INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

# Q.751.4

(05/98)

SERIES Q: SWITCHING AND SIGNALLING

Specifications of Signalling System No. 7 – Signalling System No. 7 management

---

# Network element information model for SCCP accounting and accounting verification

ITU-T Recommendation Q.751.4

(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 |
| PUBLIC LAND MOBILE NETWORK | Q.1000–Q.1099 |
| INTERWORKING WITH SATELLITE MOBILE SYSTEMS | Q.1100–Q.1199 |
| INTELLIGENT NETWORK | Q.1200–Q.1999 |
| BROADBAND ISDN | Q.2000–Q.2999 |

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

# ITU-T RECOMMENDATION Q.751.4

## NETWORK ELEMENT INFORMATION MODEL FOR SCCP ACCOUNTING AND ACCOUNTING VERIFICATION


## Summary

Measurements for SCCP accounting and accounting verification have been defined in Recommendation Q.752. The network element infoirmation model – based on Recommendations X.742 and Q.751.2 – for these measurements is contained in this Recommendation.



## Source

ITU-T Recommendation Q.751.4 was prepared by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 15th of May 1998.

## Keywords

Accounting, Measurements, network element information model, object model, OMAP, SCCP, TMN, Verification.

## 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 No. 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.

# CONTENTS

**Recommendation Q.751.4**

# NETWORK ELEMENT INFORMATION MODEL FOR SCCP ACCOUNTING AND ACCOUNTING VERIFICATION

*(Geneva, 1998)*

## 1 Scope

This Recommendation contains the network element information model which is necessary to manage network elements for accounting and accounting verification of SS7 SCCP traffic according to Recommendation Q.752. The model is based on the models defined in Recommendations Q.751.2 and X.742. SCCP Accounting options which are marked "f.f.s." in Recommendation Q.752 are not included.

## 2 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 I.751 (1996), *Asynchronous transfer mode management of the network element view*.

– ITU-T Recommendation M.3100 (1995), *Generic network information model*.

– ITU-T Recommendation Q.750 (1997), *Overview of Signalling System No. 7 management*.

– ITU-T Recommendation Q.751.1 (1995), *Network element management information model for the Message Transfer Part*.

– ITU-T Recommendation Q.751.2 (1997), *Network element management information model for the Signalling Connection Control Part*.

– ITU-T Recommendation Q.751.3 (1997), *Network element information model for MTP accounting*.

– CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1)*.

– ITU-T Recommendation X.680 (1997) | ISO/IEC 8824-1:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*.

– ITU-T Recommendation X.711 (1997) | ISO/IEC 9596-1:1998, *Information technology – Open Systems Interconnection –Common Management Information Protocol: Specification*.

– CCITT Recommendation X.720 (1992) | ISO/IEC 10165-1:1993, *Information technology – Open Systems Interconnection – Structure of management information: Management information model*.

– CCITT Recommendation X.721 (1992) | ISO/IEC 10165-2:1992, *Information technology – Open Systems Interconnection – Structure of management information: Definition of management information*.

– CCITT Recommendation X.722 (1992) | ISO/IEC 10165-4:1992, *Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of managed objects*.

– ITU-T Recommendation X.722/Amd.1 (1995) | ISO/IEC 10165-4/Amd.1:1996, *Set by create and components registration.*

– ITU-T Recommendation X.723 (1993) | ISO/IEC 10165-5:1994, *Information technology – Open Systems Interconnection – Structure of management information: Generic management information*.

– CCITT Recommendation X.731 (1992) | ISO/IEC 10164-2:1992, *Information technology – Open Systems Interconnection – State management function*.

– CCITT Recommendation X.733 (1992) | ISO/IEC 10164-4:1992, *Information technology – Open Systems Interconnection – Systems management: Alarm reporting function*.

– ITU-T Recommendation X.742 (1995) | ISO/IEC 10164-10:1995, *Information technology – Open Systems Interconnection – Systems management: Usage metering function for accounting purposes*.

## 3 Terms and definitions

For the purpose of this Recommendation, the following definitions apply.

This Recommendation makes use of the following terms defined in Recommendation M.3010:

a) performance management;

b) configuration management;

c) fault management;

d) Telecommunications Management Network (TMN).

This Recommendation makes use of the following term defined in Recommendation X.700:

– object instance.

This Recommendation makes use of the following terms defined in Recommendation X.701:

a) managed object class;

b) management information;

c) notification.

This Recommendation makes use of the following term defined in Recommendation X.710:

– attribute.

This Recommendation makes use of the following terms defined in Recommendation X.720:

a) inheritance;

b) name binding;

c) package;

d) parameter;

e) action;

f) actual class;

g) attribute group;

h) behaviour;

i) conditional package;

j) instantiation;

k) superclass.

This Recommendation makes use of the following terms defined in ITU-T Rec. X.701 | ISO/IEC 10040:

a) managed object class;

b) notification.

## 4 Abbreviations

This Recommendation uses the following abbreviations:

| | |
|---|---|
| ASN.1 | Abstract Syntax Notation One |
| ERD | Entity Relationship Diagram |
| GDMO | Guidelines for the Definition of Managed Objects |
| max | Maximum |
| MO | Managed Object |

MOC Managed Object Class

MSU Message Signal Unit

MTP Message Transfer Part

NE Network Element

OMAP Operations, Maintenance and Administration Part

# 5 Conventions

The Guidelines for the Definition of Managed Objects (GDMO), defined in Recommendation X.722, are used. In case of differences between the formal part (clause 7) and the informal parts of this Recommendation, the formal part is to be regarded as leading.

If there are inconsistencies between the informal description, the formal definitions or conformance statements proformas, the formal definitions shall prevail.

Throughout this Recommendation, the wording "The managed object class x ..." refers to a particular managed object class while the wording "An x ..." refers to an instance of the managed object class "x".

Modelling of redundancy is avoided (e.g. relationships between managed objects are described in one MOC only; information which is obtainable via referenced instances of other information models are not repeated here). However, for some implementations, it may be useful or necessary to add some additional information to some managed object classes.

# 6 Informal description of managed object classes

This clause gives informal descriptions of the object model for SS7 SCCP accounting and accounting verification.

## 6.1 Reused Managed Objects

The following Table 1 gives an overview of all the Q.751.1, Q.751.2 and Q.751.3 object classes which are referenced by object classes of this information model.

