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**Universal Mobile Telecommunications System (UMTS);  
LTE;  
Telecommunication management;  
Transport Network (TN)  
interface Network Resource Model (NRM)  
Integration Reference Point (IRP);  
Information Service (IS)  
(3GPP TS 28.732 version 18.2.0 Release 18)**



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**Reference**

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**Keywords**

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# Foreword

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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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# Introduction

The present document is part of a TS-family covering the 3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

28.731: Transport Network (TN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Requirements.

**28.732: Transport Network (TN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS).**

28.733: Transport Network (TN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions.

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# 1 Scope

The present document specifies the Transport Network (TN) interface Network Resource Model (NRM) that can be communicated between an IRP Agent and an IRP Manager for telecommunication network management purposes, including management of converged networks.

This document specifies the semantics and behaviour of information object class attributes and relations visible across the reference point in a protocol and technology neutral way. It does not define their syntax and encoding.

The "Transport Network (TN) Interface Network Resource Model (NRM) IRP" comprises a set of specifications defining Requirements, a protocol neutral Network Resource Model (NRM) and corresponding Solution Set(s).

The present document:

- Specifies the protocol neutral Transport Network (TN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS). It reuses relevant parts of the generic NRM in TS 28.622 [6], either by direct reuse or sub-classing, and in addition to that defines Transport specific Managed Object Classes.

The Configuration Management (CM) area is very large. The intention is to split the specification of the related interfaces in several IRPs - as described in the Introduction clause above. An important aspect of such a split is that the Network Resource Models (NRMs) defined in different IRPs containing NRMs are consistent, and that NRMs supported by an IRP Agent implementation can be accessed as one coherent model through one IRP Information Service.

In order to access the information defined by this NRM, an IRP Information Service (IS) is needed, such as the Basic CM IRP: IS (TS 32.602 [7]) or the Bulk CM IRP: IS (TS 32.612 [8]). However, which Information Service that is applicable is outside the scope of this document.

Finally, regarding the support of the State Management IRP: IS (TS 28.625 [16]), all NRM's of one release shall support the same State Management IRP version.

This specification is related to 3GPP TS 28.625 [16].

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# 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*.

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- [1] 3GPP TS 32.101: "Telecommunication Management, Principles and high level requirements".
- [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [3] Void.
- [4] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [5] ITU-T Recommendation I.361 (11/95): "B-ISDN ATM Layer Specification".
- [6] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

- [7] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP) Information Service (IS)".
- [8] 3GPP TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".
- [9] 3GPP TS 25.430: "UTRAN Iub interface:general aspects and principles".
- [10] 3GPP TS 25.431: "UTRAN Iub interface Layer 1".
- [11] 3GPP TS 25.411: "UTRAN Iu interface Layer 1".
- [12] 3GPP TS 28.652:" UTRAN Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS) ".
- [13] 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".
- [14] 3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)".
- [15] 3GPP TS 32.662: "Telecommunication management; Configuration Management (CM); Kernel CM Information Service (IS)".
- [16] 3GPP TS 28.625: "Telecommunication management; State Management Integration Reference Point (IRP): Information Service (IS)".
- [17] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) concept and definitions".

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following definitions and abbreviations apply. For definitions and abbreviations not found here, please refer to 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.150 [17] and 3GPP TS 28.622 [6].

**Association:** See definition in TS 28.622 [6].

**Network Resource Model (NRM):** See definition in TS 28.622 [6].

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.150 [17] and the following apply:

|       |   |
|-------|---|
| DN    | Distinguished Name (see 3GPP TS 32.300 [4])                     |
| IOC   | Information Object Class  |
| IRP   | Integration Reference Point                                     |
| ITU-T | International Telecommunication Union, Telecommunication Sector |
| Iub   | Interface between RNC and Node B                                |
| NRM   | Network Resource Model  |
| RDN   | Relative Distinguished Name (see 3GPP TS 32.300 [4])            |
| RNC   | Radio Network Controller  |
| UML   | Unified Modelling Language                                      |

