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Presentation of Technical Specification to TSG SA

Presentation to: **TSG SA Meeting #26**
Document for presentation: **TS 32.714, Version 1.0.0**
Presented for: **Approval**

Abstract of document:

This is a Technical Specification on the Transport Network Interface NRM CMIP Solution Set for 3GPP Release 6.

The purpose of this Transport Network (TN) interface Network Resource Model IRP: CMIP Solution Set is to define the mapping of the IRP information model (see 3GPP TS 32.712) 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 32.714 V1.0.0 (2004-12)

Technical Specification

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

Keywords
File Transfer, IRP, CMIP

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Contents

Foreword

This Technical Specification (TS) 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;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part 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 32.711 "Transport Network (TN) Network Resource Model (NRM) Integration Reference Point (IRP): Requirements ";

TS 32.712 "Transport Network (TN) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)";

TS 32.713 "Transport Network (TN) Network Resource Model (NRM) Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)";

TS 32.714 "Transport Network (TN) Network Resource Model (NRM) Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

TS 32.715 "Transport Network (TN) Network Resource Model (NRM) Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition

The present document is part of a TS-family which describe the requirements and information model necessary for the Telecommunication Management (TM) of 3G systems. The TM principles and TM architecture are specified in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

1 Scope

The purpose of this Transport Network (TN) interface Network Resource Model IRP: CMIP Solution Set is to define the mapping of the IRP information model (see 3GPP TS 32.712 [4]) to the protocol specific details necessary for implementation of this IRP in a Q3 environment.

This Solution Set specification is related to 3GPP TS 32.712 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 32.712: "Telecommunication management; Configuration Management (CM); Transport Network (TN) 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 Solution Set (SS)".

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 32.712 [4].

3.2 Abbreviations

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

ASN.1	Abstarct Syntax Notation 1
CMIP	Common Management Information Protocol
DN	Distinguished Name
GDMO	Guidelines for the Definition of Managed Objects

IS	Information Service
IOC	Information Object Class
IRP	Integration Reference Point
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
SS	Solution Set

4 Architectural features

The overall architectural feature of Transport Network Resources IRP is specified in 3GPP TS 32.712 [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]).

5 Mapping

5.1 Transport NRM Information Object Class (IOC) mapping

For the Transport Network NRM CMIP Solution Set the Information Object Classes (IOC) and the Interfaces defined in 3GPP TS 32.712 [7] are mapped onto Managed Object Classes (MOC) as given in Table 1. These MOC include all the Attributes, Actions and Notifications necessary to model performance management as described in 3GPP TS 32.712 [7].

Table 5.1: Mapping of Information Object Classes

IS IOC	CMIP SS MOC
TransportNetworkInterface	transportNetworkInterface
ATMChannelTerminationPoint	aTMChannelTerminationPoint
ATMPathTerminationPoint	aTMPathTerminationPoint

5.2 Mapping of IOC Attributes

5.2.1 General

The IS parameter name "*managedObjectInstance*" is mapped into DN.

Attributes modelling associations as defined in the NRM (here also called "reference attributes") are mapped onto attributes in this SS. 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 MOReference 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 MOReferences.

5.2.2 IOC TransportNetworkInterface

Table 5.2: Attribute Mapping of the IOC TransportNetworkInterface

IS Attribute	CMIP SS Attributes	Support Qualifier	Read Qualifier	Write Qualifier
transportNetworkInterfaceId	transportNetworkInterfaceId	M	M	-
userLabel	userLabel	M	M	M
transportNetworkType	transportNetworkType	M	M	-