**Table 1/Q.751.4 – Reuse of Q.751.1, Q.751.2 and Q.751.3**

| Referenced object class | Q.751.1/ Q.751.2/ Q.751.3 |
|---|---|
| managedSwitchingElement | Q.751.1 |
| sccp | Q.751.2 |
| scrc | Q.751.2 |
| sccpLinkage | Q.751.2 |
| gtTranslator | Q.751.2 |
| gtRule | Q.751.2 |
| ss7AccountingAndVerificationControl | Q.751.3 |

## 6.2 Relation Notification/LogRecord/File

See Recommendation Q.751.3

## 6.3 Diagrams

### 6.3.1 Inheritance diagram

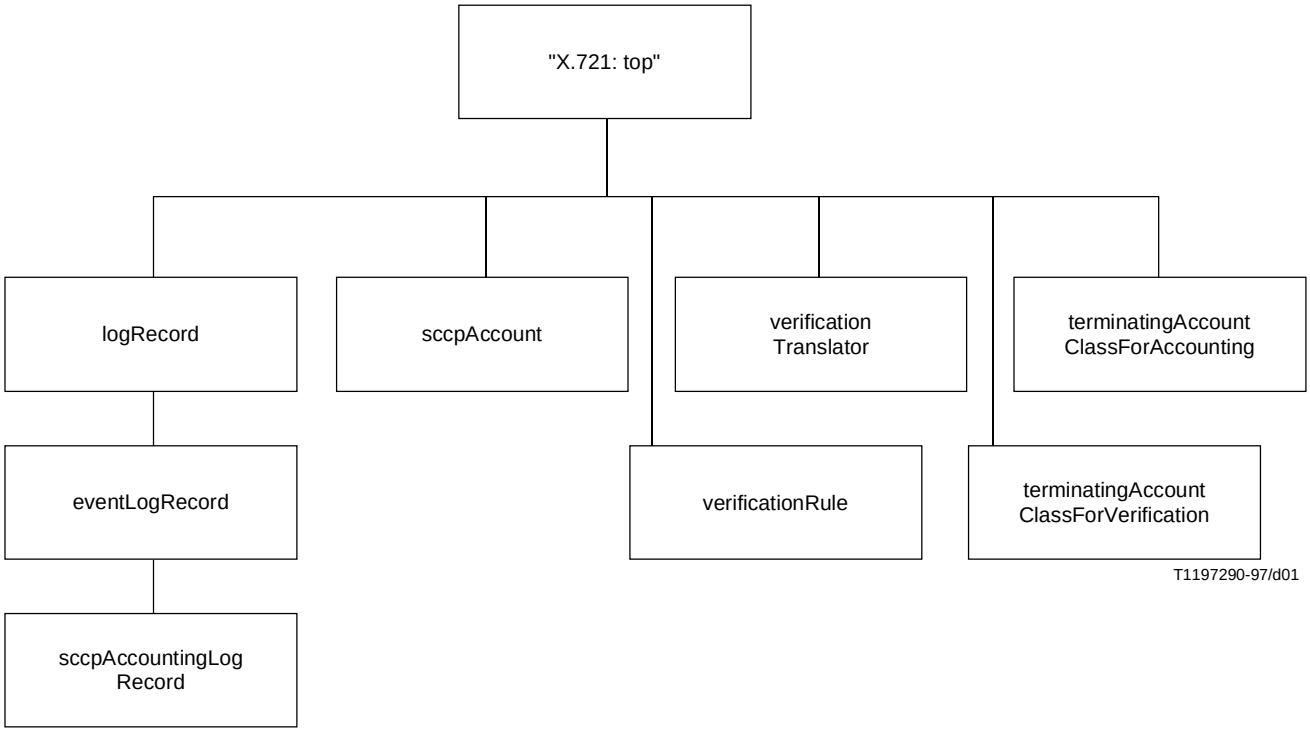


**Figure 1/Q.751.4 – Inheritance diagram**

### 6.3.2 ER-Diagram for SCCP accounting and verification

**Explanation of arrows in the ERD**

Containment (full line):

– Double arrows at the subordinate object class signify that several instances of it can be contained in one instance of the superior object class.

Relation (dashed line):

– A single arrow at the "targeted" object means that the "pointing" object references exactly one instance of the "target" object.

– Double arrows at the "targeted" object mean that the "pointing" object can reference several instances of the "target" object. A single arrow at the "pointing" object means that the "targeted" object is referenced by exactly one instance of the "pointing" object.

– Double arrows at the "pointing" object mean that the "targeted" object can be referenced by several instances of the "pointing" object.

NOTE – SCCP Accounting options (selection based on SSN or SCCP Protocol Class) which are marked "f.f.s." in Recommendation Q.752 are not included. Extension for these options could be modelled as follows: Object classes defining the registration items must be defined, if it is not already existing in Recommendation Q.751.2. The attributes selectionGroupSetForAccounting and selectionGroupSetForVerification then point optionally to the corresponding object class. The attribute type for these attributes has to be extended for an additional optional pointer to the corresponding object class.

