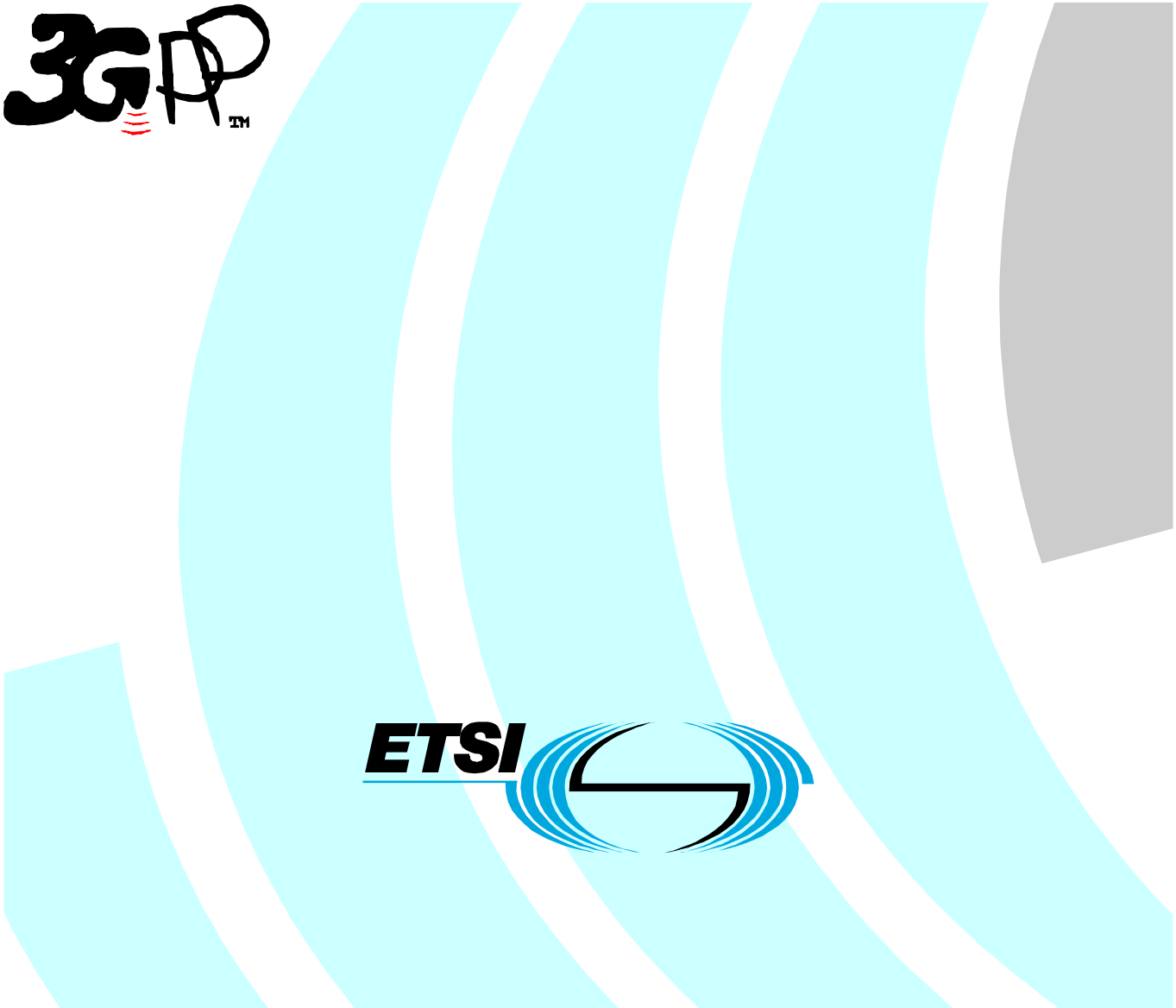
ETSI TS 132 744 V6.1.0 (2006-09)

Technical Specification

Universal Mobile Telecommunications System (UMTS);
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)
(3GPP TS 32.744 version 6.1.0 Release 6)



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Foreword

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Contents

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:

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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	signLinkSetTpR610
SignLinkTp	signLinkTpR610
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	maxCapacityLSR610	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	linkTpStatusR610	M	M	-
maxCapacitySL	maxCapacitySLR610	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

-- 6 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

```
signLinkSetTpR610 MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS32.622" : top;
   CHARACTERIZED BY
      signLinkSetTpMandatoryAttributesPackageR610
      "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 20610};
```

-- 6.1.3 signLinkTp

```
signLinkTpR610 MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS32.622" : top;
   CHARACTERIZED BY
      signLinkTpMandatoryAttributesPackageR610,
      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 30610};
```

-- 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

```
signLinkSetTpMandatoryAttributesPackageR610 PACKAGE
   BEHAVIOUR
      signLinkSetTpMandatoryAttributesPackageR610Behaviour;
   ATTRIBUTES
      signLinkSetTpId      GET,
      adjPc                GET,
      userLabel            GET-REPLACE,
      maxCapacityLSR610    GET;
REGISTERED AS {ts32-744Package 20610};

signLinkSetTpMandatoryAttributesPackageR610Behaviour BEHAVIOUR
DEFINED AS
   "These are the mandatory attributes of the MOC SignLinkSetTp.";
```

