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Presentation of Technical Specification to TSG SA

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Abstract of document:

This is a Technical Specification on the Signalling Transport Network Interface NRM CMIP Solution Set.

The purpose of this Signalling Transport Network Interface Resource Model IRP: CMIP Solution Set is to define the mapping of the IRP information model (see 3GPP TS 32.742) to the protocol specific details necessary for implementation of this IRP in a Q3 environment.

This work is done against the WID contained in SP-020754 (Work Item ID: OAM-NIM).

Changes since last presentation to TSG-SA :

New

Outstanding Issues:

None.

Contentious Issues:

None.

3GPP TS 32.744 V1.0.0 (2004-12)

Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Telecommunication management;
Configuration Management (CM);
Signalling Transport Network (STN) Interface Network
Resource Model (NRM) Integration Reference Point (IRP):
Common Management Information Protocol (CMIP)
Solution Set (SS)
(Release 6)**



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Keywords

UMTS, management, NRM, IRP, CMIP

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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

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- x the first digit:
 - 1 presented to TSG for information;
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project: Technical Specification Group Services and System Aspects; Telecommunication management; Configuration Management (CM); as identified below:

- TS 32.741: "Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Requirements".
- TS 32.742: "Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- TS 32.743: "Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Common Object Request Broker Architecture (CORBA) Solution Set (SS)".
- TS 32.744: "Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Common Management Information Protocol (CMIP) Solution Set (SS)".**
- TS 32.745: "Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Bulk CM eXtensible Markup Language (XML) file format definition".

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Elements (NEs) and Network Resources (NRs), and they may be initiated by the operator or by functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimisation programme (e.g. modifications), and to maintain the overall Quality of Service (QoS). The CM actions are initiated either as single actions on single NEs of the 3G network, or as part of a complex procedure involving actions on many resources/objects in one or several NEs.

1 Scope

The purpose of this STN Network Resources IRP: CMIP Solution Set is to define the mapping of the IRP information model (see 3GPP TS 32.742 [4]) to the protocol specific details necessary for implementation of this IRP in a CORBA/IDL environment.

This Solution Set specification is related to 3GPP TS 32.742 V6.0.X.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
- [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [3] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".
- [4] 3GPP TS 32.742: "Telecommunication management; Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- [5] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [6] 3GPP TS 32.304: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".
- [7] ITU-T Recommendation X.710 (1991): "Common Management Information Service Definition for CCITT Applications",
ITU-T Recommendation X.711: "Information technology - Open Systems Interconnection - Common Management Information Protocol: Specification".
- [8] 3GPP TS 32.111-2: "Telecommunication management; Fault Management (FM); Part 2: Alarm Integration Reference Point (IRP); Information Service (IS)".
- [9] ITU-T Recommendation X.721 (02/92): "Information Technology - Open Systems Interconnection – Structure of Management Information: Definition of Management Information".
- [10] ITU-T Recommendation M.3100 (07/95): "Maintenance Telecommunications Management Network – Generic Network Information Model".

3 Definitions and abbreviations

3.1 Definitions

For terms and definitions please refer to 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.600 [3] and 3GPP TS 32.742 [4].

3.2 Abbreviations

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

ASN.1	Abstract Syntax Notation 1
CMIP	Common Management Information Protocol
DN	Distinguished Name
IS	Information Service
GDMO	Guidelines for the Definition of Managed Objects
IRP	Integration Reference Point
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
SS	Solution Set
STN	Signalling Transport Network

4 Architectural features

The overall architectural feature of STN Network Resources IRP is specified in 3GPP TS 32.742 [4]. This clause specifies features that are specific to the CMIP SS.

4.1 Notifications

Notifications are sent according to the Notification IRP: CMIP SS (see 3GPP TS 32.304 [6]).

4.2 Syntax for Distinguished Names and Versions

The format of a Distinguished Name is defined in 3GPP TS 32.300 [5].

5 Mapping

5.1 General mappings

Attributes modelling associations as defined in the NRM (here also called "reference attributes") are in this SS mapped to attributes. The names of the reference attributes in the NRM are mapped to the corresponding attribute names in the MOC. When the cardinality for an association is 0..1 or 1..1 the datatype for the reference attribute is defined as an MOReference. The value of an MO reference contains the distinguished name of the associated MO. When the cardinality for an association allows more than one referred MO, the reference attribute will be of type MOReferenceSet, which contains a sequence of MO references.

5.2 STN NRM Information Object Class (IOC) mapping

This Solution Set supports reference attributes for relations other than containment relations between objects. Reference attributes are therefore introduced in each MOC where needed.