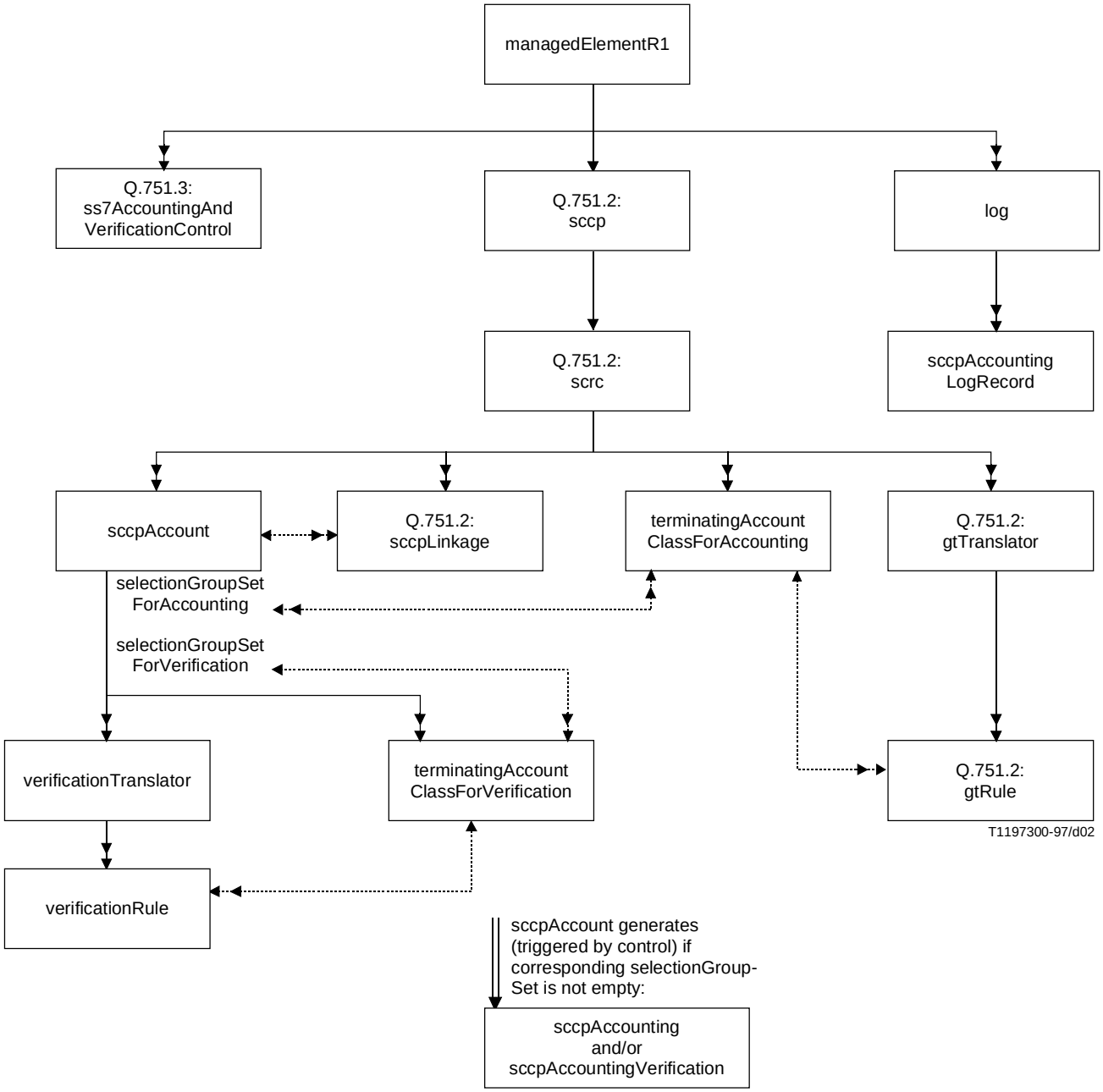


**Figure 2/Q.751.4 – ER-Diagram for SCCP accounting and verification**

## 6.4 Textual description

The information model presented in Figure 1 contains four SCCP accounting and accounting verification specific objects:

*sccpAccount, verificationTranslator, verificationRule, terminatingAccountClassForAccounting and terminatingAccountClassForVerification (ss7AccountingAndVerificationControl)*

is common for MTP and SCCP Accounting and Accounting Verification and is defined in Recommendation Q.751.3).

An ***sccpAccount*** represents a set of remote sccp nodes (represented by sccpLinkages) belonging to one operator for which accounting/accounting verification may be done collectively. For each sccpAccount, the accountable traffic may be recorded into different counters according to certain selection criteria that are different for accounting/accounting verification. The counters are represented by a set of references to *terminatingAccountClass (ForAccounting/Verification)* instances.

A ***terminatingAccountClassForAccounting*** contained in scrc groups a number of *gtRules* for which the same tariff applies for accounting purposes. A reference to an instance of this class in *sccpAccount* represents an accounting counter with a specific tariff valid for the affected operator.

– This containment in scrc means that the grouping that applies for accounting is identical for all remote operators SCCP Accounting bills are sent to. Prices associated with the accountclasses are however not restricted by this rule.

– The fact that the groupings apply for all sccpAccounts also means that the *gtRules* belong to only one *terminatingAccountClassForAccounting.* Otherwise, a unique selection of a tariff/counter would not be possible.

A ***terminatingAccountClassForVerification*** contained in an sccpAccount groups a number of *verificationRules* for which the same tariff applies for accounting verification purposes. A reference to an instance of this class in *sccpAccount* represents a verification counter with a specific tariff valid for the affected operator.

– This containment in *sccpAccount* means that the grouping only applies for the operator specified by the *sccpAccount*. The *verificationRules* belonging to this tariff (*terminatingAccountClassForVerification*) shall also belong to this operator, i.e. the superior *verificationTranslator* shall be contained in the same *sccpAccount.*

– Within the scope of an *sccpAccount*, the *verificationTranslators* also belong to only one *terminatingAccountClassForVerification.*

A *gtTranslator* is used during the global title translation process for routing purposes. The ***verificationTranslator*** has the same purpose during the global title analysis process for accounting verification purposes. For each *sccpAccount*, a set of *verificationTranslator* are to be defined.

A *gtRule* is used during the global title translation process for routing purposes. The ***verificationRule*** has the same purpose during the global title analysis process for accounting verification purposes. For each *sccpAccount*, a set of *verificationRules* are to be defined. These rules are assigned to a *terminatingAccountClassForVerification* representing a verification counter for the affected operator.

## 6.5 Tables

In these tables, (I), (M) and (C) are used with the following meaning:

(I) This element is inherited from a superclass.

(M) This element is mandatory.

(Cn) Conditional, n specifies the number of the condition; explanation of it below the tables.

(O) Optional (condition "if the instance supports it" or similar).

This signification is only done at the package level.

The possible operations on objects and attributes are specified by:

(Cr) CREATE

(WrOI) WITH REFERENCE OBJECT INSTANCE

(Del) DELETE

(oinco) ONLY-IF-NO-CONTAINED-OBJECTS

(G) GET

(SBC) SET BY CREATE

(R) REPLACE

(A-Rm) ADD-REMOVE

(d) DEFAULT VALUE is defined for the attribute

(dr) DEFAULT VALUE DERIVATION RULE is defined for the attributes

### 6.5.1 Managed Objects classes common for SS7 accounting

For the explanations of the object class and the attributes defined in this Recommendation, see their behaviour descriptions in the formal definition section.

For objectClass ss7AccountingAndVerificationControl, see Recommendation Q.751.3.

### 6.5.2 Managed Objects Classes for SCCP accounting

#### 6.5.2.1 sccpAccount

**Table 2/Q.751.4 – sccpAccount**

| **sccpAccount (Cr, Del oinco)** | | |
|---|---|---|
| **Attributes** | **Notifications** | **Actions** |
| **sccpAccountPackage (M)** | | |
| sccpAccountId (G, SBC) | | |
| sccpLinkageSet (G, SBC, A-Rm) | | |
| operatorName (G, SBC) | | |
| selectionGroupSetForAccounting (G, R, A-Rm, i) | | |
| selectionGroupSetForVerification (G, R, A-Rm, i) | | |
| **"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage (M)** | | |
| | "ITU-T Rec. X.721 (1992)":attributeValueChange | |
| | "ITU-T Rec. X.721 (1992)":objectCreation | |
| | "ITU-T Rec. X.721 (1992)":objectDeletion | |
| **"ITU-T Rec. Q.751.3 (1997)":controlPointerPackage (O)** | | |
| "ITU-T Rec. Q.751.3 (1997)":controlPointer (G, SBC) | | |
| **"ITU-T Rec. Q.751.3 (1997)":measurementControlStatusPackage (O)** | | |
| "ITU-T Rec. Q.751.3 (1997)": measurementControlStatus (G, SBC) | | |
| **sccpAccountingNotificationsPackage (O)** | | |
| | sccpAccounting | |
| | sccpAccountingVerification | |
| **"ITU-T Rec. X.721 (1992)":topPackage (M,I)** | | |
| objectClass (G) | | |
| nameBinding (G) | | |
| **"ITU-T Rec. X.721 (1992)":packagesPackage (C1,I)** | | |
| packages (G) | | |
| **"ITU-T Rec. X.721 (1992)":allomorphicPackage (C2,I)** | | |
| allomorphs (G) | | |
| C1 Present if any registered package has been instantiated.<br>C2 Present if allomorphism is supported. | | |

#### 6.5.2.2 sccpAccountingLogRecord

This non-instantiable object class is defined to formally supply the possibility to write the sccpAccounting and/or sccpAccountingVerification notifications into a log.

