

**Source:** SA5  
**Title:** R99 CRs to Configuration Management; (32.106-series)  
**Document for:** Approval  
**Agenda Item:** 7.5.3

Doc-1st-Level	Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Workitem
SP-010284	S5-010331	32.106-5	003		R99	Correction of R99 filter definition which is inconsistent with the CORBA SS	F	3.1.0	3.2.0	OAM-CM
SP-010284	S5-010335	<b>32.106-5</b>	<b>004</b>		R99	Correction of UTRAN attributes	F	3.1.0	3.2.0	OAM-CM
SP-010284	S5-010336	<b>32.106-7</b>	<b>003</b>		R99	Correction of UTRAN attributes	F	3.1.0	3.2.0	OAM-CM
SP-010284	S5-010337	<b>32.106-6</b>	<b>009</b>		R99	Correction of UTRAN attributes	F	3.1.0	3.2.0	OAM-CM
SP-010284	S5-010231	32.106-6	008		R99	Reposition "#pragma prefix" directive	F	3.1.0	3.2.0	OAM-CM
SP-010284	S5-010338	32.106-8	001		R99	Correct errors in DN name convention for Managed Objects	F	3.1.0	3.2.0	OAM-CM

#### Dependency of CRs

item	Doc-2nd-Level	Spec	CR	Condition for CR approval
<b>A</b>	S5-010335	32.106-5	004	
<b>B</b>	S5-010337	32.106-6	009	only when <b>A</b> above is approved
<b>C</b>	S5-010336	32.106-7	003	only when <b>A</b> above is approved

## CHANGE REQUEST

⌘ **32.106-5 CR 003** ⌘ rev **-** ⌘ Current version: **3.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of R99 filter definition which is inconsistent with the CORBA SS.		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘	<b>Date:</b>	⌘ 01/06/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>	

<b>Reason for change:</b>	⌘ The filter definition in the operation getMoAttributes of the Basic CM IRP IS (in 32.106-5) is inconsistent with the corresponding CORBA SS (32.106-6) filter definition. The CORBA SS defines a filter which is 'empty' (returns "TRUE"), while the filter definition in the IS requires a specific filter. This is due to the fact that when the CORBA SS was finally reviewed for R99 at meeting #18, the CM group could not reach an agreement on the CORBA definition of the filter. Therefore, the only way to reach agreement on the CORBA SS for R99 was to "remove" the filter i.e. make it empty/transparent. In that process, it was not detected that the IS document was inconsistent with that change. Thus, the only realistic solution to this inconsistency now, is to correct the IS to also allow for an empty filter in the CORBA SS.
<b>Summary of change:</b>	⌘ Keep the filter parameter of the operation getMoAttributes as a Mandatory parameter, but describe its value as an optional recommendation for the SS to follow.
<b>Consequences if not approved:</b>	⌘ The IS and the CORBA SS will be inconsistent, leading to confusion for CORBA SS vendors/designers and risk for errors in the implementation.

<b>Clauses affected:</b>	⌘ 6.2.2.1, table 1.		
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications	⌘ <input type="checkbox"/>	⌘ <input type="checkbox"/>
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
<b>Other comments:</b>	⌘		

**Table 1: Parameters of getMoAttributes**

<b>Name</b>	<b>Qualifier</b>	<b>Description</b>
baseObjectInstance	Input, M	The MO where the search starts. This is a full Distinguished Name according to 3GPP TS 32.106-8 [13].
scope	Input, M	This parameter defines how many levels of the containment hierarchy to search (i.e. apply the filter defined below). The search starts from the MO given by the baseObjectInstance parameter. The levels of search that may be performed are: <ul style="list-style-type: none"> <li>• the base object alone (default);</li> <li>• the n-th level subordinates of the base object;</li> <li>• the base object and all of its subordinates down to and including the n-th level;</li> <li>• the base object and all of its subordinates.</li> </ul>
filter	Input, M	This parameter defines a filter test to be applied to the scoped Managed Object(s). If the filter is empty, all of the managed objects included by the scope are selected. The actual syntax and capabilities of the filter is Solution Set specific. However, each Solution Set <u>should</u> support a filter consisting of one or several assertions that may be grouped using the logical operators AND, OR and NOT. Each assertion is a logical expression of attribute existence, attribute value comparison ("equal to X, less than Y" etc.) and MO Class.
attributeListIn	Input, M	This parameter identifies the attributes to be returned by this operation. In R99, only the semantics "Return all attributes" shall be supported. An empty list means "Return all attributes". For future releases the possibility to specify a list of attributes is expected.
managedObjectClass	Output, M	For each returned MO: The class of the MO.
managedObjectInstance	Output, M	For each returned MO: The name of the MO. This is a full Distinguished Name according to 3GPP TS 32.106-8 [13].
attributeListOut	Output, M	For each returned MO: A list of name/value pairs for the MO attributes.
status	Output, M	(a) Operation succeeded, or (b) Operation failed because of specified or unspecified reason.