Mapping of Information Object Classes

IS IOC	CMIP SS MOC
MtpSignPoint e	mtpSignPoint
SignLinkSetTp	signLinkSetTp
SignLinkTp	signLinkTp
SignRouteSetNePart	signRouteSetNePart
SignRouteNePart	signRouteNePart

5.2.1 IOC MtpSignPoint

Mapping from NRM IOC MtpSignPoint attributes to SS equivalent MOC MtpSignPoint attributes

IS Attribute	CMIP SS Attribute	Support Qualifier	Read Qualifier	Write Qualifier
mtpSignPointId	mtpSignPointId	M	M	--
pointCode	pointCode	M	M	--
networkIndicator	networkIndicator	M	M	--
pointCodeLength	pointCodeLength	M	M	--
spType	spType	M	M	--
userLabel	userLabel	M	M	M
relatedObjects	relatedObjects	M	M	--

5.2.2 IOC SignLinkSetTp

Mapping from NRM IOC SignLinkSetTp attributes to SS equivalent MOC SignLinkSetTp attributes

IS Attribute	CMIP SS Attribute	Support Qualifier	Read Qualifier	Write Qualifier
signLinkSetTpId	signLinkSetTpId	M	M	-
adjPc	adjPc	M	M	-
userLabel	userLabel	M	M	M
maxCapacityLS	maxCapacityLS	M	M	-

5.2.3 IOC SignLinkTp

Mapping from NRM IOC SignLinkTp attributes to SS equivalent MOC SignLinkTp attributes

IS Attribute	CMIP SS Attribute	Support Qualifier	Read Qualifier	Write Qualifier
signLinkTpId	signLinkTpId	M	M	-
slCode	slCode	M	M	-
slsCodeNormalList	slsCodeNormalList	O	M	-
slsCodeCurrentList	slsCodeCurrentList	M	M	-
linkTpStatus	linkTpStatus	M	M	-
maxCapacitySL	maxCapacitySL	M	M	-
userLabel	userLabel	M	M	M
signLinkType	signLinkType	M	M	-

5.2.5 IOC SignRouteSetNePart

Mapping from NRM IOC SignRouteSetNePart attributes to SS equivalent MOC SignRouteSetNePart attributes

IS Attribute	CMIP SS Attribute	Support Qualifier	Read Qualifier	Write Qualifier
signRouteSetNePartId	signRouteSetNePartId	M	M	-
destinationPc	destinationPc	M	M	-
userLabel	userLabel	M	M	M
loadsharingInformationRouteSetNePart	loadsharingInformationRouteSetNePart	M	M	-

5.2.6 IOC SignRouteNePart

Mapping from NRM IOC SignRouteNePart attributes and association roles to SS equivalent MOC SignRouteNePart attributes

IS Attribute	CMIP SS Attribute	Support Qualifier	Read Qualifier	Write Qualifier
signRouteNePartId	signRouteNePartId	M	M	-
signLinkSetTpPointer	signLinkSetTpPointer	M	M	-
fixedPriority	fixedPriority	M	M	-
userLabel	userLabel	M	M	M

-- GDMO Definitions

--Please do not remove the "--" in front of the headline numbering, as it is the CMIP code
 --for a comment. This way the whole chapter can be put directly into a compiler.

-- 6.1 Managed Object Classes

-- 6.1.1 mtpSignPoint

```
mtpSignPoint MANAGED OBJECT CLASS
DERIVED FROM
  "3GPP TS32.622" : top;
CHARACTERIZED BY
  mtpSignPointMandatoryAttributesPackage,
  "3GPP TS 32.111-4": x721AlarmNotificationsPackage;
CONDITIONAL PACKAGES
  "Rec. M.3100: 1995":createDeleteNotificationsPackage
  PRESENT IF
    "the objectCreation and the objectDeletion notifications defined in
    ITU-T Rec. X.721 are supported by an instance of this class.",
  "Rec. M.3100: 1995 [10]": attributeValueChangeNotificationPackage
  PRESENT IF "the attributeValueChange notification defined in
  ITU-T Rec. X.721 [9] is supported by an instance of this class.";
REGISTERED AS {ts32-744ObjectClass 10600};
```