#### 6.5.2.3 terminatingAccountClassForAccounting

**Table 3/Q.751.4 – terminatingAccountClassForAccounting**

| terminatingAccountClassForAccounting (Cr WrOI, Del) | | |
|---|---|---|
| **Attributes** | **Notifications** | **Actions** |
| **terminatingAccountClassForAccountingPackage (M)** | | |
| terminatingAccountClassForAccountingId (G, SBC) | | |
| ruleSet (G, SBC, A-Rm) | | |
| **"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage (M)** | | |
| | "ITU-T Rec. X.721 (1992)":attributeValueChange | |
| | "ITU-T Rec. X.721 (1992)":objectCreation | |
| | "ITU-T Rec. X.721 (1992)":objectDeletion | |
| **"ITU-T Rec. X.721 (1992)":topPackage (M,I)** | | |
| objectClass (G) | | |
| nameBinding (G) | | |
| **"ITU-T Rec. X.721 (1992)":packagesPackage (C1,I)** | | |
| packages (G) | | |
| **"ITU-T Rec. X.721 (1992)":allomorphicPackage (C2,I)** | | |
| allomorphs (G) | | |
| C1 Present if any registered package has been instantiated. | | |
| C2 Present if allomorphism is supported. | | |

#### 6.5.2.4 terminatingAccountClassForVerification

**Table 4/Q.751.4 – terminatingAccountClassForVerification**

| terminatingAccountClassForVerification (Cr WrOI, Del) | | |
|---|---|---|
| **Attributes** | **Notifications** | **Actions** |
| **terminatingAccountClassForVerificationPackage (M)** | | |
| terminatingAccountClassForVerificationId (G, SBC) | | |
| ruleSet (G, SBC, A-Rm) | | |
| **"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage (M)** | | |
| | "ITU-T Rec. X.721 (1992)":attributeValueChange | |
| | "ITU-T Rec. X.721 (1992)":objectCreation | |
| | "ITU-T Rec. X.721 (1992)":objectDeletion | |
| **"ITU-T Rec. X.721 (1992)":topPackage (M,I)** | | |
| objectClass (G) | | |
| nameBinding (G) | | |
| **"ITU-T Rec. X.721 (1992)":packagesPackage (C1,I)** | | |
| packages (G) | | |
| **"ITU-T Rec. X.721 (1992)":allomorphicPackage (C2,I)** | | |
| allomorphs (G) | | |
| C1 Present if any registered package has been instantiated. | | |
| C2 Present if allomorphism is supported. | | |

### 6.5.2.5 verificationRule

**Table 5/Q.751.4 – verificationRule**

| verificationRule (Cr WrOI, Del) | | |
|---|---|---|
| **Attributes** | **Notifications** | **Actions** |
| **verificationRulePackage (M)** | | |
| verificationRuleId (G, SBC) | | |
| ITU-T Rec. Q.751.2 (1997):gtAddressInformation (G, R) | | |
| ITU-T Rec. Q.751.2 (1997):gtEncodingScheme (G, SBC) | | |
| **"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage (M)** | | |
| | "ITU-T Rec. X.721 (1992)":attributeValueChange | |
| | "ITU-T Rec. X.721 (1992)":objectCreation | |
| | "ITU-T Rec. X.721 (1992)":objectDeletion | |
| **"ITU-T Rec. X.721 (1992)":topPackage (M,I)** | | |
| objectClass (G) | | |
| nameBinding (G) | | |
| **"ITU-T Rec. X.721 (1992)":packagesPackage (C1,I)** | | |
| packages (G) | | |
| **"ITU-T Rec. X.721 (1992)":allomorphicPackage (C2,I)** | | |
| allomorphs (G) | | |
| C1 Present if any registered package has been instantiated. | | |
| C2 Present if allomorphism is supported. | | |

### 6.5.2.6 verificationTranslator

**Table 6/Q.751.4 – verificationTranslator**

| verificationTranslator (Cr WrOI, Del) | | |
|---|---|---|
| **Attributes** | **Notifications** | **Actions** |
| **verificationTranslatorPackage (M)** | | |
| verificationTranslatorId (G, SBC) | | |
| ITU-T Rec. Q.751.2 (1997):gtIndicator (G, SBC) | | |
| gtNatureOfAddressSet (G, R, A-Rm) | | |
| gtNumberingPlanSet (G, R, A-Rm) | | |
| gtTranslationTypeSet (G, R, A-Rm) | | |
| **"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage (M)** | | |
| | "ITU-T Rec. X.721 (1992)":attributeValueChange | |
| | "ITU-T Rec. X.721 (1992)":objectCreation | |
| | "ITU-T Rec. X.721 (1992)":objectDeletion | |
| **"ITU-T Rec. X.721 (1992)":topPackage (M,I)** | | |
| objectClass (G) | | |
| nameBinding (G) | | |
| **"ITU-T Rec. X.721 (1992)":packagesPackage (C1,I)** | | |
| packages (G) | | |
| **"ITU-T Rec. X.721 (1992)":allomorphicPackage (C2,I)** | | |
| allomorphs (G) | | |
| C1 Present if any registered package has been instantiated. | | |
| C2 Present if allomorphism is supported. | | |

# 7 Formal definitions

## 7.1 Formal definitions common for SS7 accounting

These definitions are defined in Recommendation Q.751.3 and are reused.

## 7.2 Formal definitions for SCCP accounting

### 7.2.1 Managed Object Class Definitions

**sccpAccount MANAGED OBJECT CLASS**
**DERIVED FROM "ITU-T Rec. X.721 (1992) | ISO/IEC 10165-2:1992":top;**
**CHARACTERIZED BY**
**"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage,**
**sccpAccountPackage ;**
**CONDITIONAL PACKAGES**
**"ITU-T Rec. Q.751.3 (1997)":controlPointerPackage PRESENT IF "the instance supports it",**
**"ITU-T Rec. Q.751.3 (1997)":measurementControlStatusPackage PRESENT IF "the instance supports it",**
**sccpAccountingNotificationsPackage PRESENT IF "the instance supports it";**
**REGISTERED AS {sccpAccount-OOi};**

**sccpAccountingLogRecord MANAGED OBJECT CLASS**
**DERIVED FROM "ITU-T Rec. X.735 (1991)":eventLogRecord;**
**CHARACTERIZED BY**
**sccpAccountingLogRecordPackage;**
**REGISTERED AS {sccpAccountingLogRecord-OOi};**

**terminatingAccountClassForAccounting MANAGED OBJECT CLASS**
**DERIVED FROM "ITU-T Rec. X.721 (1992) | ISO/IEC 10165-2:1992":top;**
**CHARACTERIZED BY**
**terminatingAccountClassForAccountingPackage,**
**"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage ;**
**REGISTERED AS {terminatingAccountClassForAccounting-OOi};**

**terminatingAccountClassForVerification MANAGED OBJECT CLASS**
**DERIVED FROM "ITU-T Rec. X.721 (1992) | ISO/IEC 10165-2:1992":top;**
**CHARACTERIZED BY**
**terminatingAccountClassForVerificationPackage,**
**"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage ;**
**REGISTERED AS {terminatingAccountClassForVerification-OOi};**

