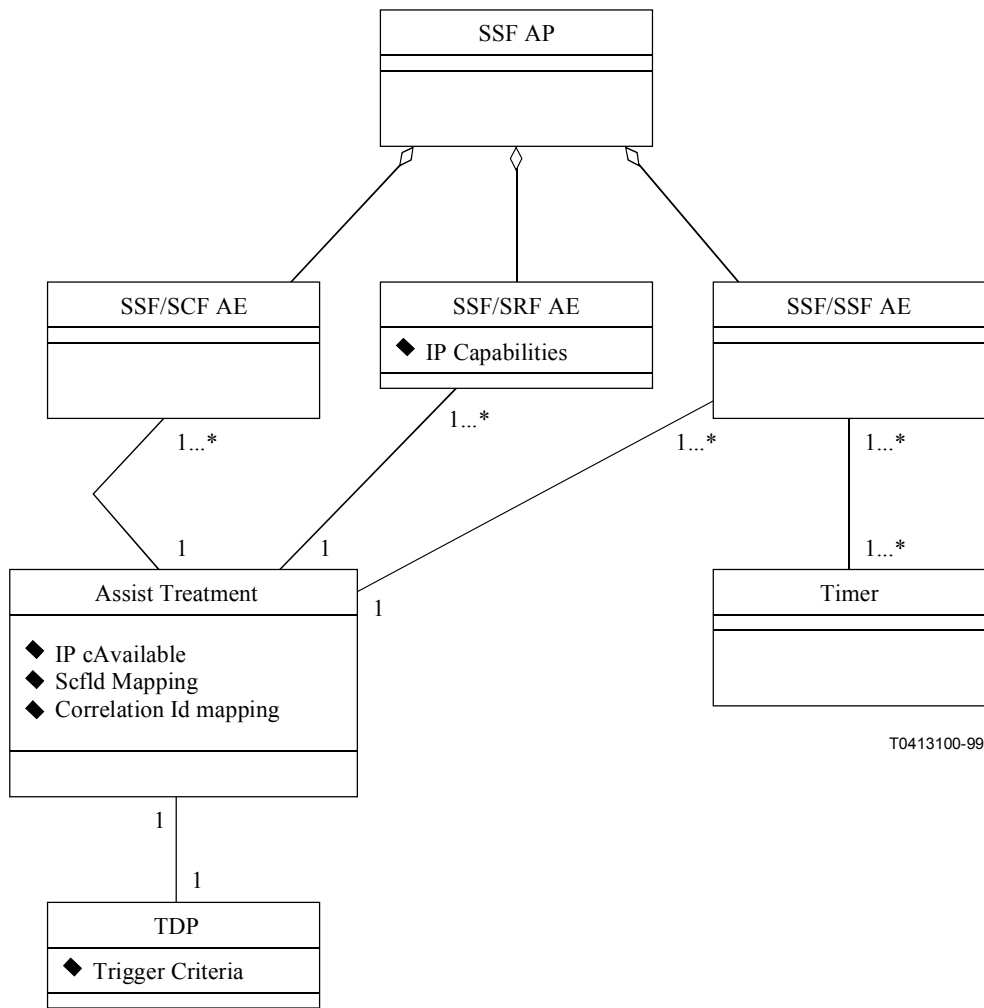
- Configure triggering of IN-based service feature control;
- Start call gapping;
- Stop call gapping;
- Read current gapping criteria;
- Configure default values (call gapping);
- Configure SRF/SCF relaying capabilities of the SSF;
- Configure SRF assisting;
- Configure default parameters (service filtering);
- Read service filtering;
- Configure a set of originating call set-up data for SCF initiated call;
- Read current defined originating call set-up data for SCF initiated call;
- Configure IN charging;
- Configure error handling;
- Start INAP Measurements counters;
- Stop INAP Measurements counters;
- Read current INAP Measurement counters.

6 Information Model – Overview

6.1 Managed Object Class Relationship Model

6.1.1 "Configure SRF/SCF relaying capabilities" and "Configure SRF assisting" Relationships

See Figure 1.



T0413100-99

Figure 1/Q.836.1 – "Configure SRF/SCF relaying capabilities" and "Configure SRF assisting" Relationships

6.1.2 Managed Object descriptions

6.1.2.1 SSF AP

General description

The SSF Application Process MOC represents all of the possible SSF processes associated with the SSF-SCF, SSF-SRF and SSF-SSF interface. Contained within this class are all the Application Entities, i.e. the set of INAP messages.

6.1.2.2 SSF/SRF AE

General description

The "SSF/SRF AE" MOC represents the set of INAP messages defined for the SSF-SRF interface. It has a many-to-one relationship with the Assist Treatment MOC.

Attributes

- IP Capabilities: describes which type of feature interactions are possible by the SRF.

6.1.2.3 SSF/SCF AE

General description

The SSF/SCF Application Entity MOC represents the set of INAP messages defined for the SSF-SCF interface. It has a many-to-one relationship with the Assist Treatment MOC.

6.1.2.4 SSF/SSF AE

General description

The SSF/SSF Application Entity MOC represents the set of INAP messages defined for the SSF-SSF interface. These messages will be enveloped in ISUP.

6.1.2.5 Assist Treatment

General description

The "Assist Treatment" MOC represents the set of operations contained within the SSF/SRF and SSF/SCF Application Entities. The Assist Treatment MOC has a one-to-one relationship with the TDP MOC.

Attributes

- IP Available specifies which SRF is available and what features it can support.
- SCF Id mapping is used to identify which SCF the Assist treatment is to be sent to.
- Correlation Id is used to identify which call is related to the SRF association.

6.1.2.6 TDP

General description

The TDP MOC is used to describe at which conditions normal call processing has to be suspended and IN-based service feature control is activated. It has a one-to-one relationship with the Assist Treatment MOC.

Attributes

- Trigger Criteria represents the conditions upon which the trigger is initiated.

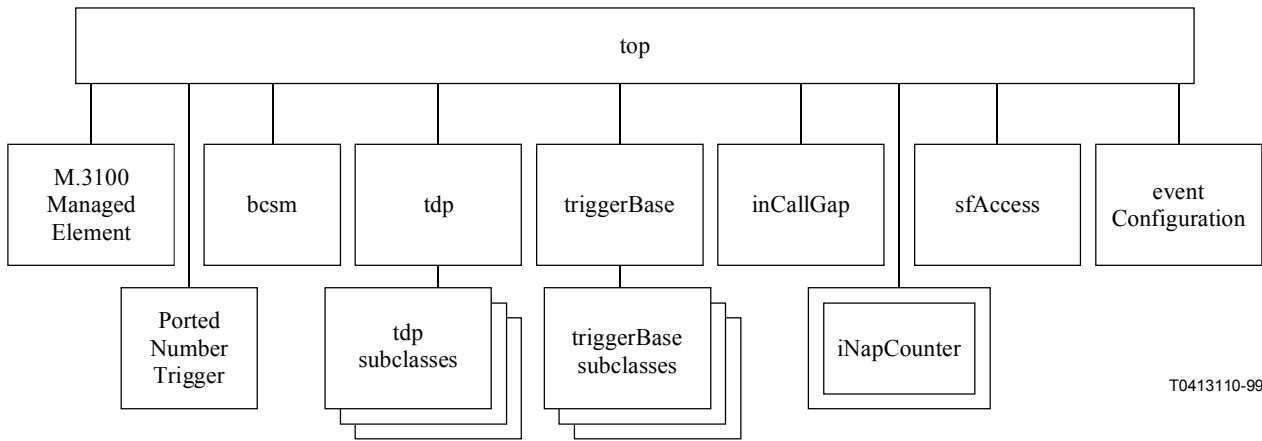
6.1.2.7 Timer

General description

The Timer MOC represents the timer that is set at association time between the SSF control and assisting. The timer is controlled and reset if necessary by the controlling SSF.

6.2 Inheritance Hierarchy

See Figure 2.

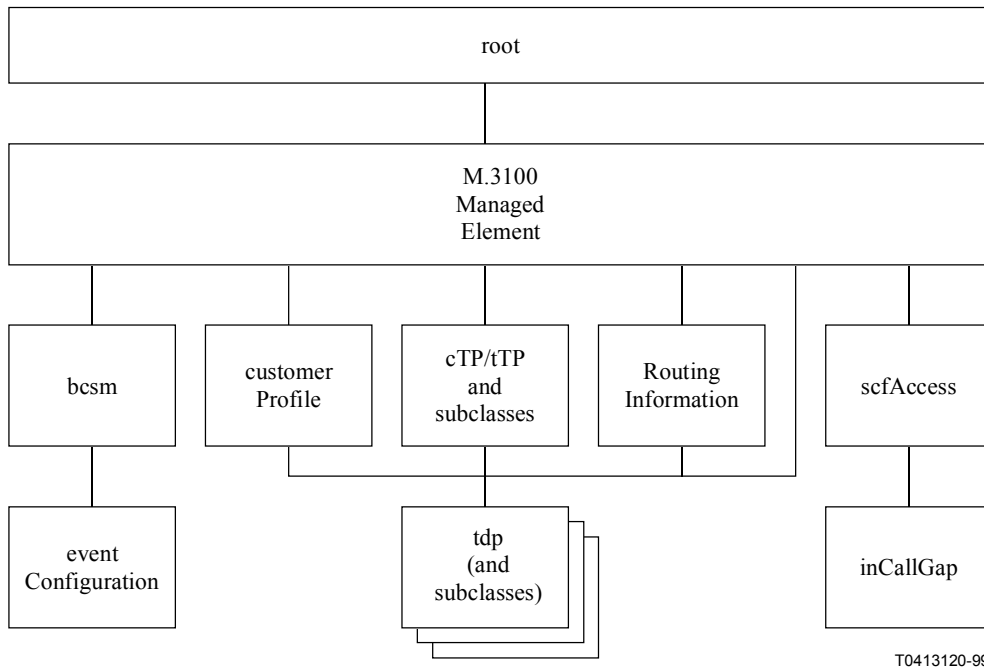


T0413110-99

Figure 2/Q.836.1 – Inheritance Hierarchy

6.3 Naming Hierarchy

See Figure 3.



T0413120-99

Figure 3/Q.836.1 – Naming Hierarchy

7 Managed Object Class Definitions

7.1 IN Authorization

inAuthorization MANAGED OBJECT CLASS

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

inAuthorizationPackage PACKAGE

BEHAVIOUR

inAuthorizationBehaviour BEHAVIOUR

DEFINED AS "This object class is used to support IN features offered to customers from remote exchanges. The inAuthorization managed object is associated with trunk- or office-based triggers to identify the customers who have access to the IN capabilities.";;

ATTRIBUTES

inAuthorizationId GET;;;

REGISTERED AS {inSSFManagedObjectClass 101};

inAuthorizationOriginating MANAGED OBJECT CLASS

DERIVED FROM inAuthorization;

CHARACTERIZED BY

inAuthorizationOriginatingPackage PACKAGE

BEHAVIOUR

inAuthorizationOriginatingBehaviour BEHAVIOUR

DEFINED AS "This object class is used to authorize the use of originating triggers or trigger bases by individual customers. This managed object class may only be associated with originating side triggers or trigger bases.