-- 6.2.3 signLinkTpMandatoryAttributesPackage

```
signLinkTpMandatoryAttributesPackageR610 PACKAGE
   BEHAVIOUR
      signLinkTpMandatoryAttributesPackageR610Behaviour;
   ATTRIBUTES
      signLinkTpId            GET,
      slCode                  GET,
      slsCodeCurrentList      GET,
      linkTpStatusR610        GET,
      maxCapacitySLR610       GET,
      userLabel               GET-REPLACE,
      signLinkType            GET;
REGISTERED AS {ts32-744Package 30610};

signLinkTpMandatoryAttributesPackageR610Behaviour 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

```
maxCapacityLSR610 ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
```

```
      TS32-744TypeModule.MaxCapacityLSR610;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      maxCapacityLSR610Behaviour;
REGISTERED AS {ts32-744Attribute 100610};

maxCapacityLSR610Behaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.11 maxCapacitySL

```
maxCapacitySLR610 ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-744TypeModule.MaxCapacitySLR610;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      maxCapacitySLR610Behaviour;
REGISTERED AS {ts32-744Attribute 110610};

maxCapacitySLR610Behaviour 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

```
linkTpStatusR610 ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-744TypeModule.LinkTpStatusR610;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      linkTpStatusR610Behaviour;
REGISTERED AS {ts32-744Attribute 160610};

linkTpStatusR610Behaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.742 [4].";
```

-- 6.3.17 signLinkType

```
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};

signLinkSetTpPointerBehaviuor 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

```
signLinkSetTpR610-mtpSignPoint NAME BINDING
   SUBORDINATE OBJECT CLASS
```

```
      signLinkSetTpR610;
   NAMED BY SUPERIOR OBJECT CLASS
      mtpSignPoint;
   WITH ATTRIBUTE
      signLinkSetTPId;
   BEHAVIOUR
      signLinkSetTpR610-mtpSignPointBehaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-744NameBinding 10610};
signLinkSetTpR610-mtpSignPointBehaviour BEHAVIOUR
DEFINED AS
   "The name binding represents a relationship in which a MtpSignPoint contains and
    controls a SignLinkSrtTpR610. 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

```
signLinkTpR610-signLinkSetTpR610 NAME BINDING
   SUBORDINATE OBJECT CLASS
      signLinkTpR610;
   NAMED BY SUPERIOR OBJECT CLASS
      signLinkSetTpR610;
   WITH ATTRIBUTE
      signLinkTpId;
   BEHAVIOUR
```

```
      signLinkTpR610-signLinkSetTpR610Behaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-744NameBinding 40610};
signLinkTpR610-signLinkSetTpR610Behaviour 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
ObjectInstance
   FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3)}


-- 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)

LinkTPStatusR610 ::= BIT STRING  --definition in accordance with ITU-T Q.751; all bits 0 means
                            --'available'
   {
   localBlocked (0),
   remoteBlocked (1),
   localInhibited (2),
   remoteInhibited (3),
   failed (4),
   deactivated (5)
   }

LoadsharingInformationRouteSetNePart ::= GraphicString

MaxCapacityLSR610 ::= REAL

MaxCapacitySLR610 ::= REAL

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


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: mtSignPoint OID: ts32-744ObjectClass 10600	--
signLinkSetTp	Name signLinkSetTpR610 OID: ts32-744ObjectClass 20610	Name signLinkSetTpR610 OID: ts32-744ObjectClass 20600
signLinkTp	Name: signLinkTpR610 OID: ts32-744ObjectClass 30610	Name: signLinkTpR610 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: signLinkSetTpMandatoryAttributesPackageR610 OID: ts32-744Package 20610	Name: signLinkSetTpMandatoryAttributesPackage OID: ts32-744Package 20600
signLinkTpMandatoryAttributesPackage	Name: signLinkTpMandatoryAttributesPackageR610 OID: ts32-744Package 30610	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: linkTpStatusR610 OID: ts32-744Attribute 160610	Name: linkTpStatus OID: ts32-744Attribute 160600
loadsharingInformationRouteSetNePart	Name: loadsharingInformationRouteSetNePart OID: ts32-744Attribute 20600	--
maxCapacityLS	Name maxCapacityLSR610 OID: ts32-744Attribute 100610	Name maxCapacityLS OID: ts32-744Attribute 100600
maxCapacitySL	Name: maxCapacitySLR610 OID: ts32-744Attribute 110610	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: signLinkSetTpR610-mtpSignPoint OID: ts32-744NameBinding 10610	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: signLinkTpR610-signLinkSetTpR610 OID: ts32-744NameBinding 40610	Name: signLinkTp-signLinkSetTp OID: ts32-744NameBinding 40600

Annex B (informative): Change history

Change history								
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Cat**	**Old**	**New**
Dec 2004	SA_26	SP-040819	--	--	Submitted to SA#26 for Approval	--	1.0.0	6.0.0
Sep 2006	SA_33	SP-060538	0001	--	Define LinkTpStatus - Align with ITU-T Q.751 and 32.742 Signalling Transport Network interface NRM IRP Information Service	F	6.0.0	6.1.0

History

Document history		
V6.0.0	December 2004	Publication
V6.1.0	September 2006	Publication