**verificationRule MANAGED OBJECT CLASS**
**DERIVED FROM "ITU-T Rec. X.721 (1992) | ISO/IEC 10165-2:1992":top;**
**CHARACTERIZED BY**
**verificationRulePackage,**
**"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage ;**
**REGISTERED AS {verificationRule-OOi};**

**verificationTranslator MANAGED OBJECT CLASS**
**DERIVED FROM "ITU-T Rec. X.721 (1992) | ISO/IEC 10165-2:1992":top;**
**CHARACTERIZED BY**
**verificationTranslatorPackage,**
**"ITU-T Rec. M.3100 (1995)":objectManagementNotificationsPackage ;**
**REGISTERED AS {verificationRule-OOi};**

### 7.2.2 Package definitions

**sccpAccountPackage PACKAGE**
**BEHAVIOUR sccpAccountPackageBehaviour BEHAVIOUR DEFINED AS**
**"The sccpAccount managed object allows by means of the attribute sccpLinkageSet to define a set (at least one) of remote nodes for which SCCP accounting/verification can be done collectively, because they are belonging to the same operator. All sccpLinkageSets defined by sccpAccounts shall be disjunct.**

**The selectionGroupSetForAccounting refers to terminatingAccountClassForAccounting instances contained in scrc, i.e. the accounting is independent of the operator (Other selection items for SCCP accounting are for further study). The selectionGroupSetForVerification refers to terminatingAccountClassForVerification instances contained in the same sccpAccount that the selectionGroupSetForVerification attribute belongs to, i.e. the verification is operator dependent. Each selectionGroup entry shall be unique in these attributes. For each selectionGroup it is counted separately. Each counter information contains the number of GTs, the number of octets, an eventual data problem and the selectionGroup for which was counted. The counters are not readable but only available in the notification data.**

**If all counters for verification or accounting should still be zero at the end of the measurement, the corresponding notification should be generated regardless of that in order to provide a measure against notification loss.**

**Two different notifications, one for accounting, one for accounting verification containing the measurement results might be generated by this one object. If a selectionGroupSet is empty, then this means, that accounting resp. verification is not performed for the adjacent operator. In this case there is no notification for accounting resp. verification.**

**The following rules apply for set requests on the sccpLinkageSet, selectionGroupSetForAccounting and selectionGroupSetForVerification attributes: The addressed sccpLinkages in the sccpLinkageSet attribute may only appear in one sccpAccount. The selectionGroups in the selectionGroupSetForVerification shall refer to terminatingAccountClassForVerification instances contained in this sccpAccount instance. The selectionGroups in the selectionGroupSetForAccounting shall refer to terminatingAccountClass instancesForAccounting.";;**

**ATTRIBUTES**

**sccpAccountId GET SET-BY-CREATE,**

**sccpLinkageSet GET SET-BY-CREATE ADD-REMOVE,**

**operatorName GET SET-BY-CREATE,**

**selectionGroupSetForAccounting INITIAL VALUE selectionGroupSetInitial GET REPLACE,**

**selectionGroupSetForVerification INITIAL VALUE selectionGroupSetInitial GET REPLACE;**

**REGISTERED AS {sccpAccountPackage-POi};**

**sccpAccountingLogRecordPackage PACKAGE**

**BEHAVIOUR sccpAccountingLogRecordPackageBehaviour BEHAVIOUR DEFINED AS**

**"The sccpAccountingLogRecord managed object is used to represent logged information that resulted from the sccpAccounting or sccpAccountingVerification notifications.";;**

**ATTRIBUTES**

**endOfMeasurementTime GET,**

**sccpLinkageSet GET,**

**sccpAccCounterDataSequence GET;**

**REGISTERED AS {sccpAccountingLogRecordPackage-POi};**

**sccpAccountingNotificationsPackage PACKAGE**

**BEHAVIOUR sccpAccountingNotificationsPackageBehaviour BEHAVIOUR DEFINED AS**

**"The sccpAccountingLogRecord managed object is used to represent logged information that resulted from the sccpAccounting or sccpAccountingVerification notifications.";;**

**NOTIFICATIONS**

**sccpAccounting,**

**sccpAccountingVerification;**

**REGISTERED AS {sccpAccountingNotificationsPackage-POi};**

**terminatingAccountClassForAccountingPackage PACKAGE**

**BEHAVIOUR terminatingAccountClassForAccountingBehaviour BEHAVIOUR DEFINED AS**

**"The terminatingAccountClassForAccounting instances contain a set of gtRules with the same tariff. The terminating account class for accounting is identified by the terminatingAccountClassForAccountingId. An instance of this class represents the destination information item involved in accounting.**

**The following restrictions apply for set requests on the ruleSet attribute: A rule may be contained in only one ruleSet within the scope of the superior scrc.";;**

**ATTRIBUTES**

**terminatingAccountClassForAccountingId GET SET-BY-CREATE,**

**ruleSet GET SET-BY-CREATE ADD-REMOVE;**

**REGISTERED AS {terminatingAccountClassForAccountingPackage-POi};**

**terminatingAccountClassForVerificationPackage PACKAGE**

**BEHAVIOUR terminatingAccountClassForVerificationBehaviour BEHAVIOUR DEFINED AS**

**"The terminatingAccountClassForVerification instances contain a set of verificationRules with the same tariff. The terminating account class for verification is identified by the terminatingAccountClassForAccountingId. An instance of this class represents the destination information item involved in accounting verification.**

**The following restrictions apply for set requests on the ruleSet attribute: A rule may be contained in only one ruleSet within the scope of a superior sccpAccount.";;**

**ATTRIBUTES**
**terminatingAccountClassForVerificationId GET SET-BY-CREATE,**
**ruleSet GET SET-BY-CREATE ADD-REMOVE;**
**REGISTERED AS {terminatingAccountClassForVerificationPackage-POi};**

**verificationRulePackage PACKAGE**
**BEHAVIOUR verificationRuleBehaviour BEHAVIOUR DEFINED AS**
**"The verificationRules are selected during the translation of outgoing global titles for accounting verification purposes. As the translation mechanism is the same as the translation for routing purposes, the same selection attributes are applicable: gtAddressInformation and possibly the encodingScheme. If there is no matching verificationRule found, no terminatingAccountClassForVerification can be selected. In this case, no accounting verification counter is to be incremented.";;**
**ATTRIBUTES**
**verificationRuleId GET SET-BY-CREATE,**
**ITU-T Rec. Q.751.2 (1997):gtAddressInformation GET-REPLACE,**
**ITU-T Rec. Q.751.2 (1997):gtEncodingScheme GET SET-BY-CREATE;**
**REGISTERED AS {verificationRulePackage-POi};**