This object is only used to associate triggers to customers in remote exchanges. For line based (customer profile based) triggers the association to a particular directory number is established via the trigger criteria in the appropriate trigger object.";;

ATTRIBUTES

authenticationCode SET-BY-CREATE, -- Replaceable but not readable.
callingPartyNumberList GET-REPLACE ADD-REMOVE;;;

REGISTERED AS {inSSFManagedObjectClass 102};

inAuthorizationTerminating MANAGED OBJECT CLASS

DERIVED FROM inAuthorization;

CHARACTERIZED BY

inAuthorizationTerminatingPackage PACKAGE

BEHAVIOUR

inAuthorizationTerminatingBehaviour BEHAVIOUR

DEFINED AS "This object class is used to authorize the use of terminating triggers or trigger bases by individual customers. This managed object class may only be associated with terminating side triggers or trigger bases.

This object is only used to associate triggers to customers in remote exchanges. For line-based (customer profile based) triggers the association to a particular directory number is established via the trigger criteria in the appropriate trigger object.";;

ATTRIBUTES

calledPartyNumberList

GET-REPLACE ADD-REMOVE;;;

REGISTERED AS {inSSFManagedObjectClass 61};**7.2 Basic Call State Model (BCSM)**bcsM **MANAGED OBJECT CLASS****DERIVED FROM** "Recommendation X.721 : 1992": top;**CHARACTERIZED BY**bcsMPackage **PACKAGE****BEHAVIOUR**bcsMBehaviour **BEHAVIOUR****DEFINED AS** "This object class represents the basic call processing capability.";;**ATTRIBUTES**

bcsMId

GET,

version

GET SET-BY-CREATE;;;

REGISTERED AS {inSSFManagedObjectClass 62};**7.3 Trigger Detection Point (TDP)**tdp **MANAGED OBJECT CLASS****DERIVED FROM** "Recommendation X.721 : 1992": top;**CHARACTERIZED BY**tdpPackage **PACKAGE****BEHAVIOUR**tdpBehaviour **BEHAVIOUR****DEFINED AS** "This object class is a non-instantiable superclass for trigger point objects. Trigger point objects serve as launch points for the invocation of IN features.

The tdpId attribute is used as the RDN for naming.

TDPs may be of one of two types: "request" (which request that a control relation be established between the SCF and SSF and an operation may need to be performed at the SCF, the SSF may need to wait before continuing call processing) and a "notification" (which does not result in the establishment of a control relation).

The triggerAssociation attribute identifies the trigger base associated with that trigger.

The inEscape attribute defines a set of conditions that will cause escape from IN feature invocation and result in normal call processing.

The congestionAction attribute defines the action to be taken when the SCF is overloaded and IN service requests cannot be processed in a timely manner. Possible actions are termination of the call, playing of an announcement with subsequent termination or playing announcement with user option of continuing the call.

The serviceKey attribute defines which IN service will be activated in response to this trigger.

The administrative attribute may be used to administratively lock a trigger; this results in the trigger becoming inactive. Only the locked and unlocked state values are used (shutting-down is not meaningful in this context).";;

ATTRIBUTES

tdpId	GET,
tdpMode	GET-REPLACE,
triggerAssociation	GET-REPLACE,
inEscape	GET-REPLACE,
congestionAction	GET-REPLACE,
serviceKey	GET-REPLACE,
"ITU-T Rec. X.735":administrativeState	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 63};

7.4 Originating Attempt Authorized Trigger

o_Attempt_Authorized **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

o_Attempt_AuthorizedPackage **PACKAGE**

BEHAVIOUR

o_Attempt_AuthorizedBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call O_NULL & Authorize_Origination_Attempt when a seizure event was accepted. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp1Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp1Criteria attribute contains the logical expression that specifies the applicable criteria.

For trunk-based triggers only callingPartyNumber and bearerCapability are allowed.

For subscriber- (customer profile) based triggers only classOfService is allowed.";;

ATTRIBUTES

tdp1Criteria	GET-REPLACE;;;
--------------	----------------

REGISTERED AS {inSSFManagedObjectClass 1};

7.5 Collected Information Trigger

collected_InfoTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

collected_InfoPackage **PACKAGE**

BEHAVIOUR

collected_InfoBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call collect Information as dialled digits are received. Triggering might be unconditional or dependent on trigger criteria.

The attribute tdp2Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp2Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp2Criteria construct include: calledPartyNumber, callingPartyNumber, digitString and stringLength.";;

ATTRIBUTES
tdp2Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 2};

7.6 Analysed Information Trigger

analysed_InfoTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

analysed_InfoPackage **PACKAGE**

BEHAVIOUR

analysed_InfoBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call Analyse Information when the exchange analyses the received digits. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp3Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp3Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp3Criteria construct include: calledPartyNumber, callingPartyNumber, natureOfAddress, digitString, stringLength, facilityInformation and featureActivation.";;

ATTRIBUTES
tdp3Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 3};

7.7 Route Select Failure Trigger

route_Select_FailureTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

route_Select_FailurePackage **PACKAGE**

BEHAVIOUR

route_Select_FailureBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call Routing_ & _Alerting when the call fails due to a route select failure. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp4Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp4Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp4Criteria construct include: cause, callingPartyNumber, and featureActivation.";;

ATTRIBUTES
tdp4Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 4};

7.8 Originating Called Party Busy Trigger

o_Called_Party_BusyTrigger MANAGED OBJECT CLASS

DERIVED FROM tdp;

CHARACTERIZED BY

o_Called_Party_BusyPackage **PACKAGE**

BEHAVIOUR

o_Called_Party_BusyBehaviour BEHAVIOUR

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call Routing_ & Alerting when the call encounters a busy condition. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp5Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp5Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp5Criteria construct include: cause and featureActivation.";;

ATTRIBUTES

tdp5Criteria GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 5};

7.9 Originating No Answer Trigger

o_No_AnswerTrigger MANAGED OBJECT CLASS

DERIVED FROM tdp;

CHARACTERIZED BY

o_No_AnswerPackage **PACKAGE**

BEHAVIOUR

o_No_AnswerBehaviour BEHAVIOUR

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call Routing_ & Alerting when the call encounters a no-answer condition. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp6Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp6Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp6Criteria construct include: cause and featureActivation.";;

ATTRIBUTES

tdp6Criteria GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 6};

7.10 Originating Answer Trigger

o_AnswerTrigger MANAGED OBJECT CLASS

DERIVED FROM tdp;

CHARACTERIZED BY

o_AnswerPackage **PACKAGE**

BEHAVIOUR

o_AnswerBehaviour BEHAVIOUR

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call O_Active when the call is answered. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp7Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp7Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp7Criteria construct include: facilityInformation and featureActivation.";;

ATTRIBUTES

tdp7Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 7};

7.11 Originating Mid Call Trigger

o_Mid_CallTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

o_Mid_CallPackage **PACKAGE**

BEHAVIOUR

o_Mid_CallBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call O_Active when feature activation is invoked in the active state of the call. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp8Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp8Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp8Criteria construct include: facilityInformation and featureActivation.";;

ATTRIBUTES

tdp8Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 8};

7.12 Originating Disconnect Trigger

o_DisconnectTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

o_DisconnectPackage **PACKAGE**

BEHAVIOUR

o_DisconnectBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call O_Active when a disconnect occurs. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp9Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp9Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp9Criteria construct include: cause and featureActivation.";;

ATTRIBUTES

tdp9Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 9};

7.13 Originating Abandon Trigger

o_AbandonTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

o_AbandonPackage **PACKAGE**

BEHAVIOUR

o_AbandonBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at points in call when a call abandon occurs. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp10Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp10Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp10Criteria construct include: cause and featureActivation.";;

ATTRIBUTES

tdp10Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 10};

7.14 Terminating Attempt Authorized Trigger

t_Attempt_Authorized **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

t_Attempt_AuthorizedPackage **PACKAGE**

BEHAVIOUR

t_Attempt_AuthorizedBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call T_NULL & Authorize_Termination_Attempt when a seizure event was accepted. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp12Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp12Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp12Criteria construct include: callingPartyNumber and featureActivation.";;

ATTRIBUTES

tdp12Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 12};

7.15 Terminating Called Party Busy Trigger

t_Called_Party_BusyTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

t_Called_Party_BusyPackage

PACKAGE

BEHAVIOUR

t_Called_Party_BusyBehaviour BEHAVIOUR

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call Select_Facility_&_Present_Call when the call encounters a busy condition. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp13Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp13Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp13Criteria construct include: cause, callingPartyNumber and featureActivation.";;

ATTRIBUTES

tdp13Criteria GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 13};

7.16 Terminating No Answer Trigger

t_No_AnswerTrigger MANAGED OBJECT CLASS

DERIVED FROM tdp;

CHARACTERIZED BY

t_No_AnswerPackage PACKAGE

BEHAVIOUR

t_No_AnswerBehaviour BEHAVIOUR

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call Select_Facility_&_Present_Call when the call encounters a no-answer condition. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp14Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp14Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp14Criteria construct include: cause, callingPartyNumber and featureActivation.";;

ATTRIBUTES

tdp14Criteria GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 14};

7.17 Terminating Answer Trigger

t_AnswerTrigger MANAGED OBJECT CLASS

DERIVED FROM tdp;

CHARACTERIZED BY

t_AnswerPackage PACKAGE

BEHAVIOUR

t_AnswerBehaviour BEHAVIOUR

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call T_Active when the call is answered. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp15Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp15Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp15Criteria construct include: facilityInformation and featureActivation.";;

ATTRIBUTES

tdp15Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 15};

7.18 Terminating Mid Call Trigger

t_Mid_CallTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

o_Mid_CallPackage **PACKAGE**

BEHAVIOUR

t_Mid_CallBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call T_Active when feature activation is invoked in the active state of the call. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp16Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp16Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp16Criteria construct include: facilityInformation and featureActivation.";;

ATTRIBUTES

tdp16Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 16};

7.19 Terminating Disconnect Trigger

t_DisconnectTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

t_DisconnectPackage **PACKAGE**

BEHAVIOUR

t_DisconnectBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at point in call T_Active when a disconnect occurs. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp17Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp17Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp17Criteria construct include: cause and featureActivation.";;

ATTRIBUTES

tdp17Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 17};

7.20 Terminating Abandon Trigger

t_AbandonTrigger **MANAGED OBJECT CLASS**

DERIVED FROM tdp;

CHARACTERIZED BY

t_AbandonPackage **PACKAGE**

BEHAVIOUR

t_AbandonBehaviour **BEHAVIOUR**

DEFINED AS "This object class is a subclass of tdp. It is used to trigger IN control at points in call when a call abandon occurs. Triggering may be unconditional or dependent on trigger criteria.

The attribute tdp18Criteria indicates whether the trigger is conditional or unconditional. If the trigger is conditional, the tdp18Criteria attribute contains the logical expression that specifies the applicable criteria.

Valid parameters in the tdp18Criteria construct include: cause and featureActivation.";;

ATTRIBUTES

tdp18Criteria

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 18};

7.21 Trigger Base

triggerBase **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

triggerBasePackage **PACKAGE**

BEHAVIOUR

triggerBaseBehaviour **BEHAVIOUR**

DEFINED AS "This object class is used to define an association between a set of triggers and the scope of these triggers, e.g. Originating Line, Terminating Line, Originating Trunk, Terminating Trunk, Private Facility, Office (Analysed Info Base).