# 4 Model

## 4.1 Imported information entities and local labels

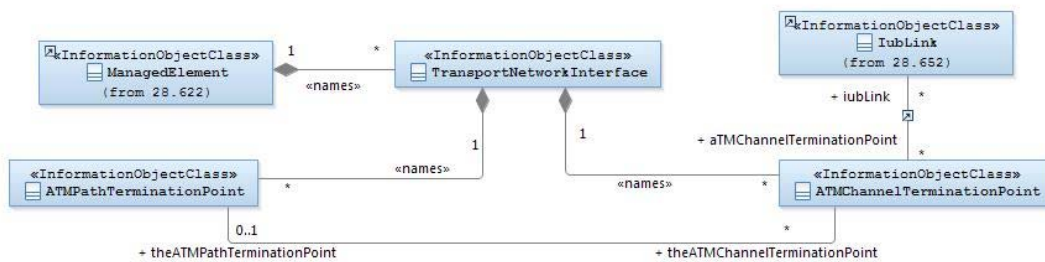
| Label reference                          | Local label     |
|--|-----------------|
| 3GPP TS 28.622 [6], IOC, ManagedElement  | ManagedElement  |
| 3GPP TS 28.652 [12], IOC, IubLink        | IubLink         |
| 3GPP TS 28.622 [6], IOC, VsDataContainer | VsDataContainer |

## 4.2 Class diagram

### 4.2.1 Relationships

This clause depicts the set of classes (e.g. IOCs) that encapsulates information relevant for this IRP. This subclause provides the overview of the relationships of relevant classes in UML. Subsequent subclasses provide more detailed specification of various aspects of these classes.

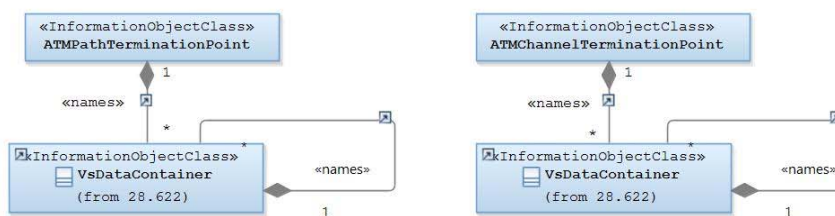
Figure 4.2.1.1 shows the name-containment relation and other types of relations of the Transport Network NRM.



**Figure 4.2.1.1: Transport Network NRM Containment/Naming and Association diagram**

Each IOC is identified with a Distinguished Name (DN) according to 3GPP TS 32.300 [4] that expresses its containment hierarchy. As an example, the DN of a IOC representing a `ATMPPathTerminationPoint` could have a format like:

`SubNetwork=Sweden,meContext=MEC-Gbg-1,ManagedElement=RNC-Gbg-1, TransportNetworkInterface=ATM-1, ATMPPathTerminationPoint=Gbg-1.`



NOTE 1: The listed cardinality numbers represent transient as well as steady-state numbers, and reflect all managed object creation and deletion scenarios.

**Figure 4.2.1.2: vsDataContainer in name-containment diagram**



## 4.2.2 Inheritance

This subclause depicts the inheritance relationships that exist between IOCs.

Figure 4.2.2.1 shows the inheritance hierarchy for the Transport Network NRM.

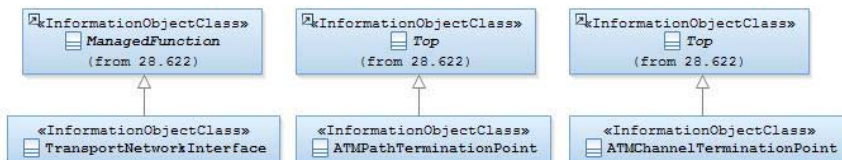


Figure 4.2.2.1: Transport Network NRM Inheritance Hierarchy

## 4.3 Class definitions

### 4.3.1 TransportNetworkInterface

#### 4.3.1.1 Definition

This IOC represents the Transport Network Interface technology (e.g. ATM, IP).

#### 4.3.1.2 Attributes

| Attribute name       | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------------|-------------------|------------|------------|-------------|--------------|
| transportNetworkType | M                 | M          | -          | -           | M            |

#### 4.3.1.3 Attribute constraints

None.

#### 4.3.1.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.2 ATMChannelTerminationPoint

#### 4.3.2.1 Definition

This IOC represents a bi-directional ATM Virtual Channel Connection Termination Point.