**verificationTranslatorPackage PACKAGE**
**BEHAVIOUR verificationTranslatorBehaviour BEHAVIOUR DEFINED AS**
**"The verificationTranslators are selected during the translation of outgoing global titles for accounting verification purposes. As the translation mechanism is the same as the translation for routing purposes, the same selection attributes are applicable: gtIndicator, gtNatureOfAddress, gtNumberingPlan and gtTranslationType. No single-valued address attributes are choosen however. This is to avoid that identical sets of verificationRule-sets have to be created in case of identical routing for a set of address parameter values. A verification translator, if selected, specifies a set of contained verificationRules that apply for a certain outgoing global title.";;**
**ATTRIBUTES**
**verificationTranslatorId GET SET-BY-CREATE,**
**ITU-T Rec. Q.751.2 (1997):gtIndicator GET SET-BY-CREATE,**
**gtNatureOfAddressSet GET-REPLACE ADD-REMOVE,**
**gtNumberingPlanSet GET-REPLACE ADD-REMOVE,**
**gtTranslationTypeSet GET-REPLACE ADD-REMOVE;**
**REGISTERED AS {verificationTranslatorPackage-POi};**

### 7.2.3 Attribute definitions

**ruleSet ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.RuleSet;**
**MATCHES FOR EQUALITY,SET-COMPARISON,SET-INTERSECTION;**
**BEHAVIOUR gtRuleSetBehaviour BEHAVIOUR DEFINED AS**
**"The ruleSet attribute refers to a set (at least one) of gtRules or verificationRules, all belonging to the same terminating account class.**
**A set request is rejected if**
**a rule would be referenced which is already referenced by another terminatingAccountClass(ForAccounting/Verification) contained in the same superior object class instance.";;**
**REGISTERED AS {ruleSet-AOi};**

**sccpAccountId ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.SimpleNameType;**
**MATCHES FOR EQUALITY;**
**BEHAVIOUR sccpAccountIdBehaviour BEHAVIOUR DEFINED AS**
**"The sccpAccountId is the naming attribute of the sccpAccount managed object.";;**
**REGISTERED AS {sccpAccountId-AOi};**

**sccpLinkageSet ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.SccpLinkageSet;**
**MATCHES FOR EQUALITY,SET-COMPARISON,SET-INTERSECTION;**
**BEHAVIOUR sccpLinkageSetBehaviour BEHAVIOUR DEFINED AS**
**"The sccpLinkageSet refers to a set (at least one) of sccpLinkages, identifying an operator.";;**
**REGISTERED AS {sccpLinkageSet-AOi};**

**terminatingAccountClassForAccountingId ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.SimpleNameType;**
**MATCHES FOR EQUALITY;**
**BEHAVIOUR terminatingAccountClassForAccountingIdBehaviour BEHAVIOUR DEFINED AS**
**"The terminatingAccountClassForAccountingId is the naming attribute of the terminatingAccountClassForAccounting managed object. ";;**
**REGISTERED AS {terminatingAccountClassForAccountingId-AOi};**

**terminatingAccountClassForVerificationId ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.SimpleNameType;**
**MATCHES FOR EQUALITY;**
**BEHAVIOUR terminatingAccountClassForVerificationIdBehaviour BEHAVIOUR DEFINED AS**
**"The terminatingAccountClassForVerificationId is the naming attribute of the terminatingAccountClassForVerification managed object. ";;**
**REGISTERED AS {terminatingAccountClassForVerificationId-AOi};**

**verificationTranslatorId ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.SimpleNameType;**
**MATCHES FOR EQUALITY;**
**BEHAVIOUR verificationTranslatorIdBehaviour BEHAVIOUR DEFINED AS**
**"The verificationTranslatorId is the naming attribute of the verificationTranslator managed object.";;**
**REGISTERED AS {verificationTranslatorId-AOi};**

**verificationRuleId ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.SimpleNameType;**
**MATCHES FOR EQUALITY;**
**BEHAVIOUR verificationRuleIdBehaviour BEHAVIOUR DEFINED AS**
**"The verificationRuleId is the naming attribute of the verificationRule managed object.";;**
**REGISTERED AS {verificationRuleId-AOi};**

**gtNatureOfAddressSet ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.GtNatureOfAddressSet;**
**MATCHES FOR EQUALITY,SET-COMPARISON,SET-INTERSECTION;**
**BEHAVIOUR gtNatureOfAddressSetBehaviour BEHAVIOUR DEFINED AS**
**"The gtNatureOfAddressSet attribute defines a set of gtNatureOfAddress values.";;**
**REGISTERED AS {gtNatureOfAddressSet-AOi}**

**gtNumberingPlanSet ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.GtNumberingPlanSet;**
**MATCHES FOR EQUALITY,SET-COMPARISON,SET-INTERSECTION;**
**BEHAVIOUR gtNumberingPlanSetBehaviour BEHAVIOUR DEFINED AS**
**"The gtNumberingPlanSet attribute defines a set of gtNumberingPlan values.";;**
**REGISTERED AS {gtNumberingPlanSet-AOi}**

**gtTranslationTypeSet ATTRIBUTE**
**WITH ATTRIBUTE SYNTAX SccpAccountingDefinedTypesModule.GtTranslationTypeSet;**
**MATCHES FOR EQUALITY,SET-COMPARISON,SET-INTERSECTION;**
**BEHAVIOUR gtTranslationTypeSetBehaviour BEHAVIOUR DEFINED AS**
**"The gtTranslationTypeSet attribute defines a set of gtTranslationType values.";;**
**REGISTERED AS {gtTranslationType-AOi}**

### 7.2.4 Name binding definitions

**sccpAccount-scrc NAME BINDING**
**SUBORDINATE OBJECT CLASS sccpAccount AND SUBCLASSES;**
**NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. Q.751.2 (1996)":scrc AND SUBCLASSES;**
**WITH ATTRIBUTE sccpAccountId;**
**BEHAVIOUR sccpAccount-scrcBehaviour BEHAVIOUR DEFINED AS**
**"This name binding is used when the sccpAccount instance is created by management operations.**
**A create request is rejected if**
**at least one of the instances which would be referenced by the attribute sccpLinkageSet is not existing**
**OR**
**at least one of the instances which would be referenced by the attributes selectionGroupSetForAccounting or selectionGroupSetForVerification is not existing.";;**
**CREATE;**
**DELETE ONLY-IF-NO-CONTAINED-OBJECTS;**
**REGISTERED AS {sccpAccount-scrc-NBOI};**

**terminatingAccountClassForAccounting-scrc NAME BINDING**
**SUBORDINATE OBJECT CLASS terminatingAccountClassForAccounting AND SUBCLASSES;**
**NAMED BY SUPERIOR OBJECT CLASS "ITU-T Rec. Q.751.2 (1996)":scrc AND SUBCLASSES;**
**WITH ATTRIBUTE terminatingAccountClassForAccountingId;**
**BEHAVIOUR terminatingAccountClassForAccounting-scrcBehaviour BEHAVIOUR DEFINED AS**
**"This name binding is used when a terminatingAccountClassForAccounting instance for SCCP accounting is created by management operations.**
**A create request is rejected if**
**a gtRule would be referenced via the attribute ruleSet which is already referenced by another terminatingAccountClassForAccounting contained in the same superior object class instance.**

**A delete request is rejected if**
**the instance is still referenced by an instance of object class sccpAccount via attribute selectionGroupSetForAccounting.";;**
**CREATE WITH REFERENCE OBJECT INSTANCE;**
**DELETE;**
**REGISTERED AS {terminatingAccountClassForAccounting-scrc-NBOI};**