The triggerBaseId attribute is used for naming.

The associatedObject attribute is a pointer to the object instance with which the trigger base is associated.

The basePriority attribute allows specification of which triggerList will be active when several would apply simultaneously to a call.

The trigger list is a prioritized list of trigger objects that will apply to a call. The triggers that may be contained in this list will be constrained by the behaviour of subclasses of this object class.

The administrative attribute may be used to administratively lock a trigger-base; this results in the trigger-base becoming inactive, thereby deactivating all triggers associated with that base. Only the locked and unlocked state values are used (shutting-down is not meaningful in this context).";;

ATTRIBUTES

triggerBaseId

associatedObject

basePriority

triggerList

"ITU-T Rec. X.735":administrativeState

GET,

GET SET-BY-CREATE,

GET-REPLACE,

GET-REPLACE ADD-REMOVE,

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 21};

7.22 Originating Line Trigger Base

o_lineTriggerBase MANAGED OBJECT CLASS

DERIVED FROM triggerBase;

CHARACTERIZED BY

o_lineTriggerBasePackage **PACKAGE**

BEHAVIOUR

o_lineTriggerBaseBehaviour **BEHAVIOUR**

DEFINED AS "The triggerList attribute of this object class is constrained to triggers of type (see Rec. Q.1241) 1,2,3,4,5,6 and 8.";;;;

REGISTERED AS {inSSFManagedObjectClass 22};

7.23 Originating Trunk Trigger Base

o_trunkTriggerBase MANAGED OBJECT CLASS

DERIVED FROM triggerBase;

CHARACTERIZED BY

o_trunkTriggerBasePackage **PACKAGE**

BEHAVIOUR

o_trunkTriggerBehaviour **BEHAVIOUR**

DEFINED AS "The triggerList attribute of this object class is constrained to triggers of type (see Rec. Q.1241) 1,2,3,4,5,6 and 8.";;;;

REGISTERED AS {inSSFManagedObjectClass 23};

7.24 Terminating Line Trigger Base

t_lineTriggerBase MANAGED OBJECT CLASS

DERIVED FROM triggerBase;

CHARACTERIZED BY

t_lineTriggerBasePackage **PACKAGE**

BEHAVIOUR

t_lineTriggerBaseBehaviour **BEHAVIOUR**

DEFINED AS "The triggerList attribute of this object class is constrained to triggers of type (see Rec. Q.1241) 12,13,14 and 16.";;;;

REGISTERED AS {inSSFManagedObjectClass 24};

7.25 Terminating Trunk Trigger Base

t_trunkTriggerBase MANAGED OBJECT CLASS

DERIVED FROM triggerBase;

CHARACTERIZED BY

t_trunkTriggerBasePackage **PACKAGE**

BEHAVIOUR

t_trunkTriggerBaseBehaviour **BEHAVIOUR**

DEFINED AS "The triggerList attribute of this object class is constrained to triggers of type (see Rec. Q.1241) 12,13,14 and 16.";;;;

REGISTERED AS {inSSFManagedObjectClass 25};

7.26 Private Facility Trigger Base

privateFacilityTriggerBase **MANAGED OBJECT CLASS**

DERIVED FROM triggerBase;

CHARACTERIZED BY

privateFacilityBasePackage **PACKAGE**

BEHAVIOUR

privateFacilityBaseBehaviour **BEHAVIOUR**

DEFINED AS "The triggerList attribute of this object class may contain triggers of any type (see Rec. Q.1241).";;

REGISTERED AS {inSSFManagedObjectClass 26};

7.27 Office Trigger Base

officeTriggerBase **MANAGED OBJECT CLASS**

DERIVED FROM triggerBase;

CHARACTERIZED BY

officeTriggerBasePackage **PACKAGE**

BEHAVIOUR

officeTriggerBaseBehaviour **BEHAVIOUR**

DEFINED AS "The triggerList attribute of this object class may contain triggers of type (see Rec. Q.1241) 3-18.";;

REGISTERED AS {inSSFManagedObjectClass 27};

7.28 IN Call Gap

inCallGap **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

inCallGapPackage **PACKAGE**

BEHAVIOUR

inCallGapBehaviour **BEHAVIOUR**

DEFINED AS "This object class defines the OSF defined call gapping criteria.

The inCallGapId attribute is used as the RDN for naming.

The gapCriteria attribute allows configuring criteria for the calls to be gapped. Calls may be gapped for particular destinations, particular services or both.

The gapDuration attribute specifies the time interval for which gapping is active.

The gapInterval attribute specifies the minimum inter-arrival time between calls that will be passed.

The controlType attribute indicates how call gapping was activated. Call gapping may be activated by the SCP or the OSF.

The gapTreatment attribute specifies the treatment to be given to calls that have been gapped.

The administrative attribute may be used to administratively lock a inCallGap object.";;

ATTRIBUTES

inCallGapId	GET,
gapCriteria	GET-REPLACE,
gapDuration	GET-REPLACE,
gapInterval	GET-REPLACE,
controlType	GET-REPLACE,
gapTreatment	GET-REPLACE,
"ITU-T Rec. X.735":administrativeState	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 28};

7.29 Service Filtering

serviceFiltering **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

serviceFilteringPackage **PACKAGE**

BEHAVIOUR

serviceFilteringBehaviour **BEHAVIOUR**

DEFINED AS "This object class is used to specify how IN calls are to be filtered. It contains the criteria for filtering and specifies the treatment of filtered calls.

The object is created by the SSF as a result of the receipt of an activateServiceFiltering operation from the SCF.

- If the filteringCriteria attribute in the received operation has the value serviceKey, the filtering will be activated for that particular service and the serviceFiltering object will be associated with that particular service.
- If the filteringCriteria attribute in the received operation has the value dialledNumber or callingPartyNumber, the filtering will be activated for the particular services associated with the calling party or dialled number.

The SCF specifies that the network-dependent default duration is to be used by setting the attribute *duration* to "-2".

This object instance is automatically deleted when the stopTime is reached or when duration expires. Prior to deletion, the objectId, filteringCriteria and the countersValues are passed to the INAP ASE to be used in the INAP *serviceFilteringResponse* operation.

The serviceFilterId attribute is used as the RDN for naming.

The startTime attribute specifies the time at which service filtering will be or is started.

The stopTime attribute specifies the time at which service filtering will be stopped. If the incoming message specified a duration, the stop time is derived by adding the duration to the start time. If default timing was specified in the incoming request the stopTime will be set at the time this object instance is created by adding the default duration (specified in the serviceFilteringDefaultDuration object) to the specified start time.

NOTE – This implies that changes to the default duration made subsequent to creation of this object instance will have no effect on the stopTime.

The releaseCause specifies the release cause to be used for filtered calls.

The billingChargingCharacteristics attribute specifies the charging to be applied to filtered calls.

The filteredCallTreatment attribute specifies the treatment to be given to calls that have been filtered, e.g. inBandInfo, tone, etc.;;

ATTRIBUTES

serviceFilterId GET,
startTime GET,
stopTime GET,
releaseCause GET,
billingChargingCharacteristics GET,
filteredCallTreatment GET;;;

CONDITIONAL PACKAGES

TimeBasedFilteringPackage**PACKAGE**

timeBasedFilteringPackageBhvr **BEHAVIOUR**

"This package specifies that all calls an interval of at least "interval" must pass between calls that invoke SCF service logic";;

ATTRIBUTES

interval GET-REPLACE;

REGISTERED AS { inSSFPackage 1}; PRESENT IF "the incoming activateServiceFiltering message specified time based filtering",

countBasedFilteringPackage**PACKAGE**

countBasedFilteringPackageBhvr **BEHAVIOUR**

"This package specifies that only every nth call will be sent to the SFC where N is numberOfCalls + 1";;

ATTRIBUTES

numberOfCalls GET-REPLACE;

REGISTERED AS { inSSFPackage 2}; PRESENT IF "the incoming activateServiceFiltering message specified time based filtering",

countersPackage **PACKAGE**

countersPackageBhvr **BEHAVIOUR**

"This package specifies the maximum number of counters to be used and provides pointers to the counters used";;

ATTRIBUTES

maximumNumberOfCounters GET,

counterPointerList GET;

REGISTERED AS { inSSFPackage 3}; PRESENT IF "the incoming activateServiceFiltering message specified the use of counters",

;;

REGISTERED AS {inSSFManagedObjectClass 29};

7.30 Service Filtering Counter

serviceFilteringCounter **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

serviceFilteringCounterPackage **PACKAGE**

BEHAVIOUR

serviceFilteringCounterBehaviour **BEHAVIOUR**

DEFINED AS "This object counts calls that have been subjected to service filtering. The counterValue attribute contains the count and is automatically reset whenever the SSF sends a serviceFilteringResponse for that service filter.

The associatedServiceFilter attribute points to the serviceFilter for which this counter is active.";;

ATTRIBUTES

serviceFilteringCounterId GET,

counterValue GET,

associatedServiceFilter GET;;;

REGISTERED AS {inSSFManagedObjectClass 30};

NOTE – Do we need to model how counters are used. I.e. what causes one or another counter to be incremented.

7.31 Service Filtering Duration Default

serviceFilteringDurationDefault **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

serviceFilteringDurationDefaultPackage **PACKAGE**

BEHAVIOUR

serviceFilteringDurationDefaultBehaviour **BEHAVIOUR**

DEFINED AS "This object class stores the default duration to be used for service filtering. This value is stored in the interval attribute.";;

ATTRIBUTES

serviceFilteringDurationDefaultId	GET,
interval	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 31};

7.32 Initiate Call Default Information

initiateCallDefaultInformation **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

initiateCallDefaultInformationPackage **PACKAGE**

BEHAVIOUR

initiateCallDefaultInformationBehaviour **BEHAVIOUR**

DEFINED AS "This object class stores the default information to be used in setting up a call when the SCF provides incomplete call-setup information in the initiateCallAttempt operation.";;

ATTRIBUTES

initiateCallDefaultInformationId	GET,
callingPartyNumber	GET-REPLACE,
callingPartyCategory	GET-REPLACE,
forwardCallIndicators	GET-REPLACE,
natureOfConnectionIndicator	GET-REPLACE,
bearerService	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 32};

7.33 INAP Counter

iNAPCounter **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

iNAPCounterPackage **PACKAGE**

BEHAVIOUR

iNAPCounterBehaviour **BEHAVIOUR**

DEFINED AS "This object class provides the capability for counting particular events that occur in association with the use of INAP.

The attribute observedEventId specifies the semantics of the events counted by this particular counter. This value cannot be changed after the counter has been instantiated.

The attribute observedSCFAccessList identifies the SCF accesses that are being observed by this counter.

The attribute count contains the number of times the event has occurred since the last time the counter was zeroed."

NOTE – Do we want to allow resets?;;

ATTRIBUTES

iNAPCounterId	GET,
observedEventId	GET SET-BY-CREATE,
observedSCFAccessList	GET SET-BY-CREATE,
administrativeState	GET-REPLACE,
count	GET SET-BY-CREATE;;;

REGISTERED AS {inSSFManagedObjectClass 33};

7.34 Service Feature Control

serviceFeatureControl **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

servicefeatureControl Package **PACKAGE**

BEHAVIOUR

servicefeatureControl Behaviour **BEHAVIOUR**

DEFINED AS "The serviceFeatureControl managed object represents the capability of controlling an IN service.

