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Contents

Foreword

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Introduction

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 Elements (NEs) and Network Resources (NRs), 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 (QoS). The CM actions are initiated either as 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.

Background

Traditionally, multiple name conventions have been used by different vendors' NEs, or even within the same vendor, to name network resources. The following problems have thus arisen:

- Different classes of NE have used different name conventions. Network Management applications, when interfacing with these NEs, have been required to understand multiple name conventions to manage the NEs.
- Network management applications (e.g. Fault Management application), when interfacing with other applications (e.g. Configuration Management application, trouble ticket system) have been required to understand multiple name conventions.
- When a customer purchased multiple classes of NEs from the same or different vendors, the customer was confronted with multiple name conventions.
- Without a name convention, it is difficult to integrate IRP conformant vendors' resource name space (see subclause 3.1.5 for definition of name space) into the customer's Enterprise name space.

Benefits

The benefits of using the subject name convention to name 3G network resources for network management purposes are as follows:

- A resource name is guaranteed to be unambiguous in that it refers to, at most, one network resource. Unambiguous naming of managed network resources is necessary for interoperability among managing applications and systems.

- The resource name syntax is specified such that management applications can be designed with assurance that its name-parsing algorithm needs not be modified in the future. We can derive this benefit only if the subject name convention is widely accepted.

The root and upper portions of the name hierarchy are based on name infrastructure of Domain Name System (DNS) (see IETF RFC 2247 [5]). The subject name convention can naturally fit in DNS and can integrate well with other hierarchical naming systems, such as ITU-T Recommendation X.500 [2].

1 Scope

A more detailed background and introduction of the IRP concept is given in 3GPP TS 32.150 [16].

To perform network management tasks, co-operating applications require identical interpretation of names assigned to network resources under management. Such names are required to be unambiguous as well. The present document recommends one name convention for network resources under management in the IRP context.

To facilitate integration of network management information obtained via multiple IRPs based on different IRP Solution Set technologies, identical network resource name semantics shall be conveyed in all IRPs. The present document specifies one such name convention.

The present document also specifies an IOC/MOC name recommendation (see annex E) in order to avoid potential problems with valid characters in some programming languages.

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.
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[1] Void.

[2] ITU-T Recommendation X.500 (1993): "Information technology - Open Systems Interconnection - The Directory: Overview of concepts, models and services".

[3] T. Howes, ISBN 1-57870-070-1: "Understanding and Deploying LDAP Directory Services".

[4] IETF RFC 1737 (1994): "Functional Requirements for Uniform Resource Names".

[5] IETF RFC 2247 (1998): "Using Domains in LDAP/X.500 Distinguished Names".

[6] IETF RFC 1035 (1987): "Domain names - implementation and specification".

[7] IETF RFC 2253 (1997): "Lightweight Directory Access Protocol (v3): UTF-8 String Representation of Distinguished Names".

[8] 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".

[9] 3GPP TS 32.622: " Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

[10] Void.

[11] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".

[12] 3GPP TS 32.102: "Telecommunication management; Architecture".

[13] ISO/IEC 14977: "Information technology – Syntactic metalanguage – Extended BNF".

[14] ISO/IEC 646: "Information technology – ISO 7-bit coded character set for information interchange".