### 4.3.2.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| usageChannel                     | M                 | M          | -          | -           | M            |
| virtualPathId                    | M                 | M          | O          | -           | M            |
| virtualChannelId                 | M                 | M          | O          | -           | M            |
| physicalPortId                   | M                 | M          | O          | -           | M            |
| physicalInterfaceType            | M                 | M          | O          | -           | M            |
| serviceCategoryIn                | M                 | M          | O          | -           | M            |
| ServiceCategoryEg                | M                 | M          | O          | -           | M            |
| usedAAL                          | M                 | M          | O          | -           | M            |
| peakCellRateIn                   | M                 | M          | O          | -           | M            |
| peakCellRateEg                   | M                 | M          | O          | -           | M            |
| sustainableCellRateIn            | O                 | M          | O          | -           | M            |
| sustainableCellRateEg            | O                 | M          | O          | -           | M            |
| maximumBurstSizeIn               | M                 | M          | O          | -           | M            |
| maximumBurstSizeEg               | M                 | M          | O          | -           | M            |
| minimumDesiredCellRateIn         | O                 | M          | O          | -           | M            |
| minimumDesiredCellRateEg         | O                 | M          | O          | -           | M            |
| minimumCellRateIn                | O                 | M          | O          | -           | M            |
| minimumCellRateEg                | O                 | M          | O          | -           | M            |
| <b>Attribute related to role</b> |                   |            |            |             |              |
| theATMPATHTerminationPoint       | M                 | M          | -          |             |              |
| theIubLink                       | M                 | M          | -          |             |              |

### 4.3.2.3 Attribute constraints

| Name   | Definition  |
|--|---|
| virtualPathId, virtualChannelId, physicalPortId, physicalInterfaceType, serviceCategoryIn/Eg, usedAAL, peakCellRateIn/Eg, sustainableCellRateIn/Eg, and maximumBurstSizeIn/Eg<br>O Write qualifier | The Write Qualifier shall be supported if these attributes can be set over ltf-N. |
| sustainableCellRateIn/Eg, maximumBurstSizeIn/Eg  | Only applicable for ServiceCategory values RT-VBR, NRT-VBR.                       |
| minimumCellRateIn/Eg   | Only applicable for Service Category values ABR, GFR.                             |

### 4.3.2.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.3 ATMPATHTerminationPoint

### 4.3.3.1 Definition

This IOC represents a bi-directional ATM Virtual Path Connection Termination Point.

### 4.3.3.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritetable | isInvariant | isNotifiable |
|----------------------------------|-------------------|------------|--------------|-------------|--------------|
| virtualPathId                    | M                 | M          | O            | -           | M            |
| physicalPortIdList               | M                 | M          | O            | -           | M            |
| peakCellRateIn                   | M                 | M          | O            | -           | M            |
| peakCellRateEg                   | M                 | M          | O            |             |              |
| <b>Attribute related to role</b> |                   |            |              |             |              |
| theATMChannelTerminationPoint    | M                 | M          | -            | -           | M            |

NOTE: The attribute peakCellRateIn, peakCellRateEg of ATM Path is the maximum Peak Cell Rate of its channels.

### 4.3.3.3 Attribute constraints

| Name   | Definition  |
|--|---|
| for attributes virtualPathId, physicalPortIdList, peakCellRateIn, peakCellRateEg O Write qualifier | The Write Qualifier shall be supported if these attributes can be written/set over Itf-N. |

### 4.3.3.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.4 Attribute definitions

### 4.4.1 Attribute properties

The following table defines the attributes that are present in several IOCs of the present document.

| Attribute Name       | Documentation and Allowed Values  | Properties   |
|----------------------|---|--|
| transportNetworkType | The type of underlying transport network, i.e. ATM, IP.<br>allowedValues: ATM, IP   | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| usageChannel         | The logical channel using the transport network connection.<br>Ref. 3GPP TS 25.430 [9].<br>allowedValues: examples are "lub-NBAP", "lub-ALCAP". | type: String<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False          |
| virtualPathId        | The ATM Virtual Path Identifier (VPI).<br>Ref. ITU-T Recommendation I.361[5].<br>allowedValues: N/A   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| virtualChannelId     | The ATM Virtual Channel Identifier (VCI).<br>Ref. ITU-T Recommendation I.361 [5].<br>allowedValues: N/A   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| physicalPortIdList   | The list of identifiers of the ATM physical port containing termination points.<br>allowedValues: N/A   | type: String<br>multiplicity: 1..*<br>isOrdered: False<br>isUnique: True<br>defaultValue: None<br>isNullable: False    |
| physicalPortId       | The identifier of the ATM physical port containing termination points.<br>allowedValues: N/A  | type: String<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False          |