## CHANGE REQUEST

⌘ **32.106-5 CR 004** ⌘ rev **-** ⌘ Current version: **3.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of UTRAN attributes		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 01/06/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

<b>Reason for change:</b>	⌘ 1. The change for the alignment of the object model to the UTRAN architecture was not complete.
<b>Summary of change:</b>	⌘ Correction of the name of the association AssociatedWith-1 to AssociatedWith. The AssociatedWith should become mandatory.
<b>Consequences if not approved:</b>	⌘ The specification is not consistent. A risk for not maintaining multivendor over Itf-N.

<b>Clauses affected:</b>	⌘ 6.4.2.4 and 6.4.3.2		
<b>Other specs affected:</b>	⌘ <input type="checkbox"/>	Other core specifications	⌘ CR32.106-6-009_S5-010337-UTRANmodel. CR32.106-7-003_S5-010336-UTRANmodel.
	<input type="checkbox"/>	Test specifications	
	<input checked="" type="checkbox"/>	O&M Specifications	
<b>Other comments:</b>	⌘		

#### 6.4.2.4 MOC IubLink

The 'Iub link' managed object is the logical link to a NodeB as seen from the RNC. For more information about the RNC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

**Table 1: Attributes of IubLink**

Name	Qualifier	Description
iubLinkId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-ONLY, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
iubLink-UtranCell	READ-ONLY, <u>0M</u>	The value of this attribute shall be a list of the DN(s) of the related UtranCell instance(s). This is a reference attribute modelling the role (of the association AssociatedWith-4) that this IubLink is associated with 0-N UtranCells.
iubLink-NodeBFunction	READ-ONLY, M	The value of this attribute shall be the DN of the related NodeBFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this IubLink is connected to 0-1 NodeBFunction.

**Table 2: Notifications of IubLink**

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

### 6.4.3.2 Association AssociatedWith-1 (OM)

This bi-directional association models the relationship between the IubLink and UtranCell. It has two roles, named IubLink-UtranCell and UtranCell-IubLink. These two roles model each MOC's association with the other MOC. This association is optional, but under the condition that at least one of the associations AssociatedWith-1 and AssociatedWith-2 shall be present in each instance of Utran Cell. Each role is in the MOC definition mapped to a reference attribute with the same name.

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-6 CR 008** ⌘ rev **-** ⌘ Current version: **3.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Reposition "#pragma prefix" directive		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 06/02/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

<b>Reason for change:</b>	⌘ To avoid potential CORBA name clashes.  This CR modifies the position of the "#pragma prefix" directive in Basic Configuration Management IRP CORBA IDL in 32.106-6 Annex A & Annex B.
<b>Summary of change:</b>	⌘ "#pragma prefix" directive must be located <b>after</b> all "#include" directives.  Currently, "#pragma prefix" directive is located before the "#include" directive which may cause the intended effect of the "#pragma prefix" directive to be ignored.  By moving the "#pragma prefix" directive <b>after</b> the "#include" directive, we <b>force</b> the effects of the "#pragma prefix" directive to be used.
<b>Consequences if not approved:</b>	⌘ Current position of "#pragma prefix" poses an <b>interworking problems between Agent and Manager when different development tools are used.</b>

<b>Clauses affected:</b>	⌘ Annex A, Annex B	
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
<b>Other comments:</b>	⌘	