**terminatingAccountClassForVerification-sccpAccount NAME BINDING**
**SUBORDINATE OBJECT CLASS terminatingAccountClassForVerification AND SUBCLASSES;**
**NAMED BY SUPERIOR OBJECT CLASS sccpAccount AND SUBCLASSES;**
**WITH ATTRIBUTE terminatingAccountClassForVerificationId;**
**BEHAVIOUR terminatingAccountClassForVerification-sccpAccountBehaviour BEHAVIOUR DEFINED AS**
**"This name binding is used when a terminatingAccountClassForVerification instance for SCCP accounting verification is created by management operations.**
**A create request is rejected if**
**a verificationRule would be referenced via the attribute ruleSet which is already referenced by another terminatingAccountClassForVerification contained in the same superior object class instance,**
**or if**
**a verificationRule would be referenced via the attribute ruleSet which is contained in another sccpAccount instance than the terminatingAccountClassForVerification**
**A delete request is rejected if**
**the instance is still referenced by an instance of object class sccpAccount via attribute selectionGroupSetForVerification.";;**
**CREATE WITH REFERENCE OBJECT INSTANCE;**
**DELETE;**
**REGISTERED AS {terminatingAccountClassForVerification-sccpAccount-NBOI};**

**verificationTranslator-sccpAccount NAME BINDING**
**SUBORDINATE OBJECT CLASS verificationTranslator AND SUBCLASSES;**
**NAMED BY SUPERIOR OBJECT CLASS sccpAccount AND SUBCLASSES;**
**WITH ATTRIBUTE verificationTranslatorId;**
**BEHAVIOUR verificationTranslator-sccpAccount-Bhv BEHAVIOUR DEFINED AS**
**"This name binding is used when a verificationTranslator instance for SCCP accounting is created by management operations.";;**
**CREATE WITH REFERENCE OBJECT INSTANCE;**
**DELETE ONLY-IF-NO-CONTAINED-OBJECTS;**
**REGISTERED AS {verificationTranslator-sccpAccount-NBOI};**

**verificationRule-verificationTranslator NAME BINDING**
**SUBORDINATE OBJECT CLASS verificationRule AND SUBCLASSES;**
**NAMED BY SUPERIOR OBJECT CLASS verificationTranslator AND SUBCLASSES;**
**WITH ATTRIBUTE verificationRuleId;**
**BEHAVIOUR verificationRule-verificationTranslator-Bhv BEHAVIOUR DEFINED AS**
**"This name binding is used when a verificationRule instance for SCCP accounting is created by management operations.";;**
**CREATE WITH REFERENCE OBJECT INSTANCE;**
**DELETE;**
**REGISTERED AS {verificationRule-verificationTranslator-NBOI};**

### 7.2.5 Notification Definitions

**sccpAccounting NOTIFICATION**
**BEHAVIOUR sccpAccountingBehaviour BEHAVIOUR DEFINED AS**
**"This notification is generated on occurrence of the event specified in the reporting triggers attribute of the ss7AccountingAndVerificationControl object controlling the sccpAccount, except if the attribute selectionGroupSetForAccounting of the instance has size zero. The notification shall also be sent, if all counters have the value zero.**
**If accounting is done for all accounts in the same way, then it is possible to include the ruleSet only in one notification (e.g. the first) of the interval and omit it in all others. In this case the sequence of the given counters must be identical, i.e. refer to the same gtRules, for all notifications of the interval.";;**
**WITH INFORMATION SYNTAX**
**SccpAccountingDefinedTypesModule.SccpAccountingNotificationData**
**AND ATTRIBUTE IDS**

| | |
|---|---|
| **endOfMeasurementTime** | **endOfMeasurementTime,** |
| **sccpLinkageSet** | **sccpLinkageSet,** |
| **sccpAccCounterDataSequence** | **sccpAccCounterDataSequence;** |

**REGISTERED AS {sccpAccounting-NOI}**

**sccpAccountingVerification NOTIFICATION**
**BEHAVIOUR sccpAccountingVerificationBehaviour BEHAVIOUR DEFINED AS**
**"This notification is generated on occurrence of the event specified in the reporting triggers attribute of the ss7AccountingAndVerificationControl object controlling the sccpAccount, except if the attribute selectionGroupSetForVerification of the instance has size zero. The notification shall also be sent, if all counters have the value zero.**
**If verification is done for all accounts in the same way, then it is possible to include the ruleSet only in one notification (e.g. the first) of the interval and omit it in all others. In this case the sequence of the given counters must be identical, i.e. refer to the same gtRules, for all notifications of the interval.";;**
**WITH INFORMATION SYNTAX**
**SccpAccountingDefinedTypesModule.SccpAccountingNotificationData**
**AND ATTRIBUTE IDS**
**endOfMeasurementTime endOfMeasurementTime,**
**sccpLinkageSet sccpLinkageSet,**
**sccpAccCounterDataSequence sccpAccCounterDataSequence;**
**REGISTERED AS {sccpAccountingVerification-NOI}**

### 7.2.6 Parameter Definitions

Currently none defined.

### 7.2.7 ASN.1 Definitions

**SccpAccountingDefinedTypesModule**
**{itu-t(0) recommendation(0) q(17) omap(751) sccpAccounting(4) informationModel(0) asn1Modules(2) sccpAccountingDefinedTypesModule(0)}**

**DEFINITIONS IMPLICIT TAGS ::= BEGIN**

**IMPORTS**

**ObjectInstance, SimpleNameType**
**FROM Attribute-ASN1Module {joint-iso-itu-t ms(9) smi(3) part2(2) asn1Module(2) 1}**

**Counter, DataProblem, accountingInformationModel, accountingAction, accountingAttribute, accountingAttributeGroup, accountingNameBinding, accountingNotification, accountingObjectClass, accountingPackage, accountingParameter, SelectionGroupSequence, SelectionGroup**
**FROM AccountingDefinedTypesModule {itu-t(0) recommendation(0) q(17) omap(751) accounting(3) informationModel(0) asn1Modules(2) accountingDefinedTypesModule(0)}**

**GtNatureOfAddress,GtNumberingPlan,GtTranslationType**
**FROM SCCPDefinedTypesModule{itu-t(0) recommendation q(17) omap(751) sccp(2) informationModel(0) asn1Modules(2) sccpDefinedTypesModule(0)}**

**Ss7SpecificErrorInformation**
**FROM {itu(0) recommendation(0) q(17) omap2(2751) part1(1) informationModel(0) asn1Modules(2) q2751DefinedTypesModule(0)}**

**EXPORTS EVERYTHING**

*-- ASN.1 TYPE DEFINITIONS*

**RuleSet ::= SET SIZE (1..maxNumberReferencesInRuleSet) OF ObjectInstance**

**maxNumberReferencesInRuleSet INTEGER::= i** *-- this number is only for compilability*

**maxNumberReferencesInSccpLinkageSet INTEGER::= j** *-- this number is only for compilability*

**maxNumberReferencesInSccpSelectionGroupSet INTEGER::= q** *-- this number is only for compilability*

**SccpLinkageSet ::= SET SIZE (1..maxNumberReferencesInSccpLinkageSet ) OF ObjectInstance**

**SccpAccCounterData ::= SEQUENCE**
**{gts [0] INTEGER,**
**octets [1] INTEGER,**
**dataProblem [2] DataProblem,**
**ruleSet [3] RuleSet OPTIONAL}**