| Attribute Name        | Documentation and Allowed Values  | Properties  |
|-----------------------|---|---|
| physicalInterfaceType | The ATM physical interface type.<br>Ref. 3GPP TS 25.431[10], 3GPP TS 25.411[11].<br>allowedValues: Examples are 'E1', 'STM1'.   | type: String<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| serviceCategoryIn     | The ATM Service Category used for the virtual connection Ingress (incoming) traffic.<br>Ref. ITU-T Recommendation I.361[5].<br>allowedValues: CBR, RT-VBR, NRT-VBR, ABR, UBR, GFR | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False |
| serviceCategoryEg     | The ATM Service Category used for the virtual connection Egress (outgoing) traffic.<br>Ref. ITU-T Recommendation I.361[5]<br>allowedValues: CBR, RT-VBR, NRT-VBR, ABR, UBR, GFR   | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False |
| usedAAL               | The ATM Adaptation Layer (AAL) used for the virtual connection.<br>Ref. ITU-T Recommendation I.361[5].<br>allowedValues: Null, AAL1,.....   | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False |
| peakCellRateIn        | Peak Cell Rate (PCR) in kbits/sec for Ingress traffic.<br>Ref. ITU-T Recommendation I.361 [5].<br>allowedValues: N/A  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False        |
| peakCellRateEg        | Peak Cell Rate (PCR) in kbits/sec for Egress traffic.<br>Ref. ITU-T Recommendation I.361 [5].<br>allowedValues: N/A   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False        |
| sustainableCellRateIn | Sustainable Cell Rate (SCR) in kbits/sec for Ingress traffic.<br>Ref. ITU-T Recommendation I.361 [5].<br>allowedValues: 1...n   | type: Integer<br>Multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False         |
| sustainableCellRateEg | Sustainable Cell Rate (SCR) in kbits/sec for Egress traffic.<br>Ref. ITU-T Recommendation I.361 [5].<br>allowedValues: 1...n  | type: Integer<br>Multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False         |
| maximumBurstSizeIn    | Maximum Burst Size (MBS) for VBR Service Categories for Ingress traffic.<br>Ref. ITU-T Recommendation I.361 [5].<br>allowedValues: 1...n  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False         |

| Attribute Name                | Documentation and Allowed Values   | Properties   |
|-------------------------------|--|--|
| maximumBurstSizeEg            | Maximum Burst Size (MBS) for VBR Service Categories for Egress traffic.<br><br>Ref. ITU-T Recommendation I.361 [5].<br><br>allowedValues: 1..n                     | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False                        |
| minimumCellRateIn             | Minimum Cell Rate (MCR) in kbits/sec for ABR, GFR Service Categories for Ingress traffic.<br><br>Ref. ITU-T Recommendation I.361 [5].<br><br>allowedValues: 1..n   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False                        |
| minimumCellRateEg             | Minimum Cell Rate (MCR) in kbits/sec for ABR, GFR Service Categories for Egress traffic.<br><br>Ref. ITU-T Recommendation I.361 [5].                               | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>allowedValues: 1..n<br>isNullable: False |
| minimumDesiredCellRateIn      | Minimum Desired Cell Rate (MDCR) in kbits/sec for UBR Service Category for Ingress traffic.<br><br>Ref. ITU-T Recommendation I.361 [5].<br><br>allowedValues: 1..n | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False                        |
| minimumDesiredCellRateEg      | Minimum Desired Cell Rate (MDCR) in kbits/sec for UBR Service Category for Egress traffic.<br><br>Ref. ITU-T Recommendation I.361 [5].<br><br>allowedValues: 1..n  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: N/A<br>isNullable: False                        |
| <b>Role-Attribute Name</b>    |  |  |
| theATMChannelTerminationPoint | It carries zero or more DNs of ATMChannelTerminationPoint.<br><br>allowedValues: N/A<br><br>Null value means no DN is carried.                                     | type: DN<br>multiplicity: *<br>isOrdered: False<br>isUnique: True<br>defaultValue: None<br>isNullable: False                         |
| theATMPATHTerminationPoint    | It carries zero or one DN of ATMPATHTerminationPoint.<br><br>allowedValues: N/A<br><br>Null value means no DN is carried.  | type: DN<br>multiplicity: 0..1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False                         |
| theIubLink                    | It carries zero or more DNs of IubLink.<br><br>allowedValues: N/A<br><br>Null value means no DN is carried.  | type: DN<br>multiplicity: *<br>isOrdered: False<br>isUnique: True<br>defaultValue: None<br>isNullable: False                         |