5.2.3 IOC ATMChannelTerminationPoint

Table 5.3: Attribute Mapping of IOC ATMChannelTerminationPoint

IS Attribute	CMIP SS Attributes	Support Qualifier	Read Qualifier	Write Qualifier
aTMChannelTerminationPointId	aTMChannelTerminationPointId	M	M	--
usageChannel	usageChannel	M	M	--
virtualPathId	virtualPathId	M	M	O
virtualChannelId	virtualChannelId	M	M	O
physicalPortId	physicalPortId	M	M	O
physicalLinkType	physicalLinkType	M	M	O
serviceCategoryIn	serviceCategoryIn	M	M	O
serviceCategoryEg	serviceCategoryEg	M	M	O
usedAAL	usedAAL	M	M	O
peakCellRateIn	peakCellRateIn	M	M	O
peakCellRateEg	peakCellRateEg	M	M	O
sustainableCellRateIn	sustainableCellRateIn	O	M	O
sustainableCellRateEg	sustainableCellRateEg	O	M	O
maximumBurstSizeIn	maximumBurstSizeIn	M	M	O
maximumBurstSizeEg	maximumBurstSizeEg	M	M	O
minimumDesiredCellRateIn	minimumDesiredCellRateIn	O	M	O
minimumDesiredCellRateEg	minimumDesiredCellRateEg	O	M	O
minimumCellRateIn	minimumCellRateIn	O	M	O
minimumCellRateEg	minimumCellRateEg	O	M	O
aTMChannelTerminationPoint-ATMPathTerminationPoint	aTMChannelTerminationPoint-aTMPathTerminationPoint	M	M	--
aTMChannelTerminationPoint-IubLink	aTMChannelTerminationPoint-iubLink	M	M	--

5.2.4 IOC ATMPathTerminationPoint

Table 5.4: Attribute Mapping of NRM IOC ATMPathTerminationPoint

IS Attribute	CMIP SS Attributes	Support Qualifier	Read Qualifier	Write Qualifier
aTMPathTerminationPointId	aTMPathTerminationPointId	M	M	--
virtualPathId	virtualPathId	M	M	O
physicalPortIdList	physicalPortIdList	M	M	O
peakCellRateIn	peakCellRateIn	M	M	O
peakCellRateEg	peakCellRateEg	M	M	O
aTMPathTerminationPoint-ATMChannelTerminationPoint	aTMPathTerminationPoint-aTMChannelTerminationPoint	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 transportNetworkInterface

```
transportNetworkInterface MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS32.622" : managedFunction;
   CHARACTERIZED BY
      transportNetworkInterfaceMandatoryAttributesPackage;
REGISTERED AS {ts32-714ObjectClass 10600};
```

-- 6.1.2 aTMChannelTerminationPoint

```
aTMChannelTerminationPoint MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS32.622" : top;
   CHARACTERIZED BY
      aTMChannelTerminationPointMandatoryAttributesPackage;
   CONDITIONAL PACKAGES
      aTMChannelTerminationPointOptionalAttributesPackage1
         PRESENT IF
            "an instance supports it",
      aTMChannelTerminationPointOptionalAttributesPackage2
         PRESENT IF
            "an instance supports it",
      aTMChannelTerminationPointOptionalAttributesPackage3
         PRESENT IF
            "an instance supports it",
      aTMChannelTerminationPointOptionalAttributesPackage4
         PRESENT IF
            "an instance supports it",
      aTMChannelTerminationPointOptionalAttributesPackage5
         PRESENT IF
            "an instance supports it",
      aTMChannelTerminationPointOptionalAttributesPackage6
         PRESENT IF
            "an instance supports it";

REGISTERED AS {ts32-714ObjectClass 20600};
```

-- 6.1.3 aTMPathTerminationPoint

```
aTMPathTerminationPoint MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS32.622" : top;
   CHARACTERIZED BY
      aTMPathTerminationPointMandatoryAttributesPackage;
REGISTERED AS {ts32-714ObjectClass 30600};
```

-- 6.2 Packages

-- 6.2.1 transportNetworkInterfaceMandatoryAttributesPackage

```
transportNetworkInterfaceMandatoryAttributesPackage PACKAGE
   BEHAVIOUR
   transportNetworkInterfaceMandatoryAttributesPackageBehaviour;
   ATTRIBUTES
      transportNetworkInterfaceId      GET,
      userLabel                        GET-REPLACE,
      transportNetworkType             GET;
```

```
REGISTERED AS {ts32-714Package 10600};

transportInterfaceMandatoryAttributesPackageBehaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4]. ";
```