-- 6.1.2 signLinkSetTp

```
signLinkSetTp MANAGED OBJECT CLASS
DERIVED FROM
  "3GPP TS32.622" : top;
CHARACTERIZED BY
  signLinkSetTpMandatoryAttributesPackage
  "3GPP TS 32.111-4": x721AlarmNotificationsPackage;
CONDITIONAL PACKAGES
  "Rec. M.3100: 1995":createDeleteNotificationsPackage
  PRESENT IF
    "the objectCreation and the objectDeletion notifications defined in
    ITU-T Rec. X.721 are supported by an instance of this class.",
  "Rec. M.3100: 1995 [10]":attributeValueChangeNotificationPackage
  PRESENT IF "the attributeValueChange notification defined in
  ITU-T Rec. X.721 [9] is supported by an instance of this class.";
REGISTERED AS {ts32-744ObjectClass 20600};
```

-- 6.1.3 signLinkTp

```
signLinkTp MANAGED OBJECT CLASS
DERIVED FROM
  "3GPP TS32.622" : top;
CHARACTERIZED BY
  signLinkTpMandatoryAttributesPackage,
  signLinkTpOptionalAttributesPackage,
  "3GPP TS 32.111-4": x721AlarmNotificationsPackage;
CONDITIONAL PACKAGES
  "Rec. M.3100: 1995":createDeleteNotificationsPackage
  PRESENT IF
    "the objectCreation and the objectDeletion notifications defined in
    ITU-T Rec. X.721 are supported by an instance of this class.",
  "Rec. M.3100: 1995 [10]":attributeValueChangeNotificationPackage
  PRESENT IF "the attributeValueChange notification defined in
  ITU-T Rec. X.721 [9] is supported by an instance of this class.";
REGISTERED AS {ts32-744ObjectClass 30600};
```

-- 6.1.4 signRouteSetNePart

```
signRouteSetNePart MANAGED OBJECT CLASS
DERIVED FROM
  "3GPP TS32.622" : top;
CHARACTERIZED BY
  signRouteSetNePartMandatoryAttributesPackage
  "3GPP TS 32.111-4": x721AlarmNotificationsPackage;
```

CONDITIONAL PACKAGES

"Rec. M.3100: 1995":createDeleteNotificationsPackage

PRESENT IF

"the objectCreation and the objectDeletion notifications defined in ITU-T Rec. X.721 are supported by an instance of this class.",

"Rec. M.3100: 1995":attributeValueChangeNotificationPackage

PRESENT IF

"the attributeValueChange notification defined in ITU-T Rec. X.721 is supported by an instance of this class.";

REGISTERED AS {ts32-744ObjectClass 40600};

-- 6.1.5 signRouteNePart

signRouteNePart **MANAGED OBJECT CLASS**

DERIVED FROM

"3GPP TS32.622" : top;

CHARACTERIZED BY

signRouteNePartMandatoryAttributesPackage;

"3GPP TS 32.111-4": x721AlarmNotificationsPackage;

CONDITIONAL PACKAGES

"Rec. M.3100: 1995":createDeleteNotificationsPackage

PRESENT IF

"the objectCreation and the objectDeletion notifications defined in ITU-T Rec. X.721 are supported by an instance of this class.",

"Rec. M.3100: 1995 [10]":attributeValueChangeNotificationPackage

PRESENT IF

"the attributeValueChange notification defined in ITU-T Rec. X.721 [9] is supported by an instance of this class.";

REGISTERED AS {ts32-744ObjectClass 50600};

-- 6.2 Packages**-- 6.2.1 mtpSignPointMandatoryAttributesPackage**

mtpSignPointMandatoryAttributesPackage **PACKAGE**

BEHAVIOUR

mtpSignPointMandatoryAttributesPackageBehaviour;

ATTRIBUTES

mtpSignPointId	GET,
pointCode	GET,
networkIndicator	GET,
pointCodeLength	GET,
spType	GET,
userLabel	GET-REPLACE,
relatedObjects	GET;

REGISTERED AS {ts32-744Package 10600};

mtpSignPointMandatoryAttributesPackageBehaviour **BEHAVIOUR**

DEFINED AS

"These are the mandatory attributes of the MOC MtpSignPoint.";

-- 6.2.2 signLinkSetTpMandatoryAttributesPackage

signLinkSetTpMandatoryAttributesPackage **PACKAGE**

BEHAVIOUR

signLinkSetTpMandatoryAttributesPackageBehaviour;

ATTRIBUTES

signLinkSetTpId	GET,
adjPc	GET,
userLabel	GET-REPLACE,
maxCapacityLS	GET;

REGISTERED AS {ts32-744Package 20600};

signLinkSetTpMandatoryAttributesPackageBehaviour **BEHAVIOUR**

DEFINED AS

"These are the mandatory attributes of the MOC SignLinkSetTp.";

