ETSI TS 132 301 V10.0.0 (2011-04)

Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
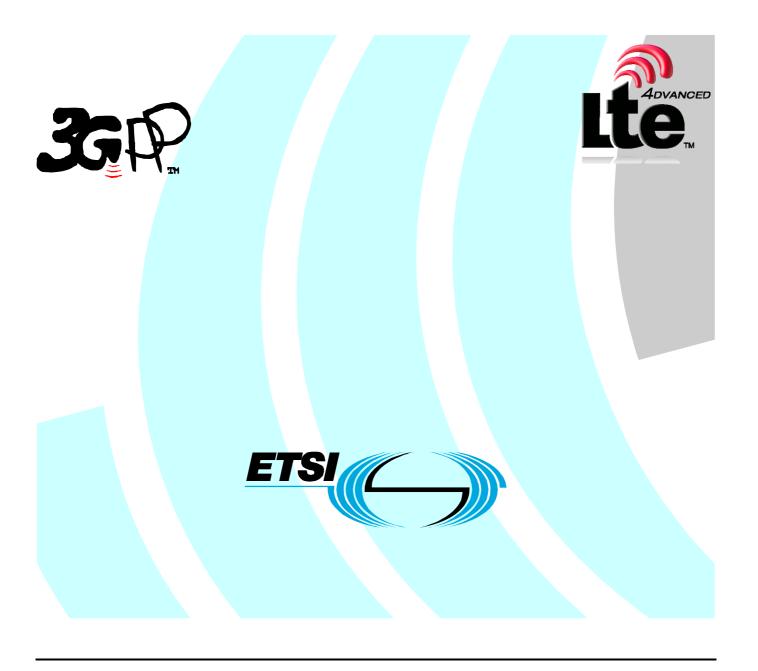**LTE;**
Telecommunication management;
Configuration Management (CM);
Notification Integration Reference Point (IRP);
Requirements
(3GPP TS 32.301 version 10.0.0 Release 10)

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Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

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:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

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.

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:

32.301: **Configuration Management (CM); Notification Integration Reference Point (IRP): Requirements**

32.302: Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)

32.306: Configuration Management (CM); Notification Integration Reference Point (IRP): Solution Set (SS) definitions

The Itf-N interface is built up by a number of Integration Reference Points (IRPs) and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

Network Elements (NEs) under management and element managers generate notifications of events about occurrences within the network. Different kinds of events carry different kinds of information. For instance a new alarm as specified in Alarm IRP: Information Service [3], is one possible kind of event, an object creation as specified in Basic CM IRP: Information Service [4] is another possible kind of event.

Information of an event is carried in notification. An IRPAgent (typically an EM or a NE) emits notifications. IRPManager (typically a network management system) receives notifications. The purpose of Notification IRP is to define an interface through which an IRPManager can subscribe to IRPAgent for receiving notifications.

This IRP bases its design on work captured in ITU-T Recommendation X.734 [5], OMG Notification Service [6]. The central design ideas are:

- Separation of notification Consumers (IRPManagers) from Producers (IRPAgents);

- Notifications are sent to IRPManagers without the need for IRPManagers to periodically check for new notifications.

Common characteristics related to notifications in all other IRPs are gathered in one IRP.

1 Scope

The purpose of Notification IRP is to define an interface through which an IRPManager can subscribe to an IRPAgent for receiving notifications. The present document is the "Requirements" of Notification IRP. It defines, for the purpose of subscribing to an IRPAgent for receiving notifications, the basic requirements that shall be fulfilled on Itf-N.

How IRPManager discovers the IRPAgent's address or reference (so that IRPManager can invoke an operation) is outside the scope of the present document.

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 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".

[4]   3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP): Information Service (IS)".

[5]   ITU-T Recommendation X.734: "Information technology - Open Systems Interconnection - Systems Management: Event report management function".

[6]   OMG: "OMG Notification Service".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Element Manager (EM): See 3GPP TS 32.101 [1].

