
Source: SA5 (Telecom Management)
Title: Draft Rel-6 TS 32141 v100 Telecommunication management; Services operations management; Subscription management architecture
Document for: Information
Agenda Item: 7.5.3

Presentation of Technical Specification to TSG SA

Presentation to: TSG SA Meeting #19
Document for presentation: TS 32.141, Version 1.0.0
Presented for: Subscription management architecture
Information

Abstract of document:

This Technical specification defines the architecture for Subscription Management.

The **3G** environment requires more complex service delivery mechanisms and is **no longer simply an internal matter for a single operator** but a capability that is achieved by linking together features across multiple Service Providers and Operators.

Subscription Management is a feature that permits Service Providers, Value Added Service Providers, and Mobile Operators to provision services for a specific subscriber.

Subscription Management is necessary to allow Service Providers and Operators **to provision, control, monitor and bill the configuration of services** that they offer to their subscribers.

Outstanding Issues:

More work needs to be done to understand the **inter-relationship** between **Generic User Profile (GUP)** and **Subscription Management**.

Contentious Issues:

None.

3GPP TS 32.141 V1.0.0 (2003-03)

Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Telecommunication Management;
Services operations management;
Subscription management architecture
(Release 6)**



The present document has been developed within the 3rd Generation Partnership Project (3GPPTM) and may be further elaborated for the purposes of 3GPP.

The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented. This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification. Specifications and reports for implementation of the 3GPPTM system should be obtained via the 3GPP Organizational Partners' Publications Offices.

Keywords

UMTS, service, Telecomm Management

3GPP

Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

<http://www.3gpp.org>

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© 2003, 3GPP Organizational Partners (ARIB, CWTS, ETSI, T1, TTA, TTC).
All rights reserved.

Contents

Foreword	4
Introduction	4
1 Scope	5
2 References	5
3 Definitions and abbreviations	5
3.1 Definitions	5
3.2 Abbreviations	6
4 Subscription Management Architecture	6
4.1 Functional Entities	6
4.2 Interfaces	7
4.2.1 Relationship of Irtf-N to GUP Rp Interface	7
4.3 Overview of IRP	8
4.3.1 IRP Security	8
Annex A (informative): Change history	9

Foreword

This Technical Specification 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 3G environment requires more complex service delivery mechanisms and is no longer simply an internal matter for a single operator but a capability that is achieved by linking together features across multiple service providers and operators. Subscription Management is a feature that permits Service Providers, Value Added Service Providers, and Mobile Operators to provision services for a specific subscriber. The feature is necessary to allow service providers and operators to provision, control, monitor and bill the configuration of services that they offer to their subscribers.

For further detail please refer to Subscription management requirements document that gives an overview of Subscription management in addition to release 6 requirements [5].

1 Scope

The present document defines the architecture for Subscription management.

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 TR 21.905: "Vocabulary for 3GPP Specifications".
 - [2] 3GPP TS 23.002: "Network Architecture (Release 5)".
 - [3] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
 - [4] 3GPP TS 32.102: "Telecommunication management; Architecture".
 - [5] 3GPP TS 32.140: "Telecommunication management; Services operations management; Subscription management requirements".
 - [6] 3GPP TS 23.008: "Organization of subscriber data".
 - [7] 3GPP TS 22.240: "Service requirements for the 3GPP Generic User Profile (GUP); Stage 1".
 - [8] 3GPP TS 23.240: "3GPP Generic User Profile (GUP); Stage 2; Architecture".
-

3 Definitions and abbreviations

3.1 Definitions

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

subscriber: See 3GPP TR 21.905 [1].

service: See 3GPP TR 21.905 [1].

Integration Reference Point (IRP): See 3GPP TS 32.101 [3].

user: See 3GPP TR 21.905 [1].

subscription: See 3GPP TR 21.905 [1].

Subscription management: See 3GPP TR 32.140 [5].

Subscription Profile: See 3GPP TR 32.140 [5].

Subscription Profile Component: See 3GPP TR 32.140 [5].