-- 6.2.3 signLinkTpMandatoryAttributesPackage

signLinkTpMandatoryAttributesPackage **PACKAGE**

BEHAVIOUR

```
signLinkTpMandatoryAttributesPackageBehaviour;
```

ATTRIBUTES

```
signLinkTpId          GET,
slCode                GET,
slsCodeCurrentList   GET,
linkTpStatus          GET,
maxCapacitySL         GET,
userLabel             GET-REPLACE,
signLinkType          GET;
```

```
REGISTERED AS {ts32-744Package 30600};
```

```
signLinkTpMandatoryAttributesPackageBehaviour BEHAVIOUR
```

DEFINED AS

```
"These are the mandatory attributes of the MOC SignLinkTp.";
```

-- 6.2.4 signLinkTpOptionalAttributesPackage

```
signLinkTpOptionalAttributesPackage PACKAGE
```

BEHAVIOUR

```
signLinkTpOptionalAttributesPackageBehaviour;
```

ATTRIBUTES

```
slsCodeNormalList    GET;
```

```
REGISTERED AS {ts32-744Package 40600};
```

```
signLinkTpOptionalAttributesPackageBehaviour BEHAVIOUR
```

DEFINED AS

```
"These are the optional attributes of the MOC SignLinkTp.";
```

-- 6.2.5 signRouteSetNePartMandatoryAttributesPackage

```
signRouteSetNePartMandatoryAttributesPackage PACKAGE
```

BEHAVIOUR

```
signRouteSetNePartMandatoryAttributesPackageBehaviour;
```

ATTRIBUTES

```
signRouteSetNePartId          GET,
destinationPc                 GET,
userLabel                     GET-REPLACE,
loadsharingInformationRouteSetNePart  GET;
```

```
REGISTERED AS {ts32-744Package 50600};
```

```
signRouteSetNePartMandatoryAttributesPackageBehaviour BEHAVIOUR
```

DEFINED AS

```
"These are the mandatory attributes of the MOC SignRouteSetNePart.";
```

-- 6.2.6 signRouteNePartMandatoryAttributesPackage

```
signRouteNePartMandatoryAttributesPackage PACKAGE
```

BEHAVIOUR

```
signRouteNePartMandatoryAttributesPackageBehaviour;
```

ATTRIBUTES

```
signRouteNePartId          GET,
signLinkSetTpPointer       GET,
fixedPriority               GET,
userLabel                  GET-REPLACE;
```

```
REGISTERED AS {ts32-744Package 60600};
```

```
signRouteNePartMandatoryAttributesPackageBehaviour BEHAVIOUR
```

DEFINED AS

```
"These are the mandatory attributes of the MOC SignRouteNePart.";
```

-- 6.3 Attributes**-- 6.3.1 mtpSignPointId**

```
mtpSignPointId ATTRIBUTE
```

WITH ATTRIBUTE SYNTAX

```
TS32-744TypeModule.GeneralObjectId;
```

MATCHES FOR

```
    EQUALITY;
    BEHAVIOUR
    mtpSignPointIdBehaviour;
REGISTERED AS {ts32-744Attribute 10600};

mtpSignPointIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.2 pointCode

```
pointCode ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.PointCode;
    MATCHES FOR
    EQUALITY;
    BEHAVIOUR
    pointCodeBehaviour;
REGISTERED AS {ts32-744Attribute 20600};

pointCodeBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.3 networkIndicator

```
networkIndicator ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.NetworkIndicator;
    MATCHES FOR
    EQUALITY;
    BEHAVIOUR
    networkIndicatorBehaviour;
REGISTERED AS {ts32-744Attribute 30600};

networkIndicatorBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.4 pointCodeLength

```
pointCodeLength ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.PointCodeLength;
    MATCHES FOR
    EQUALITY;
    BEHAVIOUR
    pointCodeLengthBehaviour;
REGISTERED AS {ts32-744Attribute 40600};

pointCodeLengthBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.5 spType

```
spType ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.SpType;
    MATCHES FOR
    EQUALITY;
    BEHAVIOUR
    spTypeBehaviour;
REGISTERED AS {ts32-744Attribute 50600};

spTypeBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.6 userLabel

```
userLabel ATTRIBUTE
  WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.UserLabel;
  MATCHES FOR
    EQUALITY;
  BEHAVIOUR
    userLabelBehaviour;
REGISTERED AS {ts32-744Attribute 60600};

userLabelBehaviour BEHAVIOUR
DEFINED AS
  "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.7 relatedObjects

```
relatedObjects ATTRIBUTE
  WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.RelatedObjects;
  MATCHES FOR
    EQUALITY;
  BEHAVIOUR
    relatedObjectsBehaviour;
REGISTERED AS {ts32-744Attribute 70600};

relatedObjectsBehaviour BEHAVIOUR
DEFINED AS
  "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.8 signLinkSetTpId