IRPAgent: See 3GPP TS 32.102 [2].

IRPManager: See 3GPP TS 32.102 [2].

Network Manager (NM): See 3GPP TS 32.101 [1].

3.2   Abbreviations

For the purposes of the present document, the following abbreviations apply:

CM	Configuration Management
CORBA	Common Object Request Broker Architecture
EM	Element Manager
FM	Fault Management
IRP	Integration Reference Point
ITU-T	International Telecommunication Union - Telecommunication
MIB	Management Information Base
NE	Network Element
NR	Network Resource
OMG	Object Management Group
OS	Operations System
TM	Telecom Management
UMTS	Universal Mobile Telecommunications System

4   Notification management functions over Itf-N

4.1   Notification mechanism subscription functions

The IRPAgent shall provide IRPManagers with the capabilities to subscribe and unsubscribe to the notification mechanism. An IRPManager shall be able to specify the types of notifications IRPAgent should emit to IRPManager during subscription, to specify filtering criteria that shall be applied by the notification mechanism. An IRPManager shall be able to subscribe several times in order to include in a subscription different types of notifications. An IRPManager shall also be able to request multiple subscriptions, which is equivalent, from the IRPAgent perspective, to multiple IRPManagers each providing one subscription.

4.2   Subscription control functions

The IRPAgent may provide to IRPManagers capabilities to control its subscriptions. An IRPManager may then be able to check whether its subscription is still active or not, to know the details of a particular subscription and to know the list of all subscriptions it has opened.

4.3   Notification control functions

In principle, notifications are forwarded to the IRPManagers as soon as they are available. The real-time forwarding of these notifications occurs via appropriate filtering mechanisms ("discriminators" on CMIP interfaces, "subscription" on CORBA interfaces) in accordance with ITU-T Recommendation X.734 [5] or OMG event/notification service. Any IRPManager may be able to set and change filter criteria applicable during the life-cycle of one if its subscriptions in order to ensure that only the notifications which fulfil pre-defined criteria are sent.. An IRPManager may also be able to enable and disable the emission of notifications corresponding to its subscriptions.

4.4   Function to discover notification capabilities

The IRPAgent may provide IRPManagers with a capability to discover the IRPs supported by the IRPAgent that are capable of sending notifications through the notification IRP. Those IRPs shall be identified with their version.

4.5 Generic notification header

Notifications are emitted by the notification IRP. Those notifications can be defined in any other IRP (e.g. a notification for a new alarm as specified in 3GPP TS 32.111-2 [3] Alarm IRP: Information Service). It is required that all notifications emitted by the notification IRP support the same header that contains enough information to identify the type of notification, the resource at the origin of the notification and the time of the notification.

Annex A (informative):
Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Jun 2001	S_12	SP-010283	--	--	Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0
Mar 2002	--	--	--	--	Cosmetics (changed styles/field codes on cover/page headings)	4.0.0	4.0.1
Mar 2002	S_15	--	--	--	Automatic upgrade to Rel-5 (no CR)	4.0.1	5.0.0
Dec 2002	--	--	--	--	Cosmetics	5.0.0	5.0.1
Mar 2004	S_23	SP-040105	--	--	Automatic upgrade to Rel-6 (no CR)	5.0.1	6.0.0
Jun 2005	--	--	--	--	Introduction update : added 32.305 new TS-family member	6.0.0	6.0.1
Jun 2007	SA_36	--	--	--	Automatic upgrade to Rel-7 (no CR) at freeze of Rel-7. Deleted reference to CMIP SS, discontinued from R7 onwards.	6.0.1	7.0.0
Dec 2008	SA_42	--	--	--	Upgrade to Release 8	7.0.0	8.0.0
Dec 2009	-	-	-	-	Update to Rel-9 version (MCC)	8.0.0	9.0.0
Mar 2011	-	-	-	-	Update to Rel-10 version (MCC)	9.0.0	10.0.0

History

Document history		
V10.0.0	April 2011	Publication