-- 6.2.2 aTMChannelTerminationPointMandatoryAttributesPackage

```
aTMChannelTerminationPointMandatoryAttributesPackage PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointMandatoryAttributesPackageBehaviour;
   ATTRIBUTES
      aTMChannelTerminationPointId                              GET,
      usageChannel                                              GET,
      virtualPathId                                             GET,
      virtualChannelId                                          GET,
      physicalPortId                                            GET,
      physicalInterfaceType                                     GET,
      serviceCategoryIn                                         GET,
      serviceCategoryEg                                         GET,
      usedAAL                                                   GET,
      peakCellRateIn                                            GET,
      peakCellRateEg                                            GET,
      maximumBurstSizeIn                                        GET,
      maximumBurstSizeEg                                        GET,
      aTMChannelTerminationPoint-aTMPathTerminationPoint        GET,
      aTMChannelTerminationPoint-iubLink                        GET;
REGISTERED AS {ts32-714Package 20600};

aTMChannelTerminationPointMandatoryAttributesPackageBehaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    aTMChannelTerminationPointId, usageChannel, aTMChannelTerminationPoint-aTMPathTerminationPoint,
    aTMChannelTerminationPoint-iubLink are striktly read-only, all the others are read-write if an
    instance of the managed object supports read-write.";
```

-- 6.2.3 aTMChannelTerminationPointOptionalAttributesPackage1

```
aTMChannelTerminationPointOptionalAttributesPackage1 PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointOptionalAttributesPackage1Behaviour;
   ATTRIBUTES
      sustainableCellRateIn              GET;
REGISTERED AS {ts32-714Package 30600};

aTMChannelTerminationPointOptionalAttributesPackage1Behaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    The attributes are are read-only, unless an instance of the managed object supports
    read-write.";
```

-- 6.2.4 aTMChannelTerminationPointOptionalAttributesPackage2

```
aTMChannelTerminationPointOptionalAttributesPackage2 PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointOptionalAttributesPackage2Behaviour;
   ATTRIBUTES
      sustainableCellRateEg              GET;
REGISTERED AS {ts32-714Package 40600};

aTMChannelTerminationPointOptionalAttributesPackage2Behaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    The attributes are are read-only, unless an instance of the managed object supports
    read-write.";
```

-- 6.2.5 aTMChannelTerminationPointOptionalAttributesPackage3

```
aTMChannelTerminationPointOptionalAttributesPackage3 PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointOptionalAttributesPackage3Behaviour;
```

```
   ATTRIBUTES
      minimumDesiredCellRateIn            GET;
REGISTERED AS {ts32-714Package 50600};

aTMChannelTerminationPointOptionalAttributesPackage3Behaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    The attributes are are read-only, unless an instance of the managed object supports
    read-write.";
```

-- 6.2.6 aTMChannelTerminationPointOptionalAttributesPackage4

```
aTMChannelTerminationPointOptionalAttributesPackage4 PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointOptionalAttributesPackage4Behaviour;
   ATTRIBUTES
      minimumDesiredCellRateEg            GET;
REGISTERED AS {ts32-714Package 60600};

aTMChannelTerminationPointOptionalAttributesPackageBehaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    The attributes are are read-only, unless an instance of the managed object supports
    read-write.";
```

-- 6.2.7 aTMChannelTerminationPointOptionalAttributesPackage5

```
aTMChannelTerminationPointOptionalAttributesPackage5 PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointOptionalAttributesPackage5Behaviour;
   ATTRIBUTES
      minimumCellRateIn                   GET;
REGISTERED AS {ts32-714Package 70600};

aTMChannelTerminationPointOptionalAttributesPackage5Behaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    The attributes are are read-only, unless an instance of the managed object supports
    read-write.";
```