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## Annex A (normative): CORBA IDL, Access Protocol

```
#ifndef BasicCmIRPSystem_idl
#define BasicCmIRPSystem_idl

| #pragma prefix "3gppsa5.org"

#include "CommonIRPConstDefs.idl"

| #pragma prefix "3gppsa5.org"

module BasicCmIRPSystem
{

    /**
```



---

## Annex B (normative): CORBA IDL, Notification Definitions

```
#ifndef NotificationDefs_idl
#define NotificationDefs_idl

| #pragma prefix "3gppsa5.org"

#include <TimeBase.idl>           // CORBA Time Service
#include <NotificationIRPConstDefs.idl>

| #pragma prefix "3gppsa5.org"

module BasicCmIRPSystem
{

    module NotificationDefs
    {

        /**
```

## CHANGE REQUEST

⌘ **32.106-6 CR 009** ⌘ rev **-** ⌘ Current version: **3.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of UTRAN attributes		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 01/06/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

<b>Reason for change:</b>	⌘ The change for the alignment of the object model to the UTRAN architecture was not complete.
<b>Summary of change:</b>	⌘ The AssociatedWith should become mandatory.
<b>Consequences if not approved:</b>	⌘ The specification is not consistent with 32.106-5. A risk for not maintaining multivendor over ltf-N.

<b>Clauses affected:</b>	⌘ 6.5.2.4	
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
<b>Other comments:</b>	⌘ This CR is dependent on the approval of CR32.106-5-004_S5-010335-UTRANmodel.	

## 6.5.2.4 MOC IubLink

**Table 21: Mapping from NRM MOC IubLink attributes and associations to SS equivalent MOC IubLink attributes**

<b>NRM Associations/Attributes of MOC IubLink in 3GPP TS 32.106-5 [4]</b>	<b>SS Attributes</b>	<b>SS Type</b>	<b>Qualifier</b>
iubLinkId	iubLinkId	string	Read-Only, M
userLabel	userLabel	string	Read-Only, M
AssociatedWith/ iubLink-UtranCell	iubLinkUtranCell	BasicCmIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, <u>OM</u>
ConnectedTo/ iubLink-NodeBFunction	iubLinkNodeBFunction	BasicCmIRPSystem::AttributeTypes::MOReference	Read-Only, M

## CHANGE REQUEST

⌘ **32.106-7 CR 003** ⌘ rev **-** ⌘ Current version: **3.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of UTRAN attributes		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 01/06/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

<b>Reason for change:</b>	⌘ To align the Basic CM IRP CMIP SS (32.106-7) with the changes in 32.106-5 according to the CR in S5C010137.
<b>Summary of change:</b>	⌘ The attribute "iubLinkUtranCellLink" becomes mandatory.
<b>Consequences if not approved:</b>	⌘ The specification is not consistent. A risk for not maintaining multivendor over ltf-N.

<b>Clauses affected:</b>	⌘ 5.1, 5.2 and 5.6		
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
<b>Other comments:</b>	⌘ This CR is dependent on the approval of CR32.106-5-004_S5-010335-UTRANmodel.		

## 5.1 Managed Object Classes (MOCs)

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### **iubLink** MANAGED OBJECT CLASS

DERIVED FROM managedFunction;

CHARACTERIZED BY

iubLinkBasicPackage,

iubLinkMandatoryAssociationPackage;

CONDITIONAL PACKAGES

~~iubLinkOptionalAssociationPackage~~ PRESENT IF

~~“the attribute IubLink-UtranCell of MOC IubLink defined in 3GPP TS 32.106-5 is supported by an instance of this class.”;~~

REGISTERED AS {ts32-106-7BCMObjectClass 11};

.....

## 5.2 Packages

.....

### **iubLinkMandatoryAssociationPackage** PACKAGE

BEHAVIOUR

iubLinkMandatoryAssociationPackageBehaviour;

ATTRIBUTES

iubLinkNodeBFunctionLink GET;

iubLinkUtranCellLink GET;

REGISTERED AS {ts32-106-7BCMPackage 9};

### ~~**iubLinkOptionalAssociationPackage** PACKAGE~~

~~BEHAVIOUR~~

~~iubLinkOptionalAssociationPackageBehaviour;~~

~~ATTRIBUTES~~

~~iubLinkUtranCellLink~~ GET;

~~REGISTERED AS {ts32-106-7BCMPackage 10};~~

.....

