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TECHNICAL SPECIFICATION

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Universal Mobile Telecommunications System (UMTS);**

LTE;

Telecommunication management;

Configuration Management (CM);

Bulk CM Integration Reference Point (IRP):

Information Service (IS)

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Foreword

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Introduction

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

32.611: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Requirements".

32.612: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".

32.616: "Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Solution Set (SS) definitions".

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Element (NEs) and network resources, and they may be initiated by the operator or by functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimisation programme (e.g. modifications), and to maintain the overall Quality of Service. The CM actions are initiated either as a single actions on single NEs of the 3G network or as part of a complex procedure involving actions on many resources/objects in one or several NEs.

1 Scope

The present document (Bulk Configuration Management IRP: Information Service) defines a number of Integration Reference Point (IRP) through which an 'IRPAgent' (typically an Element Manager or Network Element) can communicate bulk Configuration Management related information to one or several 'IRPManagers' (typically Network Managers).

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 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)".
- [4] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- [5] 3GPP TS 32.642: "Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- [6] 3GPP TS 32.652: "Telecommunication management; Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- [7] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [8] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".
- [9] 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".
- [10] 3GPP TS 32.632: "Telecommunication management; Configuration Management (CM); Core Network Resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- [11] 3GPP TS 32.692 "Inventory Management (IM) network resource Integration Reference Point (IRP): Network Resource Model (NRM)".
- [12] Void
- [13] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".
- [14] 3GPP TS 32.712: "Telecommunication management; Configuration Management (CM); Transport Network (TN) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".
- [15] Void

[16]	Void
[17]	Void
[18]	Void
[19]	Void
[20]	Void
[21]	Void
[22]	Void
[23]	3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
[24]	3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [24], 3GPP TS 32.101 [1], 3GPP TS 32.102 [2] and 3GPP TS 32.600 [8] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [24], 3GPP TS 32.101 [1], 3GPP TS 32.102 [2] and 3GPP TS 32.600 [8].

Association: Association used to model relationships between Managed Objects.

NOTE 1: Associations can be implemented in several ways, such as:

- 1) name bindings,
- 2) reference attributes, and
- 3) association objects.

NOTE 2: This IRP stipulates that containment associations shall be expressed through name bindings, but it does not stipulate the implementation for other types of associations as a general rule. These are specified as separate entities in the object models (UML diagrams). However, all (non-containment) associations are modelled, by means of reference attributes of the participating MOs.

Element Manager (EM): provides a package of end-user functions for management of a set of closely related types of Network Elements (NEs).

NOTE 3: These functions can be divided into two main categories:

- *Element Management Functions* for management of NEs on an individual basis. These are basically the same functions as supported by the corresponding local terminals.
- *Sub-Network Management Functions* that are related to a network model for a set of NEs constituting a clearly defined sub-network, which may include relations between the NEs. This model enables additional functions on the sub-network level (typically in the areas of network topology presentation, alarm correlation, service impact analysis and circuit provisioning).

Integration Reference Point (IRP): See 3GPP TS 32.150 [6].

IRP Information Service (IS): See 3GPP TS 32.101 [1].

IRP Network Resource Model (NRM): See 3GPP TS 32.101 [1].

IRP Solution Set (SS): See 3GPP TS 32.101 [1].

Managed Element (ME): An instance of the Managed Object Class G3ManagedElement/ManagedElement.

Managed Object (MO): software object that encapsulates the manageable characteristics and behaviour of a particular network resource.

NOTE 4: The MO is instance of a MO class defined in a MIM/NRM. An MO class has attributes that provide information used to characterize the objects that belong to the class (the term "attribute " is taken from TMN and corresponds to a "property " according to CIM). Furthermore, a MO class can have operations that represent the behaviour relevant for that class (the term "operation " is taken from TMN and corresponds to a "method " according to CIM). An MO class may support notifications that provide information about an event occurrence within a network resource.

Managed Object Class (MOC): a description of all the common characteristics for a number of MOs, such as their attributes, operations, notifications and behaviour.

Managed Object Instance (MOI): an instance of a MOC, which is the same as a MO as described above.

Management Information Base (MIB): A MIB is an instance of an NRM and has some values on the defined attributes and associations specific for that instance.