#### 4.4.2 Constraints

None.

## 4.5 Common notifications

### 4.5.1 Alarm notifications

This subclause presents a list of notifications, defined in [13], that IRPManager can receive. The notification header attribute `objectClass/objectInstance`, defined in [14], would capture the DN of an instance of an IOC defined in this IRP specification.

| Name  | Qualifier                             | Notes |
|---|---------------------------------------|-------|
| <code>notifyAckStateChanged</code>          | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |
| <code>notifyChangedAlarm</code>             | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |
| <code>notifyClearedAlarm</code>             | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |
| <code>notifyNewAlarm</code>                 | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |
| <code>notifyComments</code>                 | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |
| <code>notifyAlarmListRebuilt</code>         | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |
| <code>notifyPotentialFaultyAlarmList</code> | See Alarm IRP (3GPP TS 32.111-2 [13]) |       |

### 4.5.2 Configuration notifications

This subclause presents a list of notifications, defined in [15], that IRPManager can receive. The notification header attribute `objectClass/objectInstance`, defined in [14], would capture the DN of an instance of an IOC defined in this IRP specification.

| Name                                    | Qualifier | Notes |
|---|-----------|-------|
| <code>notifyAttributeValueChange</code> | O         |       |
| <code>notifyObjectCreation</code>       | O         |       |
| <code>notifyObjectDeletion</code>       | O         |       |