```
signLinkSetTpId ATTRIBUTE
  WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.GeneralObjectId;
  MATCHES FOR
    EQUALITY;
  BEHAVIOUR
    signLinkSetTpIdBehaviour;
REGISTERED AS {ts32-744Attribute 80600};

signLinkSetTpIdBehaviour BEHAVIOUR
DEFINED AS
  "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.9 adjPc

```
adjPc ATTRIBUTE
  WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.AdjPc;
  MATCHES FOR
    EQUALITY;
  BEHAVIOUR
    adjPcBehaviour;
REGISTERED AS {ts32-744Attribute 90600};

adjPcBehaviour BEHAVIOUR
DEFINED AS
  "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.10 maxCapacityLS

```
maxCapacityLS ATTRIBUTE
  WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.MaxCapacityLS;
  MATCHES FOR
    EQUALITY;
  BEHAVIOUR
    maxCapacityLSBehaviour;
REGISTERED AS {ts32-744Attribute 100600};

maxCapacityLSBehaviour BEHAVIOUR
```

DEFINED AS

"This attribute is described in 3GPP TS32.742 [4].";

-- 6.3.11 maxCapacitySL**maxCapacitySL ATTRIBUTE****WITH ATTRIBUTE SYNTAX**

TS32-744TypeModule.MaxCapacitySL;

MATCHES FOR

EQUALITY;

BEHAVIOUR

maxCapacitySLBehaviour;

REGISTERED AS {ts32-744Attribute 110600};

maxCapacitySLBehaviour BEHAVIOUR**DEFINED AS**

"This attribute is described in 3GPP TS32.742 [4].";

-- 6.3.12 signLinkTpId**signLinkTpId ATTRIBUTE****WITH ATTRIBUTE SYNTAX**

TS32-744TypeModule.SignLinkTpId;

MATCHES FOR

EQUALITY;

BEHAVIOUR

signLinkTpIdBehaviour;

REGISTERED AS {ts32-744Attribute 120600};

signLinkTpIdBehaviour BEHAVIOUR**DEFINED AS**

"This attribute is described in 3GPP TS32.742 [4].";

-- 6.3.13 slCode**slCode ATTRIBUTE****WITH ATTRIBUTE SYNTAX**

TS32-744TypeModule.SlCode;

MATCHES FOR

EQUALITY;

BEHAVIOUR

slCodeBehaviour;

REGISTERED AS {ts32-744Attribute 130600};

slCodeBehaviour BEHAVIOUR**DEFINED AS**

"This attribute is described in 3GPP TS32.742 [4].";

-- 6.3.14 slsCodeNormalList**slsCodeNormalList ATTRIBUTE****WITH ATTRIBUTE SYNTAX**

TS32-744TypeModule.SlsCodeNormalList;

MATCHES FOR

EQUALITY;

BEHAVIOUR

slsCodeNormalListBehaviour;

REGISTERED AS {ts32-744Attribute 140600};

slsCodeNormalListBehaviour BEHAVIOUR**DEFINED AS**

"This attribute is described in 3GPP TS32.742 [4].";

-- 6.3.15 slsCodeCurrentList**slsCodeCurrentList ATTRIBUTE****WITH ATTRIBUTE SYNTAX**

TS32-744TypeModule.SlsCodeCurrentList;

MATCHES FOR

EQUALITY;

BEHAVIOUR


```
    slsCodeCurrentListBehaviour;  
REGISTERED AS {ts32-744Attribute 150600};  
  
slsCodeCurrentListBehaviour BEHAVIOUR  
DEFINED AS  
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.16 linkTpStatus

```
linkTpStatus ATTRIBUTE  
WITH ATTRIBUTE SYNTAX  
    TS32-744TypeModule.LinkTpStatus;  
MATCHES FOR  
    EQUALITY;  
BEHAVIOUR  
    linkTpStatusBehaviour;  
REGISTERED AS {ts32-744Attribute 160600};  
  
linkTpStatusBehaviour BEHAVIOUR  
DEFINED AS  
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.17 linkTpStatus