NOTE 5: a MIB consist of (1) a Name space (describing the MO containment hierarchy in the MIB through Distinguished Names), (2) a number of Managed Objects with their attributes and (3) a number of Associations between these MOs. Also note that TMN (X.710 [7]) defines a concept of a Management Information Tree (also known as a Naming Tree) that corresponds to the name space (containment hierarchy) portion of this MIB definition. Figure 3.1 depicts the relationships between a Name space and a number of participating MOs (the shown association is of a non-containment type)

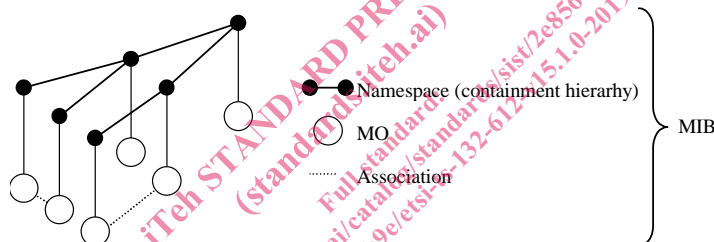


Figure 3.1: Relationships between a Name space and a number of participating MOs

Management Information Model (MIM): Also referred to as NRM – see the definition below. There is a slight difference between the meaning of MIM and NRM – the term MIM is generic and can be used to denote any type of management model, while NRM denotes the model of the actual managed telecommunications network resources .

Name space: A name space is a collection of names.

NOTE 6: The IRP name convention [7] restricts the name space to a hierarchical containment structure, including its simplest form - the one-level, flat name space. All Managed Objects in a MIB shall be included in the corresponding name space and the MIB/name space shall only support a strict hierarchical containment structure (with one root object). A Managed Object that contains another is said to be the superior (parent); the contained Managed Object is referred to as the subordinate (child). The parent of all MOs in a single name space is called a Local Root. The ultimate parent of all MOs of all managed systems is called the Global Root.

Network resource : See definition in 3GPP TS 28.622 [23].

Network Resource Model (NRM): See definition in 3GPP TS 28.622 [23].

Operator: is either a human being controlling and managing the network; or a company running a network (the 3G network operator).

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [24] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [24].

CM	Configuration Management
MO	Managed Object
MOC	Managed Object Class
MOI	Managed Object Instance
PM	Performance Management

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4 System Overview

4.1 System Context

The general definition of the System Context for the present IRP is found in 3GPP TS 32.150 [13] subclause 4.7.

In addition, the set of related IRP(s) relevant to the present IRP is shown in the two diagrams below.

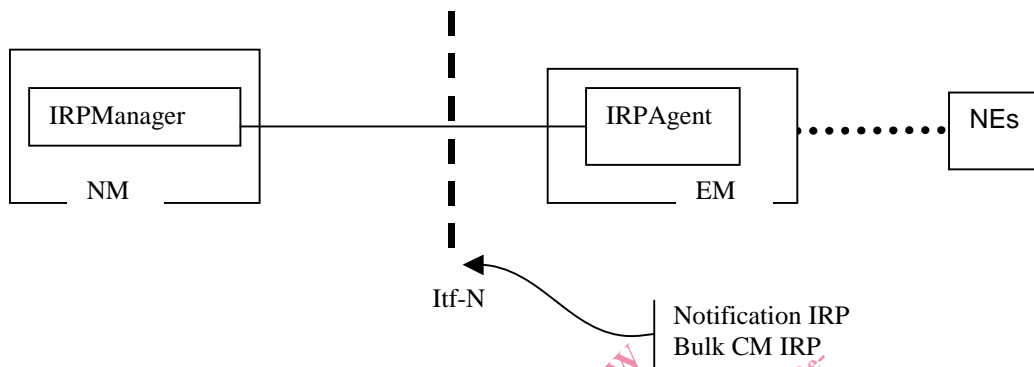


Figure 4.1: System Context A

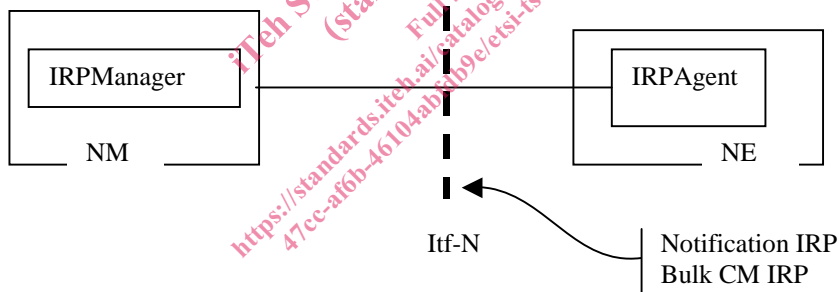


Figure 4.2: System Context B