The serviceFeatureControlId Attribute is used as the RDN.

The serviceKey attribute identifies the service to be invoked.

The administrativeState indicates whether the IN service has been administratively disabled.

The defaultCharging attribute specifies how charging is to be applied if no instructions are received from the SCF.

The chargingProfile attribute specifies the type of record to be generated if this is not clear from the context of the call or from the instructions received from the SCF.

The iNAPASE attribute identifies the INAP ASE to be associated with that service.

The sCFAccessPointer attribute identifies the sCFAccess to which INAP messages for this service are to be sent.

The processingInstructions attribute specifies the default values for feature control, e.g. that IN-IN interworking is not allowed.

The exceptionHandling attribute specifies the actions to be taken by the SSF if invocation of the IN service logic fails.";;

ATTRIBUTES

serviceFeatureControlId	GET,
serviceKey	GET-REPLACE,
administrativeState	GET-REPLACE,
defaultCharging	GET-REPLACE,
chargingProfile	GET-REPLACE,
iNAPASE	GET-REPLACE,
sCFAccessPointer	GET-REPLACE,
processingInstructions	GET-REPLACE,
routeListMapping	GET-REPLACE,
exceptionHandling	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 34};

7.35 SCF Access

scfAccess **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

scfAccessPackage **PACKAGE**

BEHAVIOUR

scfAccessBehaviour **BEHAVIOUR**

DEFINED AS "The scfAccess managed object identifies the SCF access to be used for particular services and is used as a single point of reference for data items used for IN service control.

The scfAccessId Attribute is used as the RDN.";;

ATTRIBUTES

scfAccessId GET;;;

REGISTERED AS {inSSFManagedObjectClass 35};

7.36 SCF Access Point Code Based

scfAccessPointCodeBased **MANAGED OBJECT CLASS**

DERIVED FROM scfAccess;

CHARACTERIZED BY

scfAccessPointCodeBasedPackage **PACKAGE**

BEHAVIOUR

scfAccessPointCodeBased Behaviour **BEHAVIOUR**

DEFINED AS "The scfAccessPointCodeBased managed object identifies the SCF access by means of point codes.

The dPCPointer attribute points to an object of class mtpSignPoint that identifies the destination point code to be used.

The oPCPointer attribute points to an object of class mtpSignPoint that identifies the origination point code to be used.

The sSIDPointer attribute points to an object of class scfpAccessPoint that identifies the subsystem id to be used.";;

ATTRIBUTES

dPCPointer GET-REPLACE,
oPCPointer GET-REPLACE,
sSIDPointer GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 36};

7.37 SCF Global Title Based

scfAccessGlobalTitleBased **MANAGED OBJECT CLASS**

DERIVED FROM scfAccess;

CHARACTERIZED BY

scfAccessGlobalTitleBasedPackage **PACKAGE**

BEHAVIOUR

scfAccessGlobalTitleBased Behaviour **BEHAVIOUR**

DEFINED AS "The scfAccessPointCodeBased managed object identifies the SCF access by means of point codes.

The globalTitleRulePtr attribute points to an object of class gtRule.

The sCPAddress attribute

The sSIDPointer attribute points to an object of class sccpAccessPoint that identifies the subsystem id to be used.";;

ATTRIBUTES

globalTitleRulePtr	GET-REPLACE,
sCPAddress	GET-REPLACE,
sSIDPointer	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 37};

7.38 IP Configuration

iPConfiguration **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

iPConfigurationPackage **PACKAGE**

BEHAVIOUR

scfAccessGlobalTitleBased Behaviour **BEHAVIOUR**

DEFINED AS "The iPConfigurationId managed object specifies the capabilities of an IP and its availability.

The iPConfigurationId is used in forming the RDN.

The operationalState attribute specifies whether the IP is enabled.

The administrativeState specifies whether the IP is locked or unlocked.

The iPCapabilityList attribute describes the functional capabilities of the IP; e.g. tone generation, speech synthesis, etc.";;

ATTRIBUTES

iPConfigurationId	GET,
"Recommendation X.721 : 1992":administrativeState	GET-REPLACE,
"Recommendation X.721 : 1992":operationalState	GET-REPLACE,
iPCapabilityList	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 38};

7.39 Assist Treatment Configuration

assistTreatmentConfiguration **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

assistTreatmentConfigurationPackage **PACKAGE**

BEHAVIOUR

assistTreatmentConfigurationBehaviour **BEHAVIOUR**

DEFINED AS "The assistTreatmentConfiguration managed object the way in which the assisting SSF should determine how to manipulate information to be sent in the assistRequestInstruction (ARI) message and the SCF access to which the ARI is to be sent.

The assistTreatmentConfigurationId is used in forming the RDN.

The digitStringToCorrelationIdMapping attribute specifies how to map the received digit string to the correlationId to be used in the ARI message so that the SCF can correlate the ARI with its ETC (establishTemporaryConnection) message.

The digitStringToScfIdMapping specifies the mapping from the received digitString to the sCFId so that the SSF can identify the SCP with which it has to communicate in order to receive assist instructions.

The sCFAccessPtr attribute identifies the sCFAccess to be used for communicating with the previously identified SCP.";;

ATTRIBUTES

assistTreatmentConfigurationId	GET,
digitStringToCorrelationIdMapping	GET-REPLACE,
digitStringToScfIdMapping	GET-REPLACE,
sCFAccessPtr	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 39};

7.40 Ported Number Trigger

portedNumberTrigger **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

portedNumberTriggerPackage **PACKAGE**

BEHAVIOUR

portedNumberTriggerBehaviour **BEHAVIOUR**

DEFINED AS "The portedNumberTrigger managed object specifies the length of the dialled digits string on which the decision to check for a ported number is made.";;

ATTRIBUTES

portedNumberTriggerId	GET SET-BY-CREATE,
serviceKey	GET SET-REPLACE,
dialledDigitLength	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 40};

7.41 Ported Number List

portedNumberList **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721 : 1992": top;

CHARACTERIZED BY

portedNumberListPackage **PACKAGE**

BEHAVIOUR

portedNumberListBehaviour **BEHAVIOUR**

DEFINED AS "The portedNumberList managed object specifies the list of dialled digits of the terminating address for which the exchange has to check for additional routing information.";;

ATTRIBUTES

portedNumberListId	GET SET-BY-CREATE,
terminatingDialDigitsList	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 41};

7.42 INAP Current Data

iNAPCurrentData **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation Q.822": currentData;

CHARACTERIZED BY

iNAPCurrentDataPackage **PACKAGE**

BEHAVIOUR

iNAPCurrentDataBehaviour **BEHAVIOUR**

DEFINED AS "This object class provides the capability for counting particular events that occur in a given time period in association with the use of INAP. Also, the threshold attribute allows thresholding of the count during the time interval. If the threshold is exceeded, a notification is emitted. Detailed behavioural description is found in the superclass definition.

The attribute observedEventId specifies the semantics of the events counted by this particular object.

The attribute observedSCFAccessList identifies the SCF accesses that are being observed by this object.

The attribute count contains the number of times the event has occurred during the time interval.";;

ATTRIBUTES

observedEventId	GET SET-BY-CREATE,
observedSCFAccessList	GET SET-BY-CREATE,
count	GET;;;

REGISTERED AS {inSSFManagedObjectClass 42};

7.43 INAP History Data

iNAPHistoryData **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation Q.822": historyData;

CHARACTERIZED BY

iNAPHistoryDataPackage **PACKAGE**

BEHAVIOUR

iNAPHistoryDataBehaviour **BEHAVIOUR**

DEFINED AS "This object class provides the capability for storing the content of previous iNAPCurrentData. objectsDetailed behavioural description is found in the superclass definition.

The attribute observedEventId specifies the semantics of the events counted by this particular object.
 The attribute observedSCFAccessList identifies the SCF accesses that are being observed by this object.
 The attribute count contains the number of times the event has occurred during the time interval."

ATTRIBUTES

observedEventId	GET SET-BY-CREATE,
observedSCFAccessList	GET SET-BY-CREATE,
count	GET;;;

REGISTERED AS {inSSFManagedObjectClass 43};

7.44 Default Charging

defaultCharging **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721": top;

CHARACTERIZED BY

defaultChargingPackage **PACKAGE**

BEHAVIOUR

defaultChargingBehaviour **BEHAVIOUR**

DEFINED AS "This object class defines the default action to be taken if no specific charging information is supplied for the IN call. The default action may be service dependent."

ATTRIBUTES

defaultChargingId	GET SET-BY-CREATE,
defaultChargingAction	GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 44};

7.45 Exception Handler

exceptionHandler **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721": top;

CHARACTERIZED BY

exceptionHandlerPackage **PACKAGE**

BEHAVIOUR

exceptionHandlerBehaviour **BEHAVIOUR**

DEFINED AS "This object class defines the action to be taken by the SSF as default treatment when an error occurs in call processing."

ATTRIBUTES

exceptionHandlerId	GET SET-BY-CREATE,
missingCustomerRecordException	GET-REPLACE,
missingParameterException	GET-REPLACE,
systemFailureException	GET-REPLACE,
taskRefusedException	GET-REPLACE,
unexpectedValueException	GET-REPLACE,
unexpectedparameterException	GET-REPLACE,
unexpectedValueException	GET-REPLACE,
unexpectedComponentSequenceException	GET-REPLACE;

NOTIFICATIONS

callProcessingException;;;

REGISTERED AS {inSSFManagedObjectClass 45};

[NOTE – Do we want OA&M alarms generated by this]

7.46 SSF Timer

ssFTimer **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation X.721": top;

CHARACTERIZED BY

defaultChargingPackage **PACKAGE**

BEHAVIOUR

ssFTimerBehaviour **BEHAVIOUR**

DEFINED AS "This object class defines the value of the timer T_{SSF}"

ATTRIBUTES

ssFTimerId

timerValue

GET SET-BY-CREATE,

GET-REPLACE;;;

REGISTERED AS {inSSFManagedObjectClass 46};

7.47 SCF Application Entity

scfApplicationEntity **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation M.3100": software;

CHARACTERIZED BY

scfApplicationEntityPackage **PACKAGE**

BEHAVIOUR

scfApplicationEntityBehaviour **BEHAVIOUR**

DEFINED AS "This object class represents the SCF application process.";;;

REGISTERED AS {inSSFManagedObjectClass 47};

7.48 SSF Application Entity

ssfApplicationEntity **MANAGED OBJECT CLASS**

DERIVED FROM "Recommendation M.3100": software;

CHARACTERIZED BY

ssfApplicationEntityPackage **PACKAGE**

BEHAVIOUR

ssfApplicationEntityBehaviour **BEHAVIOUR**

DEFINED AS "This object class represents the SSF application process.";;;

REGISTERED AS {inSSFManagedObjectClass 48};

8 Package definitions

No external conditional packages defined.

