3GPP TS 32.714 V6.0.0 (2004-12)

**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
UMTS, management, 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:

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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: ts32-714 Action 240600	--
aTMChannelTerminationPoint- iubLink	Name: aTMChannelTerminationPoint-iubLink OID: ts32-714 Action 250600	--
aTMPathTerminationPointId	Name: aTMPathTerminationPoint OID: ts32-714 Action 260600	--
aTMPathTerminationPoint-aTMChannelTerminationPoint	Name: aTMPathTerminationPoint-aTMChannelTerminationPoint OID: ts32-714 Action 280600	--
maximumBurstSizeIn	Name maximumBurstSizeIn OID: ts32-714 Action 180600	--
maximumBurstSizeEg	Name: maximumBurstSizeEg OID: ts32-714 Action 190600	--
minimumCellRateIn	Name: minimumCellRateIn OID: ts32-714 Action 220600	--
minimumCellRateEg	Name: minimumCellRateEg OID: ts32-714 Action 230600	--
minimumDesiredCellRateIn	Name: minimumDesiredCellRateIn OID: ts32-714 Action 200600	--
minimumDesiredCellRateEg	Name: minimumDesiredCellRateEg OID: ts32-714 Action 210600	--
peakCellRateIn	Name: peakCellRateIn OID: ts32-714 Action 140600	--
peakCellRateEg	Name: peakCellRateEg OID: ts32-714 Action 150600	--
physicalInterfaceType	Name: physicalInterfaceType OID: ts32-714 Action 100600	--
physicalLinkType	Name: physicalLinkType OID: ts32-714 Action 90600	--
physicalPortId	Name: physicalPortId OID: ts32-714 Action 80600	--
physicalPortIdList	Name: physicalPortIdList OID: ts32-714 Action 270600	--
serviceCategoryIn	Name: serviceCategoryIn OID: ts32-714 Action 110600	--
serviceCategoryEg	Name: serviceCategoryEg OID: ts32-714 Action 120600	--
sustainableCellRateIn	Name: sustainableCellRateIn OID: ts32-714 Action 16600	--
sustainableCellRateEg	Name: sustainableCellRateEg OID: ts32-714 Action 17600	--
transportNetworkInterfaceId	Name: transportNetworkInterfaceId OID: ts32-714 Action 10600	--
transportNetworkType	Name: transportNetworkType OID: ts32-714 Action 30600	--
usageChannel	Name: usageChannel OID: ts32-714 Action 50600	--
usedAAL	Name: usedAAL OID: ts32-714 Action 120600	--
userLabel	Name: userLabel OID: ts32-714 Action 20600	--
virtualChannelId	Name: a virtualChannelId OID: ts32-714 Action 70600	--
virtualPathId	Name: virtualPathId OID: ts32-714 Action 60600	--
Parameters		
--	--	--
Name Bindings		
transportNetworkInterface-managedElement	Name: transportNetworkInterface-managedElement OID: ts32-714 NameBinding 10600	--
aTMPathTerminationPoint-transportNetworkInterface	Name: aTMPathTerminationPoint-transportNetworkInterface OID: ts32-714 NameBinding 20600	--
aTMChannelTerminationPoint-transportNetworkInterface	Name: aTMChannelTerminationPoint-transportNetworkInterface OID: ts32-714 NameBinding 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	6.0.0