-- 6.2.8 aTMChannelTerminationPointOptionalAttributesPackage6

```
aTMChannelTerminationPointOptionalAttributesPackage6 PACKAGE
   BEHAVIOUR
      aTMChannelTerminationPointOptionalAttributesPackage6Behaviour;
   ATTRIBUTES
      minimumCellRateEg                   GET;
REGISTERED AS {ts32-714Package 80600};

aTMChannelTerminationPointOptionalAttributesPackage6Behaviour BEHAVIOUR
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    The attributes are are read-only, unless an instance of the managed object supports
    read-write.";
```

-- 6.2.9 aTMPathTerminationPointMandatoryAttributesPackage

```
aTMPathTerminationPointMandatoryAttributesPackage        PACKAGE
   BEHAVIOUR
      aTMPathTerminationPointMandatoryAttributesPackageBehaviour;
   ATTRIBUTES
      aTMPathTerminationPointId         GET,
      virtualPathId                     GET,
      physicalPortIdList                GET,
      peakCellRateIn                    GET,
      peakCellRateEg                    GET,
      aTMPathTerminationPoint-aTMChannelTerminationPoint      GET;
REGISTERED AS   {ts32-714Package 90600};

aTMPathTerminationPointMandatoryAttributesPackageBehaviour BEHAVIOUR
```

```
DEFINED AS
   "The attributes in this package are described in 3GPP TS32.712 [4].
    aTMPathTerminationPointId, aTMPathTerminationPoint-aTMChannelTerminationPoint are striktly read-
    only, all the others are read-write, if an instance of the managed object supports read-write.";
```

-- 6.3 Attributes

-- 6.3.1 transportNetworkInterfaceId

```
transportNetworkInterfaceId ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.GeneralObjectId;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      transportNetworkInterfaceIdBehaviour;
REGISTERED AS {ts32-714Attribute 10600};

transportNetworkInterfaceIdBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.2 userLabel

```
userLabel ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.UserLabel;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      userLabelBehaviour;
REGISTERED AS {ts32-714Attribute 20600};

userLabelBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.3 transportNetworkType

```
transportNetworkType ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.TransportNetworkType;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      transportNetworkTypeBehaviour;
REGISTERED AS {ts32-714Attribute 30600};

transportNetworkTypeBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.4 aTMChannelTerminationPointId

```
aTMChannelTerminationPointId ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.GeneralObjectId;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      aTMChannelTerminationPointIdBehaviour;
REGISTERED AS {ts32-714Attribute 40600};

aTMChannelTerminationPointIdBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.5 usageChannel

```
usageChannel ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.UsageChannel;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      usageChannelBehaviour;
REGISTERED AS {ts32-714Attribute 50600};

usageChannelBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.6 virtualPathId

```
virtualPathId ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.VirtualPathId;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      virtualPathIdBehaviour;
REGISTERED AS {ts32-714Attribute 60600};

virtualPathIdBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.7 virtualChannelId

```
virtualChannelId ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.VirtualChannelId;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      virtualChannelIdBehaviour;
REGISTERED AS {ts32-714Attribute 70600};

virtualChannelIdBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.8 physicalPortId

```
physicalPortId ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.PhysicalPortId;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      physicalPortIdBehaviour;
REGISTERED AS {ts32-714Attribute 80600};

physicalPortIdBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.9 physicalLinkType

```
physicalLinkType ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.PhysicalLinkType;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      physicalLinkTypeBehaviour;
REGISTERED AS {ts32-714Attribute 90600};
```

```
physicalLinkTypeBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.10 physicalInterfaceType

```
physicalInterfaceType ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.PhysicalInterfaceType;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      physicalInterfaceTypeBehaviour;
REGISTERED AS {ts32-714Attribute 100600};

physicalLInterfaceTypeBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.11 serviceCategoryIn

```
serviceCategoryIn ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.ServiceCategoryIn;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      serviceCategoryInBehaviour;
REGISTERED AS {ts32-714Attribute 110600};

serviceCategoryInBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.12 serviceCategoryEg

```
serviceCategoryEg ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.ServiceCategoryEg;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      serviceCategoryEgBehaviour;
REGISTERED AS {ts32-714Attribute 120600};

serviceCategoryEgBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.13 usedAAL

```
usedAAL ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.UsedAAL;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      usedAALBehaviour;
REGISTERED AS {ts32-714Attribute 130600};

usedAALBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.14 peakCellRateIn