```
signLinkType ATTRIBUTE  
WITH ATTRIBUTE SYNTAX  
    TS32-744TypeModule.SignLinkType;  
MATCHES FOR  
    EQUALITY;  
BEHAVIOUR  
    signLinkTypeBehaviour;  
REGISTERED AS {ts32-744Attribute 170600};  
  
signLinkTypeBehaviour BEHAVIOUR  
DEFINED AS  
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.18 signRouteSetNePartId

```
signRouteSetNePartId ATTRIBUTE  
WITH ATTRIBUTE SYNTAX  
    TS32-744TypeModule.GeneralObjectId;  
MATCHES FOR  
    EQUALITY;  
BEHAVIOUR  
    signRouteSetNePartIdBehaviour;  
REGISTERED AS {ts32-744Attribute 180600};  
  
signRouteSetNePartIdBehaviour BEHAVIOUR  
DEFINED AS  
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.19 destinationPc

```
destinationPc ATTRIBUTE  
WITH ATTRIBUTE SYNTAX  
    TS32-744TypeModule.DestinationPc;  
MATCHES FOR  
    EQUALITY;  
BEHAVIOUR  
    destinationPcBehaviour;  
REGISTERED AS {ts32-744Attribute 190600};  
  
destinationPcBehaviour BEHAVIOUR  
DEFINED AS  
    "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.20 loadsharingInformationRouteSetNePart

```
loadsharingInformationRouteSetNePart ATTRIBUTE  
WITH ATTRIBUTE SYNTAX
```

```

    TS32-744TypeModule.LoadsharingInformationRouteSetNePart;
MATCHES FOR
    EQUALITY;
BEHAVIOUR
    loadsharingInformationRouteSetNePartBehaviour;
REGISTERED AS {ts32-744Attribute 200600};

```

```

loadsharingInformationRouteSetNePartBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";

```

-- 6.3.21 signRouteNePartId

```

signRouteNePartId ATTRIBUTE
WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.GeneralObjectId;
MATCHES FOR
    EQUALITY;
BEHAVIOUR
    signRouteNePartIdBehaviour;
REGISTERED AS {ts32-744Attribute 210600};

```

```

signRouteNePartIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";

```

-- 6.3.22 signLinkSetTpPointer

```

signLinkSetTpPointer ATTRIBUTE
WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.SignLinkSetTpPointer;
MATCHES FOR
    EQUALITY;
BEHAVIOUR
    signLinkSetTpPointerBehaviour;
REGISTERED AS {ts32-744Attribute 220600};

```

```

signLinkSetTpPointerBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";

```

-- 6.3.23 fixedPriority

```

fixedPriority ATTRIBUTE
WITH ATTRIBUTE SYNTAX
    TS32-744TypeModule.FixedPriority;
MATCHES FOR
    EQUALITY;
BEHAVIOUR
    fixedPriorityBehaviour;
REGISTERED AS {ts32-744Attribute 230600};

```

```

fixedPriorityBehaviour BEHAVIOUR
DEFINED AS
    "This attribute is described in 3GPP TS32.742 [4].";

```

-- 6.4 Name-Binding

-- 6.4.1 signLinkSetTp-mtpSignPoint

```

signLinkSetTp-mtpSignPoint NAME BINDING
SUBORDINATE OBJECT CLASS
    signLinkSetTp;
NAMED BY SUPERIOR OBJECT CLASS
    stpSignPoint;
WITH ATTRIBUTE
    signLinkSetTPId;
BEHAVIOUR
    signLinkSetTp-mtpSignPointBehaviour;
CREATE

```

```

    WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-744NameBinding 10600};

```

```

signLinkSetTp-mtpSignPointBehaviour BEHAVIOUR
DEFINED AS

```

```

    "The name binding represents a relationship in which a MtpSignPoint contains and
    controls a SignLinkSrtTp. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";

```

-- 6.4.2 signRouteSetNePart-mtpSignPoint

```

signRouteSetNePart-mtpSignPoint NAME BINDING
SUBORDINATE OBJECT CLASS
    signRouteSetNePart;
NAMED BY SUPERIOR OBJECT CLASS
    mtpSignPoint;
WITH ATTRIBUTE
    signRouteSetNePartId;
BEHAVIOUR
    signRouteSetNePart-mtpSignPointBehaviour;
CREATE
    WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-744NameBinding 20600};

```

```

signRouteSetNePart-mtpSignPointBehaviour BEHAVIOUR
DEFINED AS

```

```

    "The name binding represents a relationship in which a MtpSignPoint contains and
    controls a SignRouteSetNePart. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";