9 Attribute definitions

9.1 bcsmId Attribute

bcsmId ATTRIBUTE
WITH ATTRIBUTE SYNTAX NameType;
MATCHES FOR EQUALITY;
BEHAVIOUR
bcsmIdBhvr BEHAVIOUR
DEFINED AS "This attribute is used as the RDN attribute for naming.";;
REGISTERED AS {inSSFattribute 1};

9.2 tdpId Attribute

tdpId ATTRIBUTE
WITH ATTRIBUTE SYNTAX NameType;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdpIdBhvr BEHAVIOUR
DEFINED AS "This attribute is used as the RDN attribute for naming.";;
REGISTERED AS {inSSFattribute 2};

9.3 tdpMode Attribute

tdpMode ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN1Module.TdpMode;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdpModeBhvr BEHAVIOUR
DEFINED AS "This attribute specifies whether the TDP is configured as a request or notification TDP.
NOTE – In some cases only one particular mode may be valid for a TDP. This will be specified in the appropriate subclass.";;
REGISTERED AS {inSSFattribute 3};

9.4 tdp1Criteria Attribute

tdp1Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP1Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp1CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include calling party number, bearer capability and class of service.";;
REGISTERED AS {inSSFattribute 4};

9.5 tdp2Criteria Attribute

tdp2Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP2Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp2CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include calledPartyNumber, callingPartyNumber, digitString and stringLength.";;

REGISTERED AS {inSSFattribute 5};

9.6 tdp3Criteria Attribute

tdp3Criteria ATTRIBUTE

WITH ATTRIBUTE SYNTAX TDP3Filter;

MATCHES FOR EQUALITY;

BEHAVIOUR

tdp3CriteriaBhvr BEHAVIOUR

DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include calledPartyNumber, callingPartyNumber, natureOfAddress, digitString, stringLength, facilityInformation and featureActivation.";;

REGISTERED AS {inSSFattribute 6};

9.7 tdp4Criteria Attribute

tdp4Criteria ATTRIBUTE

WITH ATTRIBUTE SYNTAX TDP4Filter;

MATCHES FOR EQUALITY;

BEHAVIOUR

tdp4CriteriaBhvr BEHAVIOUR

DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause, callingPartyNumber, and featureActivation.";;

REGISTERED AS {inSSFattribute 7};

9.8 tdp5Criteria Attribute

tdp5Criteria ATTRIBUTE

WITH ATTRIBUTE SYNTAX TDP5Filter;

MATCHES FOR EQUALITY;

BEHAVIOUR

tdp5CriteriaBhvr BEHAVIOUR

DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause and featureActivation.";;

REGISTERED AS {inSSFattribute 8};

9.9 tdp6Criteria Attribute

tdp6Criteria ATTRIBUTE

WITH ATTRIBUTE SYNTAX TDP6Filter;

MATCHES FOR EQUALITY;

BEHAVIOUR

tdp6CriteriaBhvr BEHAVIOUR

DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause and featureActivation.";;

REGISTERED AS {inSSFattribute 9};

9.10 tdp7Criteria Attribute

tdp7Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP7Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp7CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include facilityInformation and featureActivation.";;
REGISTERED AS {inSSFattribute 10};

9.11 tdp8Criteria Attribute

tdp8Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP8Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp8CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include facilityInformation and featureActivation.";;
REGISTERED AS {inSSFattribute 11};

9.12 tdp9Criteria Attribute

tdp9Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP9Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp9CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause and featureActivation.";;
REGISTERED AS {inSSFattribute 12};

9.13 tdp10Criteria Attribute

tdp10Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP10Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp10CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause and featureActivation.";;
REGISTERED AS {inSSFattribute 13};

9.14 tdp12Criteria Attribute

tdp12Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP12Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp12CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include classOfService and callingPartyNumber.";;
REGISTERED AS {inSSFattribute 14};

9.15 tdp13Criteria Attribute

tdp13Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP13Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp13CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include featureActivation and callingPartyNumber.";;
REGISTERED AS {inSSFattribute 15};

9.16 tdp14Criteria Attribute

tdp14Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP14Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp14CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include featureActivation and callingPartyNumber.";;
REGISTERED AS {inSSFattribute 16};

9.17 tdp15Criteria Attribute

tdp15Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP15Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp15CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include facilityInformation and featureActivation.";;
REGISTERED AS {inSSFattribute 17};

9.18 tdp16Criteria Attribute

tdp16Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP16Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp15CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include facilityInformation and featureActivation.";;
REGISTERED AS {inSSFAttribute 18};

9.19 tdp17Criteria Attribute

tdp17Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP17Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp17CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause and featureActivation.";;
REGISTERED AS {inSSFAttribute 19};

9.20 tdp18Criteria Attribute

tdp18Criteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX TDP18Filter;
MATCHES FOR EQUALITY;
BEHAVIOUR
tdp18CriteriaBhvr BEHAVIOUR
DEFINED AS "This attribute specifies criteria that will cause a triggering of an IN service. It is structured syntactically as a filter in order to allow formulation of complex trigger conditions based on the combination of various predicates. The criteria may include cause and featureActivation.";;
REGISTERED AS {inSSFAttribute 20};

9.21 triggerAssociation Attribute

triggerAssociation ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.TriggerAssociation;
MATCHES FOR EQUALITY;
BEHAVIOUR
triggerAssociationBhvr BEHAVIOUR
DEFINED AS "This attribute specifies the basis on which the trigger is to be applied.";;
REGISTERED AS {inSSFAttribute 21};

Editor's Note: Should this attribute be set-valued?

9.22 inEscape Attribute

inEscape ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.INEscapes;
MATCHES FOR EQUALITY;
BEHAVIOUR
inEscapeBhvr BEHAVIOUR
DEFINED AS "This set valued attribute specifies the call related information on the basis of which escape from IN processing would occur.";;

REGISTERED AS {inSSFattribute 22};

9.23 congestionAction Attribute

congestionAction ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.CongestionAction;

MATCHES FOR EQUALITY;

BEHAVIOUR

congestionActionBhvr BEHAVIOUR

DEFINED AS "This attribute specifies the action to be taken if the SCF cannot be reached or does not respond in time. Valid actions are terminate call, play announcement, play announcement and terminate call.";;

REGISTERED AS {inSSFattribute 23};

9.24 serviceKey Attribute

serviceKey ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ServiceKey;

MATCHES FOR EQUALITY;

BEHAVIOUR

serviceKeyBhvr BEHAVIOUR

DEFINED AS "This attribute specifies the logical service key for the IN service to be invoked.";;

REGISTERED AS {inSSFattribute 24};

9.25 inCallGapId Attribute

inCallGapId ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.NameType;

MATCHES FOR EQUALITY;

BEHAVIOUR

inCallGapIdBhvr BEHAVIOUR

DEFINED AS "This attribute is used for the RDN of the inCallGap object.";;

REGISTERED AS {inSSFattribute 25};

9.26 gapDuration Attribute

gapDuration ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.GapDuration;

MATCHES FOR EQUALITY;

BEHAVIOUR

gapDurationBhvr BEHAVIOUR

DEFINED AS "This attribute is used to specify the length of time for which gapping is to be applied.";;

REGISTERED AS {inSSFattribute 26};

9.27 gapInterval Attribute

gapInterval ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.GapInterval;

MATCHES FOR EQUALITY;

BEHAVIOUR

gapIntervalBhvr BEHAVIOUR

DEFINED AS "This attribute is used to specify the fraction of calls to be gapped. No gapping when the attribute is zero and gap all calls gapInterval is one.";;

REGISTERED AS {inSSFattribute 27};

9.28 gapTreatment Attribute

gapTreatment ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.CallTreatment;
MATCHES FOR EQUALITY;
BEHAVIOUR
gapTreatmentBhvr BEHAVIOUR
DEFINED AS "This attribute is used to specify the treatment to be applied to a gapped call. It may specify information to be sent to the calling party, release of the call with a cause value or information to be sent and subsequent release of the call.";;
REGISTERED AS {inSSFattribute 28};

9.29 digitString Attribute

digitString ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.DigitString;
MATCHES FOR EQUALITY;
BEHAVIOUR
digitStringBhvr BEHAVIOUR
DEFINED AS "This attribute is used to identify a digit string. In trigger point objects this digit string may be used as criterion or a part of a logical expression for invoking IN service logic.";;
REGISTERED AS {inSSFattribute 29};

9.30 authenticationCode Attribute

authenticationCode ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.AuthenticationCode;
MATCHES FOR EQUALITY;
BEHAVIOUR
authenticationCodeBhvr BEHAVIOUR
DEFINED AS "This attribute contains a parameter used in authenticating a user for access to data or services.";;
REGISTERED AS {inSSFattribute 30};

9.31 calledPartyNumberList Attribute

calledPartyNumberList ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.CalledPartyNumberList;
MATCHES FOR EQUALITY SET-COMPARISON SET-INTERSECTION;
BEHAVIOUR
calledPartyNumberListBhvr BEHAVIOUR
DEFINED AS "This attribute is a list of called party directory numbers. The list may be used as screening list.";;
REGISTERED AS {inSSFattribute 31};

9.32 callingPartyNumberList Attribute

callingPartyNumberList ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.CallingPartyNumberList;
MATCHES FOR EQUALITY SET-COMPARISON SET-INTERSECTION;
BEHAVIOUR
callingPartyNumberListBhvr BEHAVIOUR
DEFINED AS "This attribute is a list of calling party directory numbers. The list may be used as screening list.";;
REGISTERED AS {inSSFattribute 32};

9.33 version Attribute

version ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.Version;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
versionBhvr BEHAVIOUR
DEFINED AS "This attribute specifies the version of an entity. The data-type used to encode the version value must support ordering.";;
REGISTERED AS {inSSFattribute 33};

9.34 observedEventId Attribute

observedEventId ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.ObservedEventId;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
observedEventIdBhvr BEHAVIOUR
DEFINED AS "This attribute identifies the event that is being observed by the object in which it is installed. If this object is a counter, the count will change every time one of these events occurs.";;
REGISTERED AS {inSSFattribute 34};

9.35 observedSCFAccessList Attribute

observedSCFAccessList ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.ObservedSCFAccessList;
MATCHES FOR EQUALITY ORDERING SET-INTERSECTION SET-COMPARISON;
BEHAVIOUR
observedSCFAccessListBhvr BEHAVIOUR
DEFINED AS "This attribute identifies the set of SCF access to which the object is related or with which it is associated.";;
REGISTERED AS {inSSFattribute 35};

9.36 count Attribute

count ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.Count;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
countBhvr BEHAVIOUR
DEFINED AS "This is an integer count of the specified event.";;
REGISTERED AS {inSSFattribute 36};

9.37 defaultCharging Attribute

defaultCharging ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.DefaultCharging;
MATCHES FOR EQUALITY;
BEHAVIOUR
defaultChargingBhvr BEHAVIOUR
DEFINED AS "Services do not necessarily require that charging information be sent from the SCF to the SSF. The SSF, therefore, needs to be able to refer to a choice of default charging options. This attribute specifies the following options:
– indication that same charging level has to be used as that determined by PSTN before (single value);
– indication for setting the call to "free of charge" (single value);

- indication to reject the call (single value);
- specific charge level (set of values).";;