```
peakCellRateIn ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
```

```
      TS32-714TypeModule.PeakCellRateIn;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      peakCellRateInBehaviour;
REGISTERED AS {ts32-714Attribute 140600};

peakCellRateInBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.15 peakCellRateEg

```
peakCellRateEg ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.PeakCellRateEg;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      peakCellRateEgBehaviour;
REGISTERED AS {ts32-714Attribute 150600};

peakCellRateEgBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.16 sustainableCellRateIn

```
sustainableCellRateIn ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.SustainableCellRateIn;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      sustainableCellRateInBehaviour;
REGISTERED AS {ts32-714Attribute 160600};

sustainableCellRateInBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.17 sustainableCellRateEg

```
sustainableCellRateEg ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.SustainableCellRateEg;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      sustainableCellRateEgBehaviour;
REGISTERED AS {ts32-714Attribute 170600};

sustainableCellRateEgBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.18 maximumBurstSizeIn

```
maximumBurstSizeIn ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.MaximumBurstSizeIn;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      maximumBurstSizeInBehaviour;
REGISTERED AS {ts32-714Attribute 1870600};

maximumBurstSizeInBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.19 maximumBurstSizeEg

```
maximumBurstSizeEg ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.MaximumBurstSizeEg;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      maximumBurstSizeEgBehaviour;
REGISTERED AS {ts32-714Attribute 190600};

maximumBurstSizeEgBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.20 minimumDesiredCellRateIn

```
minimumDesiredCellRateIn ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.MinimumDesiredCellRateIn;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      minimumDesiredCellRateInBehaviour;
REGISTERED AS {ts32-714Attribute 200600};

minimumDesiredCellRateInBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.21 minimumDesiredCellRateEg

```
minimumDesiredCellRateEg ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.MinimumDesiredCellRateEg;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      minimumDesiredCellRateEgBehaviour;
REGISTERED AS {ts32-714Attribute 210600};

minimumDesiredCellRateEgBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.22 minimumCellRateIn

```
minimumCellRateIn ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.MinimumCellRateIn;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      minimumCellRateInBehaviour;
REGISTERED AS {ts32-714Attribute 220600};

minimumCellRateInBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.23 minimumCellRateEg

```
minimumCellRateEg ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.MinimumCellRateEg;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      minimumCellRateEgBehaviour;
REGISTERED AS {ts32-714Attribute 230600};
```

```
minimumCellRateEgBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.24 aTMChannelTerminationPoint-aTMPathTerminationPoint

```
aTMChannelTerminationPoint-aTMPathTerminationPoint ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.ATMChannelTerminationPoint-aTMPathTerminationPoint;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      aTMChannelTerminationPoint-aTMPathTerminationPointBehaviour;
REGISTERED AS {ts32-714Attribute 240600};

aTMChannelTerminationPoint-aTMPathTerminationPointBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.25 aTMChannelTerminationPoint-iubLink

```
aTMChannelTerminationPoint-iubLink ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.ATMChannelTerminationPoint-iubLink;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      aTMChannelTerminationPoint-iubLinkBehaviour;
REGISTERED AS {ts32-714Attribute 250600};

aTMChannelTerminationPoint-iubLinkBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.26 aTMPathTerminationPointId

```
aTMPathTerminationPointId ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.GeneralObjectId;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      aTMPathTerminationPointIdBehaviour;
REGISTERED AS {ts32-714Attribute 260600};

aTMPathTerminationPointIdBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.27 physicalPortIdList

```
physicalPortIdList ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-714TypeModule.PhysicalPortIdList;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      physicalPortIdListBehaviour;
REGISTERED AS {ts32-714Attribute 270600};

physicalPortIdListBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.3.28 aTMPathTerminationPoint-aTMChannelTerminationPoint

```
aTMPathTerminationPoint-aTMChannelTerminationPoint ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
```