```

-- 6.4.3 signRouteNePart-signRouteSetNePart

```

signRouteNePart-signRouteSetNePart NAME BINDING
SUBORDINATE OBJECT CLASS
    signRouteNePart;
NAMED BY SUPERIOR OBJECT CLASS
    signRouteSetNePart;
WITH ATTRIBUTE
    signRouteNePartId;
BEHAVIOUR
    signRouteNePart-signRouteSetNePartBehaviour;
CREATE
    WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-744NameBinding 30600};

```

```

signRouteNePart-signRouteSetNePartBehaviour BEHAVIOUR
DEFINED AS

```

```

    "The name binding represents a relationship in which a managedNode contains and
    controls a irpAgent. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";

```

-- 6.4.4 signLinkTp-signLinkSetTp

```

signLinkTp-signLinkSetTp NAME BINDING
SUBORDINATE OBJECT CLASS
    signLinkTp;
NAMED BY SUPERIOR OBJECT CLASS
    signLinkSetTp;
WITH ATTRIBUTE
    signLinkTpId;
BEHAVIOUR
    signLinkTp-signLinkSetTpBehaviour;
CREATE
    WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
    ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-744NameBinding 40600};

```

signLinkTp-signLinkSetTpBehaviour **BEHAVIOUR**

DEFINED AS

"The name binding represents a relationship in which a SignLinkSetTp contains and controls a SignLinkTp. When automatic instance naming is used, the choice of name bindings left as a local matter.";

-- 7 ASN.1 definitions for the Signalling Transport Network Interface NRM

```
TS32-744TypeModule {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0) umts-Operation-
Maintenance(3) ts-32-744(744) informationModel(0) asn1Module(2) version10600(10600)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
BEGIN
```

```
--EXPORTS everything
```

```
--IMPORTS nothing
```

```
-- 3GPP TS 32.744 related Object Identifiers
```

```
baseNodeUMTS          OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4)
etsi(0) mobileDomain(0)
umts-Operation-Maintenance(3)}

ts32-744              OBJECT IDENTIFIER ::= {baseNodeUMTS ts32-744(744)}
ts32-744InfoModel     OBJECT IDENTIFIER ::= {ts32-744 informationModel(0)}

ts32-744ObjectClass  OBJECT IDENTIFIER ::= {ts32-744InfoModel managedObjectClass(3)}
ts32-744Package       OBJECT IDENTIFIER ::= {ts32-744InfoModel package(4)}
ts32-744NameBinding  OBJECT IDENTIFIER ::= {ts32-744InfoModel nameBinding(6)}
ts32-744Attribute     OBJECT IDENTIFIER ::= {ts32-744InfoModel attribute(7)}
ts32-744Notification OBJECT IDENTIFIER ::= {ts32-744InfoModel notification(10)}
```

```
-- Start of 3GPP SA5 own definitions
```

```
AdjPc ::= INTEGER
```

```
DestinationPc ::= INTEGER
```

```
FixedPriority ::= INTEGER(0..255)
```

```
LinkTpStatus ::= ENUMERATED
```

```
{
  deactivated          (0),
  failed               (1),
  localBlocked         (2),
  remoteBlocked        (3),
  localInhibited       (4),
  remoteInhibited      (5)
}
```

```
LoadsharingInformationRouteSetNePart ::= GraphicString
```

```
MaxCapacityLS ::= FLOAT
```

```
MaxCapacitySL ::= FLOAT
```

```
MOReference ::= ObjectInstance
```

```
MtpSignPointId ::= GraphicString
```

```
NetworkIndicator ::= ENUMERATED
```

```
{
  international        (0),
  spare                 (1),
  national              (2),
  nationalSpare         (3)
}
```

```
PointCode ::= INTEGER
```

```
PointCodeLengthType ::= ENUMERATED
```

```
{
  bits24                (0),
  bits14                 (1)
}
```

```
RelatedObjects ::= SEQUENCE OF MOReference
```

```
SignLinkSetTpId ::= GraphicString
```

```
SignLinkSetTpPointer ::= MOREference
SignLinkTpId ::= GraphicString
SignLinkType ::= ENUMERATED
{
  st64k      (0),
  st2m      (1)
}
SignRouteNePartId ::= GraphicString
SignRouteSetNePartId ::= GraphicString
SlCode ::= INTEGER
SlSCode ::= INTEGER
SlSCodeNormalList ::= SEQUENCE OF SlSCode
SlSCodeCurrentList ::= SEQUENCE OF SlSCode
SpType ::= ENUMERATED
{
  sep      (0),
  stp      (1),
  step     (2)
}
UserLabel ::= GraphicString

END -- of module TS32-744TypeModule
```

Annex A (informative): List of assigned Object Identifiers

This annex provides a list with all object identifiers that have been assigned in TS 32.744. These object identifiers shall not be assigned to new objects (also not in new versions of this document).