**SccpAccCounterDataSequence ::= SEQUENCE SIZE**
**(1..maxNumberReferencesInSccpSelectionGroupSet} OF SccpAccCounterData**
*-- maximum size = q*

```
SccpAccountingNotificationData ::= SEQUENCE {
        endOfMeasurementTime        EndOfMeasurementTime,
        sccpLinkageSet              SccpLinkageSet,
        sccpAccCounterDataSequence  SccpAccCounterDataSequence}

selectionGroupSetInitial SelectionGroupSet ::= {}

GtNatureOfAddressSet ::= SET OF GtNatureOfAddress

GtNumberingPlanSet ::= SET OF GtNumberingPlan

GtTranslationTypeSet ::= SET OF GtTranslationType
-- the following values of Ss7SpecificErrorInformation defined in Q.2751.1 are used:
gtRuleAlreadyUsedByAnotherTAC Ss7SpecificErrorInformation ::= 4000
                -- One of the gtRules specified in attribute ruleSet is already
                -- used by another terminatingAccountClassForAccounting.

invalidTACForAccountingReference Ss7SpecificErrorInformation ::= 4001
                -- at least one of the references in selectionGroupSetForAccounting is not
                -- referring to a terminatingAccountClassForAccounting

invalidTACForVerificationReference Ss7SpecificErrorInformation ::= 4002
                -- at least one of the references in selectionGroupSetForVerification is not
                -- referring to a terminatingAccountClassForVerification contained in the
                -- same sccpAccount.

ruleOverlapError Ss7SpecificErrorInformation ::= 4003
                -- the ruleSet of the-terminatingAccountClassForAccounting/Verification
                -- is not disjunct ! No unambiguous identification of a
                -- terminatingAccountClass would be possible.

sccpLinkageAlreadyInOtherAccount Ss7SpecificErrorInformation ::= 4004
                -- at least one of the sccpLinkages refered to by the sccpLinkageSet is
                -- already -referred to by another sccpLinkageSet in another sccpAccount
                -- instance

selectionGroupOverlapError Ss7SpecificErrorInformation ::= 4005
                -- the manipulated selectionGroupSetForAccounting/Verification would
                -- not allow an unambigous identification of a the counter to be
                -- incremented

-- ASN.1 OBJECT IDENTIFIER definitions

ruleSet-AOi OBJECT IDENTIFIER ::= {accountingAttribute gtRuleSet(22)}

sccpAccCounterDataSequence-AOi OBJECT IDENTIFIER ::= {accountingAttribute sccpAccCounterDataSequence(26)}

sccpAccountId-AOi OBJECT IDENTIFIER ::= {accountingAttribute sccpAccountId(23)}

sccpAccounting-NOI OBJECT IDENTIFIER ::= {accountingNotification sccpAccounting(3)}

sccpAccountingVerification-NOI OBJECT IDENTIFIER ::= {accountingNotification sccpAccountingVerification(4)}

sccpAccountPackage-POi OBJECT IDENTIFIER ::= {accountingPackage sccpAccountPackage(12)}

sccpAccount-OOi OBJECT IDENTIFIER ::= {accountingObjectClass sccpAccount(11)}

sccpAccountingLogRecord-OOi OBJECT IDENTIFIER ::= {accountingObjectClass sccpAccountingLogRecord(7)}

sccpAccountingLogRecordPackage-POi OBJECT IDENTIFIER ::= {accountingPackage
sccpAccountingLogRecordPackage(13)}

sccpAccountingNotificationsPackage-POi OBJECT IDENTIFIER ::= {accountingPackage
sccpAccountingNotificationsPackage(11)}

sccpLinkageSet-AOi OBJECT IDENTIFIER ::= {accountingAttribute sccpLinkageSet(24)}

sccpAccount-scrc-NBOI OBJECT IDENTIFIER ::= {accountingNameBinding sccpAccount-scrc(6)}

terminatingAccountClassForVerification-sccpAccount-NBOI OBJECT IDENTIFIER ::= {accountingNameBinding
terminatingAccountClassForVerification-sccpAccount(7)}
```

**terminatingAccountClassForAccounting-scrc-NBOI OBJECT IDENTIFIER ::= {accountingNameBinding terminatingAccountClassForAccounting-scrc(8)}**

**terminatingAccountClassForAccountingId-AOi OBJECT IDENTIFIER ::= {accountingAttribute terminatingAccountClassForAccountingId(25)}**

**terminatingAccountClassForVerificationId-AOi OBJECT IDENTIFIER ::= {accountingAttribute terminatingAccountClassForVerificationId(21)}**

**terminatingAccountClassForAccountingPackage-POi OBJECT IDENTIFIER ::= {accountingPackage terminatingAccountClassForAccountingPackage(7)}**

**terminatingAccountClassForVerificationPackage-POi OBJECT IDENTIFIER ::= {accountingPackage terminatingAccountClassForVerificationPackage(10)}**

**terminatingAccountClassForAccounting-OOi OBJECT IDENTIFIER ::= {accountingObjectClass terminatingAccountClassForAccounting(6)}**

**terminatingAccountClassForVerification-OOi OBJECT IDENTIFIER ::= {accountingObjectClass terminatingAccountClassForVerification(9)}**

**verificationRule-OOi OBJECT IDENTIFIER ::= {accountingObjectClass verificationRule(10)}**

**verificationTranslator-OOi OBJECT IDENTIFIER ::= {accountingObjectClass verificationTranslator(8)}**

**verificationRulePackage-POi OBJECT IDENTIFIER ::= {accountingPackage verificationRulePackage(8)}**

**verificationTranslatorPackage-POi OBJECT IDENTIFIER ::= {accountingPackage verificationTranslatorPackage(9)}**

**verificationTranslatorId-AOi OBJECT IDENTIFIER ::= {accountingAttribute verificationTranslatorId(16)}**

**verificationRuleId-AOi OBJECT IDENTIFIER ::= {accountingAttribute verificationRuleId(17)}**

**gtNatureOfAddressSet-AOi OBJECT IDENTIFIER ::= {accountingAttribute gtNatureOfAddressSet(18)}**

**gtNumberingPlanSet-AOi OBJECT IDENTIFIER ::= {accountingAttribute gtNumberingPlanSet(19)}**

**gtTranslationTypeSet-AOi OBJECT IDENTIFIER ::= {accountingAttribute gtTranslationTypeSet(20)}**

**verificationTranslator-sccpAccount-NBOi OBJECT IDENTIFIER ::= {accountingNameBinding verificationTranslator-sccpAccount(9)}**

**verificationRule-verificationTranslator-NBOi OBJECT IDENTIFIER ::= {accountingNameBinding verificationRule-verificationTranslator(10)}**

**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 |
| Series Z | Programming languages |