REGISTERED AS {inSSFattribute 37};

9.38 chargingProfile Attribute

chargingProfile ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ChargingProfile;
MATCHES FOR EQUALITY;
BEHAVIOUR
chargingProfileBhvr BEHAVIOUR

DEFINED AS "IN triggering may occur before the SSP specific usage metering control function determines the kind of usage metering. In this cases the 'charging profile' of the IN service determines the kind of usage metering recording. This attribute is defined network operator specific.";;

REGISTERED AS {inSSFattribute 38};

9.39 iNAPASE Attribute

iNAPASE ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ObjectInstance;
MATCHES FOR EQUALITY;
BEHAVIOUR
iNAPASEBhvr BEHAVIOUR

DEFINED AS "Associates an INAP ASE with the object that has this attribute.";;

REGISTERED AS {inSSFattribute 39};

9.40 iNEscape Attribute

iNEscape ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.iNEscape;
MATCHES FOR EQUALITY;
BEHAVIOUR
iNEscapeBhvr BEHAVIOUR

DEFINED AS "This attribute defines a set of conditions that will cause escape from IN call processing and result in normal call processing.";;

REGISTERED AS {inSSFattribute 40};

9.41 exceptionHandling Attribute

exceptionHandling ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ExceptionHandling;
MATCHES FOR EQUALITY;
BEHAVIOUR
exceptionHandlingBhvr BEHAVIOUR

DEFINED AS "This attributes contains continuation information for the call processing (e.g. intercept treatment, announcements, etc.). Includes pointers to customizable resources.";;

REGISTERED AS {inSSFattribute 41};

9.42 sCFAccessPointer Attribute

sCFAccessPointer ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ObjectInstance;
MATCHES FOR EQUALITY;
BEHAVIOUR
sCFAccessPointerBhvr BEHAVIOUR

DEFINED AS "This attributes identifies the SCP to which INAP messages for this service are to be sent.";;
REGISTERED AS {inSSFattribute 42};

9.43 triggerList Attribute

triggerList ATTRIBUTE
WITH ATTRIBUTE SYNTAX SET OF ObjectInstance;
MATCHES FOR EQUALITY SET-INTERSECTION SET-COMPARISON;
BEHAVIOUR
triggerListBhvr BEHAVIOUR

DEFINED AS "This attribute associates a set of triggers to the object that has this attribute.";;
REGISTERED AS {inSSFattribute 43};

9.44 basePriority Attribute

basePriority ATTRIBUTE
WITH ATTRIBUTE SYNTAX INTEGER;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
basePriorityBhvr BEHAVIOUR

DEFINED AS "The basePriority attribute allows specification of which triggerList will be active when several would apply simultaneously to a call. The larger number indicates lower priority.";;
REGISTERED AS {inSSFattribute 44};

9.45 gapCriteria Attribute

gapCriteria ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.GapCriteria;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
gapCriteriaBhvr BEHAVIOUR

DEFINED AS "The gapCriteria attribute allows configuring criteria for the calls to be gapped. Calls may be gapped for particular destinations, particular services or both.";;
REGISTERED AS {inSSFattribute 45};

9.46 gapDuration Attribute

gapDuration ATTRIBUTE
WITH ATTRIBUTE SYNTAX SSFASN.Module.GapDuration;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
gapDurationBhvr BEHAVIOUR

DEFINED AS "The gapDuration attribute specifies the time interval for which gapping is active.";;
REGISTERED AS {inSSFattribute 46};

9.47 gapInterval Attribute

gapInterval ATTRIBUTE
WITH ATTRIBUTE SYNTAX INTEGER;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
gapInterval Bhvr BEHAVIOUR

DEFINED AS "The gapInterval attribute specifies the minimum inter-arrival time between calls that will be passed. The time is specified in milliseconds.";;
REGISTERED AS {inSSFattribute 47};

9.48 gapTreatment Attribute

gapTreatment ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.CallTreatment;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
gapTreatmentBhvr BEHAVIOUR

DEFINED AS "The gapTreatment attribute specifies the treatment to be given to calls that have been gapped.";;

REGISTERED AS {inSSFattribute 48};

9.49 controlType Attribute

controlType ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ControlType;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
controlTypeBhvr BEHAVIOUR

DEFINED AS "The controlType attribute indicates how call gapping was activated. Call gapping may be activated by the SCP or the OSF.";;

REGISTERED AS {inSSFattribute 49};

9.50 iPCapabilityList Attribute

iPCapabilityList ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.ControlType;
MATCHES FOR EQUALITY;
BEHAVIOUR
iPCapabilityListBhvr BEHAVIOUR

DEFINED AS "The iPCapabilityList attribute describes the functional capabilities of the IP, e.g. tone generation, speech synthesis, etc.";;

REGISTERED AS {inSSFattribute 50};

9.51 dialledDigitLength

dialledDigitLength ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.DialledDigitLength;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
dialledDigitLengthBhvr BEHAVIOUR

DEFINED AS "The dialledDigitLength specifies the number of digits on which the decision to check the portedNumberList is made.";;

REGISTERED AS {inSSFattribute 51};

9.52 terminatingDialDigitsList Attribute

terminatingDialDigitsList ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.TerminatingDialDigitsList;
MATCHES FOR EQUALITY;
BEHAVIOUR
terminatingDialDigitsListBhvr BEHAVIOUR

DEFINED AS "The terminatingDialDigitsList attribute is a list of entries that specifies the dialled digits for which the exchange needs to obtain instructions on how to route the call due to possible porting of that number. The list consists of digit strings that if matched will cause triggering of an LNP (Local Number Portability) query.";;

REGISTERED AS {inSSFattribute 52};

9.53 defaultChargingAction Attribute

defaultChargingAction ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.DefaultChargingAction;
MATCHES FOR EQUALITY;
BEHAVIOUR
defaultChargingActionBhvr BEHAVIOUR

DEFINED AS "The defaultChargingAction attribute defines the default action to be taken if no specific charging information is supplied for the IN call. The default action may be service dependent.";

REGISTERED AS {inSSFattribute 53};

9.54 timerValue Attribute

timerValue ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.TimerValue;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
timerValueBhvr BEHAVIOUR

DEFINED AS "The timerValue attribute specifies the amount of time that is to elapse after a particular event has occurred prior to the occurrence of another event. The values is specified in milliseconds.";

REGISTERED AS {inSSFattribute 54};

9.55 missingCustomerRecordException Attribute

missingCustomerRecordException ATTRIBUTE

WITH ATTRIBUTE SYNTAX SSFASN.Module.INAPEXception;
MATCHES FOR EQUALITY ORDERING;
BEHAVIOUR
missingCustomerRecordExceptionBhvr BEHAVIOUR

DEFINED AS "The missingCustomerRecordException attribute specifies the action to be taken if the customer record for a particular call cannot be located.";

REGISTERED AS {inSSFattribute 55};

NOTE – Similar templates will be provided in the final edit for the following exceptions: missingParameterException, systemFailureException, taskRefusedException, unexpectedValueException, unexpectedparameterException, unexpectedValueException, unexpectedComponentSequenceException.

10 Name Bindings

10.1 TDP to BCSM

tdp-bcsm **NAME BINDING**
SUBORDINATE OBJECT CLASS tdp **AND SUBCLASSES;**
NAMED BY
SUPERIOR OBJECT CLASS bcsm **AND SUBCLASSES ;**
WITH ATTRIBUTE tdpId;
CREATE WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 1};

10.2 Originating Trunk Trigger Base to Configured End Point Group

```
o_trunkTriggerBase-cepsg      NAME BINDING
  SUBORDINATE OBJECT CLASS o_trunkTriggerBase  AND SUBCLASSES;
  NAMED BY
  SUPERIOR OBJECT CLASS ceps AND SUBCLASSES ;
  WITH ATTRIBUTE triggerBaseId;
  CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
  ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 2};

10.3 Terminating Trunk Trigger Base to Configured End Point Group

```
t_trunkTriggerBase-cepsg      NAME BINDING
  SUBORDINATE OBJECT CLASS t_trunkTriggerBase  AND SUBCLASSES;
  NAMED BY
  SUPERIOR OBJECT CLASS ceps AND SUBCLASSES ;
  WITH ATTRIBUTE triggerBaseId;
  CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
  ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 3};

10.4 Originating Line Trigger Base to Customer Profile

```
o_lineTriggerBase-customerProfile  NAME BINDING
  SUBORDINATE OBJECT CLASS o_lineTriggerBase  AND SUBCLASSES;
  NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation Q.824.1": customerProfile
  AND SUBCLASSES ;
  WITH ATTRIBUTE triggerBaseId;
  CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
  ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 4};

10.5 Terminating Line Trigger Base to Customer Profile

```
t_trunkTriggerBase-customerProfile  NAME BINDING
  SUBORDINATE OBJECT CLASS t_lineTriggerBase  AND SUBCLASSES;
  NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation Q.824.1": customerProfile
  AND SUBCLASSES ;
  WITH ATTRIBUTE triggerBaseId;
  CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
```

ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 5};

10.6 SCF Access to Managed Element

```
sCFAccess-managedElement    NAME BINDING
    SUBORDINATE OBJECT CLASS    sCFAccess    AND SUBCLASSES;
    NAMED BY
    SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
        AND SUBCLASSES ;
    WITH ATTRIBUTE    sCFAccessId;
    CREATE
    WITH-REFERENCE-OBJECT ,
    WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 6};

10.7 BCSM to Managed Element

```
bcsm-managedElement    NAME BINDING
    SUBORDINATE OBJECT CLASS    bcsm    AND SUBCLASSES;
    NAMED BY
    SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
        AND SUBCLASSES ;
    WITH ATTRIBUTE    sCFAccessId;
    CREATE
    WITH-REFERENCE-OBJECT ,
    WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 7};

10.8 IN Call Gap to SSF-SCF Application Entity

```
inCallGap-ssfScfAE    NAME BINDING
    SUBORDINATE OBJECT CLASS    inCallGap    AND SUBCLASSES;
    NAMED BY
    SUPERIOR OBJECT CLASS ssfScfAE
        AND SUBCLASSES ;
    WITH ATTRIBUTE    inCallGapId;
    CREATE
    WITH-REFERENCE-OBJECT ,
    WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 8};

10.9 Service Filtering to Service Feature Control

```
serviceFiltering-serviceFeatureControl    NAME BINDING
    SUBORDINATE OBJECT CLASS    serviceFiltering    AND SUBCLASSES;
    NAMED BY
```

SUPERIOR OBJECT CLASS serviceFeatureControl **AND SUBCLASSES** ;
WITH ATTRIBUTE serviceFilteringId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 9};

10.10 IP Configuration to Managed Element

ipConfiguration-managedElement **NAME BINDING**
SUBORDINATE OBJECT CLASS ipConfiguration **AND SUBCLASSES**;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
AND SUBCLASSES ;
WITH ATTRIBUTE ipConfigurationId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 10};

10.11 Dialed Digit Length to Managed Element

dialledDigitLength-managedElement **NAME BINDING**
SUBORDINATE OBJECT CLASS dialledDigitLength **AND SUBCLASSES**;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
AND SUBCLASSES ;
WITH ATTRIBUTE portedNumberTriggerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 11};