Basic Name	Name and OID of the current TS Version	Name and OIDs of previous TS Versions
Managed Object Classes		
mtpSignPoint	Name: mtpSignPoint OID: ts32-744ObjectClass 10600	--
signLinkSetTp	Name: signLinkSetTp OID: ts32-744ObjectClass 20600	--
signLinkTp	Name: signLinkTp OID: ts32-744ObjectClass 30600	--
signRouteSetNePart	Name: signRouteSetNePart Name: ts32-744ObjectClass40600	--
signRouteNePart	Name: signRouteNePart OID: ts32-744ObjectClass50600	--
Packages		
mtpSignPointMandatoryAttributesPackage	Name: mtpSignPointMandatoryAttributesPackage OID: ts32-744Package 10600	--
signLinkSetTpMandatoryAttributesPackage	Name: signLinkSetTpMandatoryAttributesPackage OID: ts32-744Package 20600	--
signLinkTpMandatoryAttributesPackage	Name: signLinkTpMandatoryAttributesPackage OID: ts32-744Package 30600	--
signLinkTpOptionalAttributesPackage	Name: signLinkTpOptionalAttributesPackage OID: ts32-744Package 40600	--
signRouteSetNePartMandatoryAttributesPackage	Name: signRouteSetNePartMandatoryAttributesPackage OID: ts32-744Package 50600	--
signRouteNePartMandatoryAttributesPackage	Name: signRouteNePartMandatoryAttributesPackage OID: ts32-744Package 60600	--
Actions		
--	--	--
Notifications		
--	--	--
Attributes		

adjPc	Name: adjPc OID: ts32-744Attribute 90600	--
destinationPc	Name: destinationPc OID: ts32-744Attribute 190600	--
fixedPriority	Name: fixedPriority OID: ts32-744Attribute 230600	--
linkTpStatus	Name: linkTpStatus OID: ts32-744Attribute 160600	--
loadsharingInformationRouteSetNePart	Name: loadsharingInformationRouteSetNePart OID: ts32-744Attribute 20600	--
maxCapacityLS	Name: maxCapacityLS OID: ts32-744Attribute 100600	--
maxCapacitySL	Name: maxCapacitySL OID: ts32-744Attribute 110600	--
mtpSignPointId	Name: mtpSignPointId OID: ts32-744Attribute 10600	--
networkIndicator	Name: networkIndicator OID: ts32-744Attribute 30600	--
pointCode	Name: pointCode OID: ts32-744Attribute 20600	--
pointCodeLength	Name: pointCodeLength OID: ts32-744Attribute 40600	--
relatedObjects	Name: relatedObjects OID: ts32-744Attribute 70600	--
signLinkType	Name: signLinkType OID: ts32-744Attribute170600	--
signLinkSetTpId	Name: signLinkSetTpId OID: ts32-744Attribute 80600	--
signLinkSetTpPointer	Name: signLinkSetTpPointer OID: ts32-744Attribute220600	--
signLinkTpId	Name: signLinkTpId OID: ts32-744Attribute 120600	--
signRouteSetNePartId	Name: signRouteSetNePartId OID: ts32-744Attribute 180600	--
signRouteNePartId	Name: signRouteNePartId OID: ts32-744Attribute 210600	--
slCode	Name: slCode OID: ts32-744Attribute 130600	--
slsCodeCurrentList	Name: slsCodeCurrentList OID: ts32-744Attribute 150600	--
slsCodeNormalList	Name: slsCodeNormalList OID: ts32-744Attribute 140600	--
spType	Name: spType OID: ts32-744Attribute 50600	--
userLabel	Name: userLabel OID: ts32-744Attribute 60600	--
Parameters		
--	--	--
Name Bindings		
signLinkSetTp-mtpSignPoint	Name: signLinkSetTp-mtpSignPoint OID: ts32-744NameBinding 10600	--
signRouteSetNePart-mtpSignPoint	Name: signRouteSetNePart-mtpSignPoint OID: ts32-744NameBinding 20600	--
signRouteNePart-signRouteSetNePart	Name: signRouteNePart-signRouteSetNePart OID: ts32-744NameBinding 30600	--
signLinkTp-signLinkSetTp	Name: signLinkTp-signLinkSetTp OID: ts32-744NameBinding 40600	--

Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Dec 2004	S_26	SP-040819	--	--	Submitted to SA#26 for Approval	1.0.0	