```
      TS32-714TypeModule.ATMPathTerminationPoint-aTMChannelTerminationPoint;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      aTMPathTerminationPoint-aTMChannelTerminationPointBehaviour;
REGISTERED AS {ts32-714Attribute 280600};

aTMPathTerminationPoint-aTMChannelTerminationPointBehaviour BEHAVIOUR
DEFINED AS
   "This attribute is described in 3GPP TS32.712 [4].";
```

-- 6.4 Name-Binding

-- 6.4.1 transportNetworkInterface-managedElement

```
transportNetworkInterface-managedElement NAME BINDING
   SUBORDINATE OBJECT CLASS
      transportNetworkInterface;
   NAMED BY SUPERIOR OBJECT CLASS
      managedElement;
   WITH ATTRIBUTE
      aTMPathTerminationPointId;
   BEHAVIOUR
      transportNetworkInterface-managedElementBehaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-714NameBinding 10600};

transportNetworkInterface-managedElementBehaviour BEHAVIOUR
DEFINED AS
   "The name binding represents a relationship in which a managedElement montains
    and controls a Transport Network Interface. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";
```

-- 6.4.2 aTMPathTerminationPoint-transportNetworkInterface

```
aTMPathTerminationPoint-transportNetworkInterface NAME BINDING
   SUBORDINATE OBJECT CLASS
      aTMPathTerminationPoint;
   NAMED BY SUPERIOR OBJECT CLASS
      transportNetworkInterface;
   WITH ATTRIBUTE
      aTMPathTerminationPointId;
   BEHAVIOUR
      aTMPathTerminationPoint-transportNetworkInterfaceBehaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-714NameBinding 20600};

aTMPathTerminationPoint-transportNetworkInterfaceBehaviour BEHAVIOUR
DEFINED AS
      "The name binding represents a relationship in which a Transport Network Interface contains
      and controls a aTMPathTerminationPoint. When automatic instance naming is used, the choice
      of name bindings left as a local matter.";
```

-- 6.4.3 aTMChannelTerminationPoint-transportNetworkInterface

```
aTMChannelTerminationPoint-transportNetworkInterface NAME BINDING
   SUBORDINATE OBJECT CLASS
      aTMChannelTerminationPoint;
   NAMED BY SUPERIOR OBJECT CLASS
      transportNetworkInterface;
   WITH ATTRIBUTE
      aTMChannelTerminationPointId;
   BEHAVIOUR
      aTMChannelTerminationPoint-transportNetworkInterfaceBehaviour;
```

```
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-714NameBinding 30600};

aTMChannelTerminationPoint-transportNetworkInterfaceBehaviour BEHAVIOUR
DEFINED AS
   "The name binding represents a relationship in which a Transport Network Interface contains
    and controls a aTMChannelTerminationPoint. When automatic instance naming is used, the choice
    of name bindings left as a local matter.";
```

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

```
TS32-714TypeModule {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0) umts-Operation-
Maintenance(3) ts-32-714(714) informationModel(0) asn1Module(2) version10600(10600)}

DEFINITIONS IMPLICIT TAGS ::=
BEGIN

--EXPORTS everything

--IMPORTS nothing

-- 3GPP TS 32.714 related Object Identifiers

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

ts32-714               OBJECT IDENTIFIER ::= {baseNodeUMTS ts32-714(714)}
ts32-714InfoModel      OBJECT IDENTIFIER ::= {ts32-714 informationModel(0)}

ts32-714ObjectClass    OBJECT IDENTIFIER ::= {ts32-714InfoModel managedObjectClass(3)}
ts32-714Package        OBJECT IDENTIFIER ::= {ts32-714InfoModel package(4)}
ts32-714Parameter      OBJECT IDENTIFIER ::= {ts32-714InfoModel parameter(5)}
ts32-714NameBinding    OBJECT IDENTIFIER ::= {ts32-714InfoModel nameBinding(6)}
ts32-714Attribute      OBJECT IDENTIFIER ::= {ts32-714InfoModel attribute(7)}
ts32-714Action         OBJECT IDENTIFIER ::= {ts32-714InfoModel action(9)}
ts32-714Notification   OBJECT IDENTIFIER ::= {ts32-714InfoModel notification(10)}