10.12 Terminating Dialed Digit List to Dialed Digit Length

terminatingDialedDigitList-dialledDigitLength **NAME BINDING**
SUBORDINATE OBJECT CLASS terminatingDialedDigitList **AND SUBCLASSES**;
NAMED BY
SUPERIOR OBJECT CLASS dialledDigitLength
AND SUBCLASSES ;
WITH ATTRIBUTE portedNumberListId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 12};

10.13 inAuthorization to tdp

inAuthorization-tdp **NAME BINDING**
 SUBORDINATE OBJECT CLASS inAuthorization **AND SUBCLASSES;**
 NAMED BY
 SUPERIOR OBJECT CLASS tdp
 AND SUBCLASSES ;
 WITH ATTRIBUTE inAuthorizationId;
 CREATE
 WITH-REFERENCE-OBJECT ,
 WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
 ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 13};

10.14 Initiate Call Default Information to Managed Element

initiateCallDefaultInformation-managedElement **NAME BINDING**
 SUBORDINATE OBJECT CLASS initiateCallDefaultInformation **AND SUBCLASSES;**
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
 AND SUBCLASSES ;
 WITH ATTRIBUTE initiateCallDefaultInformationId;
 CREATE
 WITH-REFERENCE-OBJECT ,
 WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
 ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 14};

10.15 Assist Treatment Configuration to Managed Element

assistTreatmentConfiguration-managedElement **NAME BINDING**
 SUBORDINATE OBJECT CLASS assistTreatmentConfiguration **AND**
 SUBCLASSES;
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
 AND SUBCLASSES ;
 WITH ATTRIBUTE assistTreatmentConfigurationId;
 CREATE
 WITH-REFERENCE-OBJECT ,
 WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
 ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 15};

10.16 Ported Number Trigger to Managed Element

portedNumberTrigger-managedElement **NAME BINDING**
 SUBORDINATE OBJECT CLASS portedNumberTrigger **AND SUBCLASSES;**
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation M.3100": managedElement
 AND SUBCLASSES ;
 WITH ATTRIBUTE portedNumberTriggerId;
 CREATE
 WITH-REFERENCE-OBJECT ,

WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 16};

10.17 Ported Number List to Managed Element

```
portedNumberList-managedElement      NAME BINDING
SUBORDINATE OBJECT CLASS      portedNumberList      AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS portedNumberTrigger
AND SUBCLASSES ;
WITH ATTRIBUTE      portedNumberListId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 17};

10.18 Default Charging to Service Feature Control

```
defaultCharging-serviceFeatureControl  NAME BINDING
SUBORDINATE OBJECT CLASS      defaultCharging  AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS serviceFeatureControl
AND SUBCLASSES ;
WITH ATTRIBUTE      defaultChargingId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 18};

10.19 Exception Handler to Service Feature Control

```
exceptionHandler-serviceFeatureControl  NAME BINDING
SUBORDINATE OBJECT CLASS      exceptionHandler AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS serviceFeatureControl
AND SUBCLASSES ;
WITH ATTRIBUTE      exceptionHandlerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 19};

10.20 SSF Timer to SCF Access

```
sSFTimer-sCFAccess      NAME BINDING
SUBORDINATE OBJECT CLASS      sSFTimer      AND SUBCLASSES;
```


NAMED BY
SUPERIOR OBJECT CLASS sCFAccess
AND SUBCLASSES ;
WITH ATTRIBUTE sSFTimerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 20};

10.21 INAP Counter to SSF Application Entity

iNAPCounter-ssfApplicationEntity **NAME BINDING**
SUBORDINATE OBJECT CLASS iNAPCounter **AND SUBCLASSES;**
NAMED BY
SUPERIOR OBJECT CLASS ssfApplicationEntity
AND SUBCLASSES ;
WITH ATTRIBUTE iNAPCounterId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 21};

10.22 INAP Current Data to SSF Application Entity

iNAPCurrentData-ssfApplicationEntity **NAME BINDING**
SUBORDINATE OBJECT CLASS iNAPCurrentData **AND SUBCLASSES;**
NAMED BY
SUPERIOR OBJECT CLASS ssfApplicationEntity
AND SUBCLASSES ;
WITH ATTRIBUTE "ITU-T Recommendation Q.822":currentDataId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 22};

10.23 INAP History Data to SSF Application Entity

iNAPHistoryData-ssfApplicationEntity **NAME BINDING**
SUBORDINATE OBJECT CLASS iNAPHistoryData **AND SUBCLASSES;**
NAMED BY
SUPERIOR OBJECT CLASS ssfApplicationEntity
AND SUBCLASSES ;
WITH ATTRIBUTE "ITU-T Recommendation Q.822":HistoryDataId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
ONLY-IF-NO-CONTAINED-OBJECTS;

REGISTERED AS {inSSFNameBinding 23};

10.24 Assist Treatment Configuration to SSF Application Entity

```
assistTreatmentConfiguration-ssfApplicationEntity  NAME BINDING
  SUBORDINATE OBJECT CLASS    assistTreatmentConfiguration  AND
  SUBCLASSES;
  NAMED BY
  SUPERIOR OBJECT CLASS    ssfApplicationEntity
  AND SUBCLASSES ;
  WITH ATTRIBUTE    assistTreatmentConfigurationId;
  CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
  ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 24};

10.25 Service Feature Control to SSF Application Entity

```
serviceFeatureControl-ssfApplicationEntity  NAME BINDING
  SUBORDINATE OBJECT CLASS    serviceFeatureControl  AND SUBCLASSES;
  NAMED BY
  SUPERIOR OBJECT CLASS    ssfApplicationEntity
  AND SUBCLASSES ;
  WITH ATTRIBUTE    serviceFeatureControlId;
  CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
  DELETE
  ONLY-IF-NO-CONTAINED-OBJECTS;
```

REGISTERED AS {inSSFNameBinding 25};

11 ASN.1 Module

```
ASN1DefinedTypesModule { itu-t(0) recommendation(0) q(17) inmod(1831) informationModel(0) asn1Modules(2)
asn1DefinedTypesModule(0)}
```

```
DEFINITION IMPLICIT TAGS          ::=
```

```
BEGIN
```

```
-- EXPORTS everything
```

```
IMPORTS
```

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

```
--- see X.711
```

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

```
--- see X.721
```

```
BillingCharacteristics, CallTreatment, DefaultCharging, FilteredCallTreatment, FilteringCharacteristics,
FilteringCriteria, FilteringTimeOut,GapTreatment, GapInterval, GapDuration, GapCriteria, InbandInfo,
InformationToSend, Integer4, MessageID
```

```
FROM IN-CS-1-Operations {ccitt recommendations q 1218 modules(0) cs-1-operations(0) version1(0)}
```

```
--- see Q.1218
```

-- OBJECT IDENTIFIERS

managedObjectClass OBJECT IDENTIFIER ::= {informationModel managedObjectClass(3)}
package OBJECT IDENTIFIER ::= {informationModel package(4)}
nameBinding OBJECT IDENTIFIER ::= {informationModel nameBinding(6)}
attribute OBJECT IDENTIFIER ::= {informationModel attribute(7)}
action OBJECT IDENTIFIER ::= {informationModel action(9)}
notification OBJECT IDENTIFIER ::= {informationModel notification(10)}
behaviour OBJECT IDENTIFIER ::= {informationModel behaviour(11)}
notification OBJECT IDENTIFIER ::= {informationModel notification(10)}

-- ASN.1 Types

AuthenticationCode ::= OCTET STRING

BearerCapability ::= CHOICE {
 bearerCap [0] OCTET STRING,
 tmr [1] OCTET STRING}

-- bearerCap is encoded according to Q.763 or Q.931 and

-- tmr (transmission medium requirement parameter) is encoded according to ITU-T Q.763

CalledPartyNumber ::= OCTET STRING -- Encoded according to ITU-T Q.763

CalledPartyNumberList ::= SET OF CalledPartyNumber

CallingPartyNumber ::= OCTET STRING -- Encoded according to ITU-T Q.763

CallingPartyNumberList ::= SET OF CallingPartyNumber

Cause ::= OCTET STRING

-- Cause values encoded according to ITU-T Q.763.

-- Cause and Location values encoded according to ITU-T Q.850.

ChargeProfile ::= OCTET STRING -- Operator Specific

CongestionAction ::= ENUMERATED {
 terminateCall (0),
 playAnnouncement (1),
 playAnnouncementAndTerminate (2)}

ControlType ::= ENUMERATED {
 sCPInitiated (0),
 oSInitiated (1)}

Count ::= INTEGER

DialledDigitLength ::= INTEGER -- Specifies the length of a dialled digit string

DigitString ::= OCTET STRING -- Encoded in accordance with ITU-T Q.763

DefaultChargingAction ::= CHOICE {
 specificAction [1]ENUMERATED {
 continueWithNormalCharging (0),
 freeCall (1),
 releaseCall (2)}
 tariffReference [2]NameType }

DisplayInformation ::= IA5String (SIZE (minDisplayInformationLength ..maxDisplayInformationLength))

ExceptionHandling ::=

INAPException ::= ENUMERATED {
 continueCall (0),
 playAnnouncement (1),
 playAnnouncementAndContinueCall (2),
 releaseCall (3),
 playAnnouncementAndReleaseCall (4)}

INEscape ::= SEQUENCE OF DigitString

FeatureActivation ::= OCTET STRING -- Encoded in accordance with ITU-T Q.763

ForwardCallIndicators ::= OCTET STRING (SIZE (2))

-- Indicates the Forward Call Indicators. Refer to ITU-T Q.771 for encoding.

GapOnService ::= SEQUENCE OF ServiceKey

GapIndicators ::= SEQUENCE {
 duration [0] Duration,
 gapInterval [1] Interval }

IPCapabilityList ::= SET OF IPCapabilities

IPCapabilities ::= OCTET STRING (SIZE (minIPSSPCapabilitiesLength ..
 maxIPSSPCapabilitiesLength))

-- defined by network operator. Indicates the SRF resources available at the SSP.