## 5.6 Behaviours

.....

### **iubLinkMandatoryAssociationPackageBehaviour** BEHAVIOUR

DEFINED AS

"The attribute 'iubLinkNodeBFunctionLink' points to the nodeBFunction instance which this iubLink instance connects to. The attribute 'iubLinkUtranCellLink' points from an iubLink to a list of utranCell.";

.....

### ~~**iubLinkOptionalAssociationPackageBehaviour** BEHAVIOUR~~

~~DEFINED AS~~

~~"This package defines an attribute implementing the association XXX, pointing from an iubLink to a list of utranCell, defined in 32.106-5. This is an optional package. An instance of utranCell has to be associated by an iubLink instance by using this package or/and associated by an nodeBFunction by using the package nodeBOptionalAssociationPackage.";~~

.....

## CHANGE REQUEST

⌘ **32.106-8 CR 001** ⌘rev **-** ⌘ Current version: **3.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correct errors in DN name convention for Managed Objects		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 01/06/2001
<b>Category:</b>	⌘ F	<b>Release:</b>	⌘ R99
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)  R96 (Release 1996)  R97 (Release 1997)  R98 (Release 1998)  R99 (Release 1999)  REL-4 (Release 4)  REL-5 (Release 5)</p>	

<b>Reason for change:</b>	⌘ Firstly, Annex A has references to specific MOCs in 32.106-5, and those MOC names are no longer valid. Secondly, the current specification uses a restriction in naming (that MOC names can't start with 'IRP') that is no longer valid. Thirdly, the Distinguished Name examples in Annex B have wrong use of upper and lower case.
<b>Summary of change:</b>	⌘ Remove direct references to MOCs in Annex A - use rules instead. Remove the restriction that MOC names can't start with 'IRP'. Correct the casing in the Annex B examples.
<b>Consequences if not approved:</b>	⌘ The IRPManager and IRPAgent, given a Distinguished Name, may think that the given DN is referring to different managed object instance.

<b>Clauses affected:</b>	⌘ 7.1.3, Annex A, Annex B	
<b>Other specs affected:</b>	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
<b>Other comments:</b>	⌘	

### 7.1.3 Converting AttributeTypeAndValue

The AttributeTypeAndValue is encoded as the string representation of the AttributeType, followed by an equals character ('=', ASCII 61), followed by the string representation of the AttributeValue.

If the AttributeType is published in Table A.1 of Annex A, then the type name string from that table is used.

If the AttributeType is not in the published table, implementation is free to use any string as long as the string does not begin with "IRP".

Although X.500 ASN.1 AttributeValue and AttributeType support wide range of character representation, this specification supports a restrictive set of characters according to subclause 7.2.

String representation of AttributeValue allows character escape mechanism such as the use of a backslash followed by two hex digits to replace a character in a string. String representation of AttributeType does not allow character escape mechanism.

EXAMPLE: "CN=Before\0DAfter,O=Test,C=GB. In this example, the backslash and the two hex digits form a single byte in the code of the escaped character. The backslash followed by "0D" indicates a carriage return. See Annex B for a rule for MO designers to avoid ambiguity concerning the AttributeType of a DN string.



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## Annex B (normative): Rule for MO Designers regarding `AttributeType` interpretation

NOTE: This annex is normative for users of string representation.

This annex discusses the two possible interpretations for the `AttributeType` of the DN string and recommends a rule for MO designers to avoid ambiguity concerning its usage. It identifies the protocol environment(s) under which each interpretation functions. It then recommends a rule for designing MO classes such that one DN string, regardless of protocol environment (therefore, regardless of interpretation used), will result in the unique reference to the identical network resource.