# Annex A (informative): Example Configuration of ATM Transport Network in UTRAN

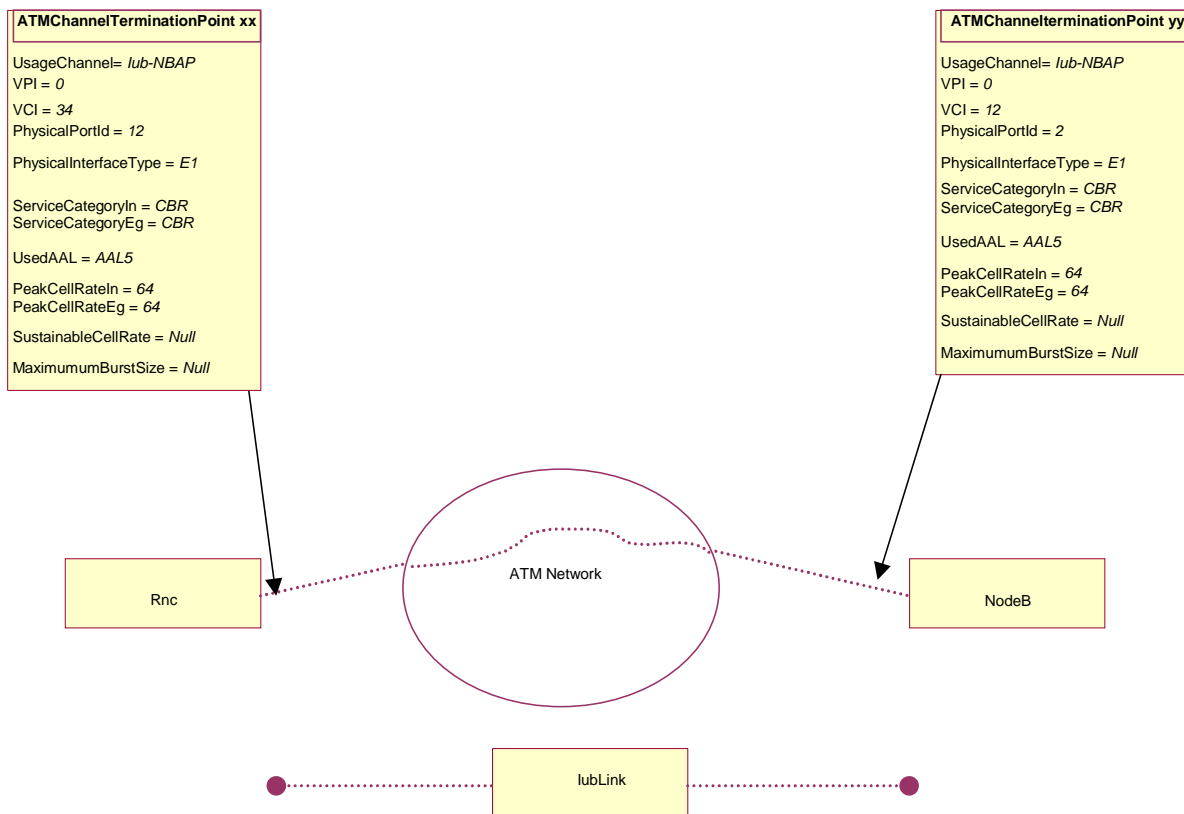


Figure A.1: Virtual connection of a logical Iub interface channel over ATM network

## Annex B (informative): Change history

| Change history |       |           |     |     |   |     |        |               |
|----------------|-------|-----------|-----|-----|---|-----|--------|---------------|
| Date           | TSG # | TSG Doc.  | CR  | Rev | Subject/Comment                                     | Cat | Old    | New           |
| 2013-09        | SA#61 | SP-130433 | 001 | 1   | Removal of wrong and redundant modelling statements | F   | 11.0.0 | 11.1.0        |
| 2014-06        | SA#64 | SP-140358 | 002 | -   | remove the feature support statements               | F   | 11.1.0 | 11.2.0        |
| 2014-10        | -     | -         | -   | -   | Update to Rel-12 version (MCC)                      |     | 11.2.0 | <b>12.0.0</b> |
| 2016-01        | -     | -         | -   | -   | Update to Rel-13 version (MCC)                      |     | 12.0.0 | <b>13.0.0</b> |

| Change history |         |           |      |     |     |  |               |  |
|----------------|---------|-----------|------|-----|-----|--|---------------|--|
| Date           | Meeting | TDoc      | CR   | Rev | Cat | Subject/Comment  | New version   |  |
| 2016-12        | SA#74   | SP-160854 | 0003 | -   | F   | Correct the usage of isNullable and multiplicity property  | 13.1.0        |  |
| 2017-03        | SA#75   | -         | -    | -   | -   | Promotion to Release 14 without technical change   | 14.0.0        |  |
| 2018-01        | SA#78   | SP-170962 | 0006 | 1   | A   | Update erroneous references  | 14.1.0        |  |
| 2018-06        | -       | -         | -    | -   | -   | Update to Rel-15 version (MCC)   | 15.0.0        |  |
| 2020-07        | -       | -         | -    | -   | -   | Update to Rel-16 version (MCC)   | 16.0.0        |  |
| 2022-03        | -       | -         | -    | -   | -   | Update to Rel-17 version (MCC)   | <b>17.0.0</b> |  |
| 2024-04        | -       | -         | -    | -   | -   | Update to Rel-18 version (MCC)   | <b>18.0.0</b> |  |
| 2024-06        | SA#104  | SP-240817 | 0014 | 1   | A   | Rel-18 CR TS 28.732 correction of attribute definition – the first change could not be implemented due to wrong baseline | <b>18.1.0</b> |  |
| 2024-09        | SA#105  | SP-241177 | 0023 | -   | A   | Rel-18 CR TS 28.732 correction of attribute definition   | <b>18.2.0</b> |  |



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# History

| <b>Document history</b> |              |             |
|-------------------------|--------------|-------------|
| V18.0.0                 | May 2024     | Publication |
| V18.1.0                 | July 2024    | Publication |
| V18.2.0                 | October 2024 | Publication |
|                         |              |             |
|                         |              |             |