ObservedEventId ::= ENUMERATED {
 dialogueInitiationAttempt (1),
 dialogueInitiatedWithInitialDP (2),
 dialogueInitiatedWithAssistRequestInstructions (3),
 dialogueInitiatedWithServiceFilteringResponse (4),
 dialogueInitiatedWithInitiateCallAttempt (5),
 dialogueInitiatedWithCallGap (6),
 dialogueInitiatedWithServiceFiltering (7),
 dialogueCongestion (8),
 tC-Message not accepted (9),
 sSFInitiatedDialoguesProcessed (10),
 sCFInitiatedDialoguesProcessed (11),
 errorOrRejectMessagesSentBy SSP (12),
 errorOrRejectMessagesFromSCP (13),
 timeoutOnSCFResponse (14),
 dialoguesAbortedBySCPOrRemoteTC (15),
 dialoguesAbortedBySSP (16),
 dialoguesInProgress (17)}

ObservedSCFAccessList ::= SET OF ObjectInstance

ServiceKey ::= Integer4

TdpCriteria ::= CHOICE {bearerCapability [0] BearerCapability,
 callingPartyNumber [1] CallingPartyNumber,
 calledPartyNumber [2] CalledPartyNumber,

	classOfService cause digitString facilityInformation featureActivation natureOfAddress stringLength	[3] ClassOfService, [4] Cause, [5] DigitString, [6] FacilityInformation, [7] FeatureActivation, [8] NatureOfAddress, [9] StringLength }
Tdp1Criteria ::= CHOICE {	callingPartyNumber calledPartyNumber classOfService	[1] CallingPartyNumber, [2] CalledPartyNumber, [3] ClassOfService}
Tdp2Criteria ::= CHOICE {	callingPartyNumber calledPartyNumber digitString stringLength	[1] CallingPartyNumber, [2] CalledPartyNumber, [5] DigitString, [9] StringLength }
Tdp3Criteria ::= CHOICE {	callingPartyNumber calledPartyNumber digitString facilityInformation featureActivation natureOfAddress stringLength	[1] CallingPartyNumber, [2] CalledPartyNumber, [5] DigitString, [6] FacilityInformation, [7] FeatureActivation, [8] NatureOfAddress, [9] StringLength }
Tdp4Criteria ::= CHOICE {	callingPartyNumber cause featureActivation	[1] CallingPartyNumber, [4] Cause, [7] FeatureActivation}
Tdp5Criteria ::= CHOICE {	cause featureActivation	[4] Cause, [7] FeatureActivation}
Tdp6Criteria ::= CHOICE {	cause featureActivation	[4] Cause, [7] FeatureActivation}
Tdp7Criteria ::= CHOICE {	facilityInformation featureActivation	[6] FacilityInformation, [7] FeatureActivation}
Tdp8Criteria ::= CHOICE {	facilityInformation featureActivation	[6] FacilityInformation, [7] FeatureActivation}
Tdp9Criteria ::= CHOICE {	cause featureActivation	[4] Cause, [7] FeatureActivation}
Tdp10Criteria ::= CHOICE {	cause featureActivation	[4] Cause, [7] FeatureActivation}
Tdp11Criteria ::= CHOICE {	cause featureActivation	[4] Cause, [7] FeatureActivation}
Tdp12Criteria ::= CHOICE {	callingPartyNumber classOfService	[1] CallingPartyNumber, [3] ClassOfService}
Tdp13Criteria ::= CHOICE {	callingPartyNumber cause featureActivation	[1] CallingPartyNumber, [4] Cause, [7] FeatureActivation}
Tdp14Criteria ::= CHOICE {	callingPartyNumber cause featureActivation	[1] CallingPartyNumber, [4] Cause, [7] FeatureActivation}

```

Tdp15Criteria ::= CHOICE {
    facilityInformation    [6] FacilityInformation,
    featureActivation      [7] FeatureActivation}

Tdp16Criteria ::= CHOICE {
    facilityInformation    [6] FacilityInformation,
    featureActivation      [7] FeatureActivation}

Tdp17Criteria ::= CHOICE {
    cause                  [4] Cause,
    featureActivation      [7] FeatureActivation}

Tdp18Criteria ::= CHOICE {
    cause                  [4] Cause,
    featureActivation      [7] FeatureActivation}

TDP1Filter ::= CMISFilter    -- restricted to using TDP1Criteria
TDP2Filter ::= CMISFilter    -- restricted to using TDP2Criteria
TDP3Filter ::= CMISFilter    -- restricted to using TDP3Criteria
TDP4Filter ::= CMISFilter    -- restricted to using TDP4Criteria
TDP5Filter ::= CMISFilter    -- restricted to using TDP5Criteria
TDP6Filter ::= CMISFilter    -- restricted to using TDP6Criteria
TDP7Filter ::= CMISFilter    -- restricted to using TDP7Criteria
TDP8Filter ::= CMISFilter    -- restricted to using TDP8Criteria
TDP9Filter ::= CMISFilter    -- restricted to using TDP9Criteria
TDP10Filter ::= CMISFilter   -- restricted to using TDP10Criteria
TDP11Filter ::= CMISFilter   -- restricted to using TDP11Criteria
TDP12Filter ::= CMISFilter   -- restricted to using TDP12Criteria
TDP13Filter ::= CMISFilter   -- restricted to using TDP13Criteria
TDP14Filter ::= CMISFilter   -- restricted to using TDP14Criteria
TDP15Filter ::= CMISFilter   -- restricted to using TDP15Criteria
TDP16Filter ::= CMISFilter   -- restricted to using TDP16Criteria
TDP17Filter ::= CMISFilter   -- restricted to using TDP17Criteria
TDP18Filter ::= CMISFilter   -- restricted to using TDP18Criteria

TdpMode ::= ENUMERATED {
    notification    (1),
    request         (2) }

TimerValue ::= INTEGER -- time specified in milliseconds

Tone ::= SEQUENCE {
    toneID    [0] Integer4,
    duration  [1] Integer4    OPTIONAL
}
-- The duration specifies the length of the tone in seconds; value 0 indicates infinite duration.

TerminatingDialledDigitList ::= SEQUENCE OF DigitString

```

TriggerAssociation ::= SET OF ObjectInstance
Version ::= GraphicString

END -- end of ASN1 DefinedTypesModule

APPENDIX I

Productions Imported From Q.1218

BillingChargingCharacteristics ::= OCTET STRING

CallTreatment ::= CHOICE {
 informationToSend [0] InformationToSend,
 releaseCause [1] Cause,
 both [2] SEQUENCE {
 informationToSend [0] InformationToSend,
 releaseCause [1] Cause
 }
}

-- The default value for Cause is the same as in ISUP.

DefaultCharging ::= CHOICE {
 pSTNChargingLevel [0] BOOLEAN,
 freeOfCharge [1] BOOLEAN,
 callReject [2] BOOLEAN,
 inChargeLevels [3] SET OF OCTET STRING -- Operator Specific

FilteredCallTreatment ::= SEQUENCE {
 sFBillingChargingCharacteristics [0] SFBillingChargingCharacteristics,
 informationToSend [1] InformationToSend OPTIONAL,
 maximumNumberOfCounters [2] MaximumNumberOfCounters OPTIONAL,
 releaseCause [3] Cause OPTIONAL
}

-- If releaseCause is not present, the default value is the same as the ISUP cause value decimal 31.

-- If informationToSend is present, the call will be released after the end of the announcement with the
-- indicated or default releaseCause. If maximumNumberOfCounters is not present, ServiceFilteringResponse
-- will be sent with CountersValue ::= SEQUENCE SIZE (0) OF CounterAndValue

FilteringCharacteristics ::= CHOICE {
 interval [0] INTEGER (-1..32000),
 numberOfCalls [1] Integer4
}

-- Indicates the severity of the filtering and the point in time when the ServiceFilteringResponse is to be
-- sent. If = interval, every interval of time the next call leads to an InitialDP and a
-- ServiceFilteringResponse is sent to the SCF. The interval is specified in seconds. If = NumberOfCalls,
-- every N calls the Nth call leads to an InitialDP and a ServiceFilteringResponse is sent to the SCF. If
-- ActivateServiceFiltering implies several counters (filtering on several dialled numbers), the
-- numberOfCalls would include calls to all the dialled numbers.

FilteringCriteria ::= CHOICE {
 serviceKey [2] ServiceKey,
 addressAndService [30] SEQUENCE {
 calledAddressValue [0] Digits,
 serviceKey [1] ServiceKey,
 callingAddressValue [2] Digits OPTIONAL,
 }

```

        locationNumber    [3] LocationNumber OPTIONAL
    }
}

```

-- In case calledAddressValue is specified, the numbers to be filtered are from calledAddressValue up to
-- and including calledAddressValue +maximumNumberOfCounters-1. The last two digits of calledAddressValue
-- cannot exceed 100-maximumNumberOfCounters.

```

FilteringTimeOut ::= CHOICE {
    Duration        [0] Duration,
    StopTime        [1] DateAndTime
}

```

-- Indicates the maximum duration of the filtering. When the timer expires, a ServiceFilteringResponse is
-- sent to the SCF.

```

GapCriteria ::= CHOICE {
    calledAddressValue    [0] Digits,
    gapOnService          [2] GapOnService,
    calledAddressAndService [29] SEQUENCE {
        calledAddressValue [0] Digits,
        serviceKey          [1] ServiceKey
    }
    callingAddressAndService [30] SEQUENCE {
        callingAddressValue [0] Digits,
        serviceKey          [1] ServiceKey,
        locationNumber      [2] LocationNumber OPTIONAL
    }
}

```

-- Both calledAddressValue and callingAddressValue can be incomplete numbers, in the sense that a limited
-- amount of digits can be given. For the handling of numbers starting with the same digit string refer to
-- the detailed procedure of the CallGap operation in Clause 9.}

```

InbandInfo ::= SEQUENCE {
    messageID          [0] MessageID,
    numberOfRepetitions [1] INTEGER (1..127) OPTIONAL,
    duration           [2] INTEGER (0..32767) OPTIONAL,
    interval           [3] INTEGER (0..32767) OPTIONAL
}

```

-- interval is the time in seconds between each repeated announcement. Duration is the total amount of time
-- in seconds, including repetitions and intervals. The end of announcement is either the end of duration
-- or numberOfRepetitions, whatever comes first. Duration with value 0 indicates infinite duration.

```

InformationToSend ::= CHOICE {
    inbandinfo        [0] InbandInfo,
    tone              [1] Tone,
    displayInformation [2] DisplayInformation}

```

```

Integer4 ::= INTEGER (0..2147483647)

```



```

MessageID ::= CHOICE {
    elementaryMessageID [0] Integer4,
    text [1] SEQUENCE {
        messageContent [0] IA5String (SIZE(minMessageContentLength ..
            maxMessageContentLength)),
        attributes [1] OCTET STRING (SIZE (minAttributesLength ..
            maxAttributesLength)) OPTIONAL
    },
    elementaryMessageIDs [29] SEQUENCE SIZE (1..numOfMessageIDs) OF Integer4,
    variableMessage [30] SEQUENCE {
        elementaryMessageID [0] Integer4,
        variableParts [1] SEQUENCE SIZE(1..5) OF VariablePart
    }
}

END

```


ITU-T RECOMMENDATIONS SERIES

- Series A Organization of the work of the ITU-T
- Series B Means of expression: definitions, symbols, classification
- Series C General telecommunication statistics
- Series D General tariff principles
- Series E Overall network operation, telephone service, service operation and human factors
- Series F Non-telephone telecommunication services
- Series G Transmission systems and media, digital systems and networks
- Series H Audiovisual and multimedia systems
- Series I Integrated services digital network
- Series J Transmission of television, sound programme and other multimedia signals
- Series K Protection against interference
- Series L Construction, installation and protection of cables and other elements of outside plant
- Series M TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
- Series N Maintenance: international sound programme and television transmission circuits
- Series O Specifications of measuring equipment
- Series P Telephone transmission quality, telephone installations, local line networks
- Series Q Switching and signalling**
- Series R Telegraph transmission
- Series S Telegraph services terminal equipment
- Series T Terminals for telematic services
- Series U Telegraph switching
- Series V Data communication over the telephone network
- Series X Data networks and open system communications
- Series Y Global information infrastructure and Internet protocol aspects
- Series Z Languages and general software aspects for telecommunication systems