-- Start of 3GPP SA5 own definitions

ATMChannelTerminationPointId ::= INTEGER

ATMChannelTerminationPoint-aTMPathTerminationPoint ::= GraphicString

ATMChannelTerminationPoint-iubLink ::= GraphicString

ATMPathTerminationPointId ::= INTEGER

ATMPathTerminationPoint-aTMChannelTerminationPoint ::= GraphicString

MaximumBurstSizeIn ::= INTEGER

MaximumBurstSizeEg ::= INTEGER

MinimumCellRateIn ::= INTEGER

MinimumCellRateEg ::= INTEGER

MinimumDesiredCellRateIn ::= INTEGER

MinimumDesiredCellRateEg ::= INTEGER

PeakCellRateIn ::= INTEGER

PeakCellRateEg ::= INTEGER

PhysicalInterfaceType ::= ENUMERATED
   {
   e1         (0),
   e3         (1),
   stm1       (2),
   stm4       (3),
   stm16      (4),
   stm64      (5),
   other      (255)
   }

PhysicalLinkType ::= GraphicString              --same as physicalInterfaceType

PhysicalPortId ::= GraphicalString

PhysicalPortIdList ::= SEQUENCE OF GraphicString
```

```
ServiceCategoryIn ::= ENUMERATED
   {
   cbr          (0),
   rt-vbr       (1),
   nrt-vbr      (2),
   abr          (3),
   ubr          (4),
   gfr          (5)
   }

ServiceCategoryEg ::= ENUMERATED
   {
   cbr          (0),
   rt-vbr       (1),
   nrt-vbr      (2),
   abr          (3),
   ubr          (4),
   gfr          (5)
   }

SustainableCellRateIn ::= INTEGER

SustainableCellRateEg ::= INTEGER

TransportNetworkInterfaceId ::= INTEGER

TransportNetworkType ::= ENUMERATED
   {
   atm      (0),
   ip       (1)
   }

UsageChannel ::= GraphicString     --e.g. NBAP, ALCAP, …

UsedAAL ::= ENUMERATED
   {
   aal0       (0),
   aal1       (1),
   aal2       (2),
   aal34      (3),
   aal5       (4)
   }