### First interpretation

ITU-T Recommendation X.500 [2] uses the `AttributeType` (defined for use as the first component of the `AttributeTypeAndValue` of a RDN, see subclause 3.1.6) to identify one attribute of the subject MO for naming purpose. This `AttributeType` is called the *naming attribute* to distinguish itself from other attributes that may be present in the MO.

Suppose the following is the MO class definition in pseudo notation and this MO class is inherited from root.

```
Class Bsc {
    Attribute id;
    Attribute ..}
```

Suppose further that the naming attribute is `id`.

If this (first) interpretation is used for constructing the DN string, then the DN will be "... , id=123". MO class name cannot be derived from the DN string. The value of the `AttributeValue` contains the value of the naming attribute.

### Second interpretation

In CORBA protocol environment, it is preferable to use the following interpretation.

The `AttributeType` (defined for use as the first component of the `AttributeTypeAndValue` of a RDN) is used to identify the MO class.

If this interpretation is used for constructing the DN string, then the DN will be "... , Bsc=123". The name of the naming attribute cannot be derived from the DN string. The value of the `AttributeValue` contains the value of the naming attribute.

### Rule

Given the two interpretations, a DN reader cannot know how to interpret the `AttributeType`, i.e. if the `AttributeType` identifies class or naming attribute. To avoid ambiguity, the following rules shall apply:

- If `AttributeType` of a naming attribute is not a concatenation of MO class name and "Id", then the DN writer shall use "... , yyy.zzz =123,.." where "yyy" is the MO class name and "zzz" is the naming attribute. For example, if "Bsc" is the MO class name and if its naming attribute is "SerialNumber", then the DN shall be "... , Bsc.SerialNumber=123,..".
- If `AttributeType` of a naming attribute is a concatenation of MO class name and "Id", then the DN writer shall use "... , xxx=123,.." where "xxx" is the MO class name. For example, if "Bsc" is the MO class name and if its naming attribute is "BscId", then the DN shall be "... , Bsc=123,..".
- If `AttributeType` of a naming attribute is not a concatenation of MO class name and "Id" (ignoring case for both), then the DN shall use "... , Yyy.zzz =123,.." where "Yyy" is the MO class name and "zzz" is the naming attribute (preserving case for both). For example, if "Bsc" is the MO class name and if its naming attribute is "serialNumber", then the DN shall be "... , Bsc.serialNumber=123,..".

- If AttributeType of a naming attribute is a concatenation of MO class name and "Id" (ignoring case for both), then the DN shall use "...Xxx=123,.." where "Xxx" is the MO class name (preserving case). For example, if "Bsc" is the MO class name and if its naming attribute is "bScId", then the DN shall be "...Bsc=123,..".

## Annex A (normative): Mapping of RDN `AttributeType` to Strings

NOTE: This annex is normative for users of string representation.

`AttributeType` of RDN are mapped into strings for use in the DN string representation. This annex specifies the mapping.

The `AttributeType` shall include all MO classes defined in the Network Resource- Model (NRM) of 3G TS 32.106-5 [9].

There is one `AttributeType` that is not defined in NRM of 3G TS 32.106-5 [9]. This special `AttributeType` is used to denote the domain component of the DNS. The following partial DN string representations are examples to illustrate the valid use of “DC” strings for the three DNS domain components of “lme . companyZ . se”.

- `DC=se . companyZ . lme , . .`
- `DC=se , DC=companyZ , DC=lme , . .`
- `DC=se , DC=companyZ . lme , . .`
- `DC=se . companyZ , DC=lme , . .`

**Table A.1: Example of RDN `AttributeType` Strings**

String	AttributeType
DC	Domain component of DNS
<code>G3SubNetwork</code>	MO class name <code>G3SubNetwork</code> defined in NRM of 3G TS 32.106-5 [9].
<code>ManagedElement</code>	MO class name <code>ManagedElement</code> defined in NRM of 3G TS 32.106-5 [9].
<code>Cell</code>	MO Class name <code>Cell</code> defined in NRM of 3G TS 32.106-5 [9].
etc.	Other MO class names as defined in NRM or product-specific NRM (extension to standard NRM). See note.

Note: For each MO class name found in 3GPP set of specifications, its corresponding `AttributeType` String shall be identical to the class name with the leading character capitalised.