UserLabel ::= GraphicString

VirtualPathId ::= INTEGER

VirtualChannelId ::= INTEGER


END -- of module TS32-714TypeModule
```

Annex A (informative): List of assigned Object Identifiers

This annex provides a list with all object identifiers that have been assigned in TS 32.714. 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		
transportNetworkInterface	Name: transportNetworkInterface OID: ts32-714ObjectClass 10600	--
aTMChannelTerminationPoint	Name: aTMCHannelTerminationPoint OID: ts32-714ObjectClass 20600	--
aTMPathTerminationPoint	Name: aTMPathTerminationPoint OID: ts32-714ObjectClass 30600	--
Packages		
transportNetworkInterfaceMandatoryAttributesPackage	Name: transportNetworkInterfaceMandatoryAttributesPackage OID: ts32-714Package 10600	--
aTMChannelTerminationPointMandatoryAttributesPackage	Name: aTMChannelTerminationPointMandatoryAttributesPackage OID: ts32-714Package 20600	--
aTMChannelTerminationPointOptionalAttributesPackage1	Name: aTMChannelTerminationPointOptionalAttributesPackage1 OID: : ts32-714Package 30600	--
aTMChannelTerminationPointOptionalAttributesPackage2	Name: aTMChannelTerminationPointOptionalAttributesPackage1 OID: : ts32-714Package 40600	--
aTMChannelTerminationPointOptionalAttributesPackage3	Name: aTMChannelTerminationPointOptionalAttributesPackage1 OID: : ts32-714Package 50600	--
aTMChannelTerminationPointOptionalAttributesPackage4	Name: aTMChannelTerminationPointOptionalAttributesPackage1 OID: : ts32-714Package 60600	---
aTMChannelTerminationPointOptionalAttributesPackage5	Name: aTMChannelTerminationPointOptionalAttributesPackage1 OID: : ts32-714Package 70600	--
aTMChannelTerminationPointOptionalAttributesPackage6	Name: aTMChannelTerminationPointOptionalAttributesPackage1 OID: : ts32-714Package 80600	--
aTMPathTerminationPointMandatoryAttributesPackage	Name: aTMPathTerminationPointMandatoryAttributesPackage OID: ts32-714Package 90600	--
Actions		
--	--	--
Notifications		
--	--	--
Attributes		
aTMChannelTerminationPointId	Name: aTMChannelTerminationPointId OID: ts32-714Action 40600	--

aTMChannelTerminationPoint-aTMPathTerminationPoint	Name: aTMChannelTerminationPoint-aTMPathTerminationPoint OID: ts32-714Action 240600	--
aTMChannelTerminationPoint- iubLink	Name: aTMChannelTerminationPoint-iubLink OID: ts32-714Action 250600	--
aTMPathTerminationPointId	Name: aTMPathlTerminationPoint OID: ts32-714Action 260600	--
aTMPathTerminationPoint-aTMChannelTerminationPoint	Name: aTMPathTerminationPoint-aTMChannelTerminationPoint OID: ts32-714Action 280600	--
maximumBurstSizeIn	Name maximumBurstSizeIn OID: ts32-714Action 180600	--
maximumBurstSizeEg	Name: maximumBurstSizeEg OID: ts32-714Action 190600	--
minimumCellRateIn	Name: minimumCellRateIn OID: ts32-714Action 220600	--
minimumCellRateEg	Name: minimumCellRateEg OID: ts32-714Action 230600	--
minimumDesiredCellRateIn	Name: minimumDesiredCellRateIn OID: ts32-714Action 200600	--
minimumDesiredCellRateEg	Name: minimumDesiredCellRateEg OID: ts32-714Action 210600	--
peakCellRateIn	Name: peakCellRateIn OID: ts32-714Action 140600	--
peakCellRateEg	Name: peakCellRateEg OID: ts32-714Action 150600	--
physicalInterfaceType	Name: physicalInterfaceType OID: ts32-714Action 100600	--
physicalLinkType	Name: physicalLinkType OID: ts32-714Action 90600	--
physicalPortId	Name: physicalPortId OID: ts32-714Action 80600	--
physicalPortIdList	Name: physicalPortIdList OID: ts32-714Action 270600	--
serviceCategoryIn	Name: serviceCategoryIn OID: ts32-714Action 110600	--
serviceCategoryEg	Name: serviceCategoryEg OID: ts32-714Action 120600	--
sustainableCellRateIn	Name: sustainableCellRateIn OID: ts32-714Action 16600	--
sustainableCellRateEg	Name: sustainableCellRateEg OID: ts32-714Action 17600	--
transportNetworkInterfaceId	Name: transportNetworkInterfaceId OID: ts32-714Action 10600	--
transportNetworkType	Name: transportNetworkType OID: ts32-714Action 30600	--
usageChannel	Name: usageChannel OID: ts32-714Action 50600	--
usedAAL	Name: usedAAL OID: ts32-714Action 120600	--
userLabel	Name: userLabel OID: ts32-714Action 20600	--
virtualChannelId	Name: a virtualChannelId OID: ts32-714Action 70600	--
virtualPathId	Name: virtualPathId OID: ts32-714Action 60600	--
Parameters		
--	--	--
Name Bindings		
transportNetworkInterface-managedElement	Name: transportNetworkInterface-managedElement OID: ts32-714NameBinding 10600	--
aTMPathTerminationPoint-transportNetworkInterface	Name: aTMPathTerminationPoint-transportNetworkInterface OID: ts32-714NameBinding 20600	--
aTMChannelTerminationPoint-transportNetworkInterface	Name: aTMChannelTerminationPoint-transportNetworkInterface OID: ts32-714NameBinding 30600	--

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Dec 2004	S_26	SP-040818	--	--	Submitted to SA#26 for Approval	1.0.0	