3.2 Abbreviations

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

2G	Second Generation Mobile
3G	Third Generation Mobile
API	Application Programming Interface
ASP	Application Service Provider
AuC	Authentication Center
B2B	Business to Business
CS	Circuit Switch
EIR	Equipment Identity Register
GTT	Global Text Telephony
GUP	Generic User Profile
HE	Home Environment
HLR	Home Location Register
HSS	Home Subscriber Server
IMS	IP Multimedia Subsystem
IRP	Integration Reference Point (3GPP TS 32.102 [4])
ISP	Internet Service Provider
NPDB	Number Portability Data Base
OAM	Operations, Administration and Maintenance
OSA	Open Services Access
OSF	Operations System Functions
OSS	Operations Support System
PS	Packet Switch
SLA	Service Level Agreement
SOM	Service Operation Management
SP	Service Provider
SuM	Subscription Management
TMN	Telecommunication Management Network
TR-IRP	Trading Partner IRP
UICC	Universal Integrated Circuit Card
USIM	Universal Subscriber Identity Module
VASP	Value Added Service Provider
VHE	Virtual Home Environment
VNO	Virtual Network Operator

4 Subscription Management Architecture

3G Telecommunication Management focuses on the most important and strategic contexts in the physical architecture for the management of UMTS. The framework to help define a telecom management physical architecture for a planned UMTS and to adopt standards and provide products that are easy to integrate is defined in 3GPP TS 32.102 [4].

Subscription Management manages Subscription Profile Components stored in network resources for the purpose of providing services to specific subscribers. This is done with an architecture that is consistent with the one specified in 3GPP TS 32.102 [4].

Subscription Profiles represent services and are associated to subscribers that employ these services (3GPP TS 32.140 [5]). To the extent the HSS controls certain services, Subscription Profile Components can be associated with the HSS. Other services, and as a result Subscription Profiles Components, are outside the jurisdiction of the HSS.

4.1 Functional Entities

Editor's Note: Needs to be aligned to new section on, Functional entities, in 3GPP TS 32.140. Clause 6 of 3GPP TS 32.140 will contain new entities diagram for release 6 "Functional Entities"

4.2 Interfaces

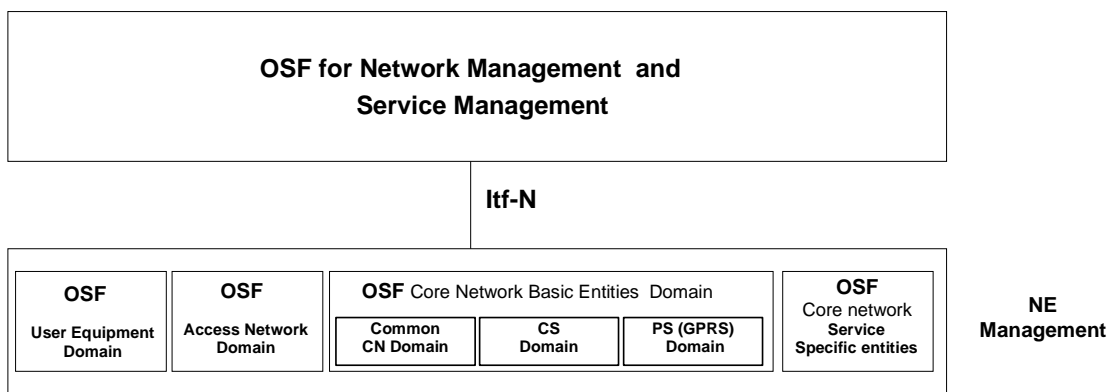


Figure 1: Overview of UMTS Telecom Management Domains and Itf-N (3GPP TS 32.102 [4])

The Itf-N for Subscription Management is realized by means of an Integration Reference Point (IRP) as defined in 3GPP TS 32.102 [4].

OSF functionality can be realized in NEs or in the NE Management systems. Subscription Management, for this release, is concerned with the OSF functionality contained in the Core Network Basic Entities Domain and specifically that of the Common CN Domain. Subscription Profile Components are located in the NEs OSF's within the Common CN Domain or their NEs OSF's in the NE management systems, and are in either case accessed consistent with the IRP concept. Subscription management OSF's for Network Management and Service Management (NM/SM OSFs) are located in network- and service management systems.

4.2.1 Relationship of Itf-N to GUP Rp Interface

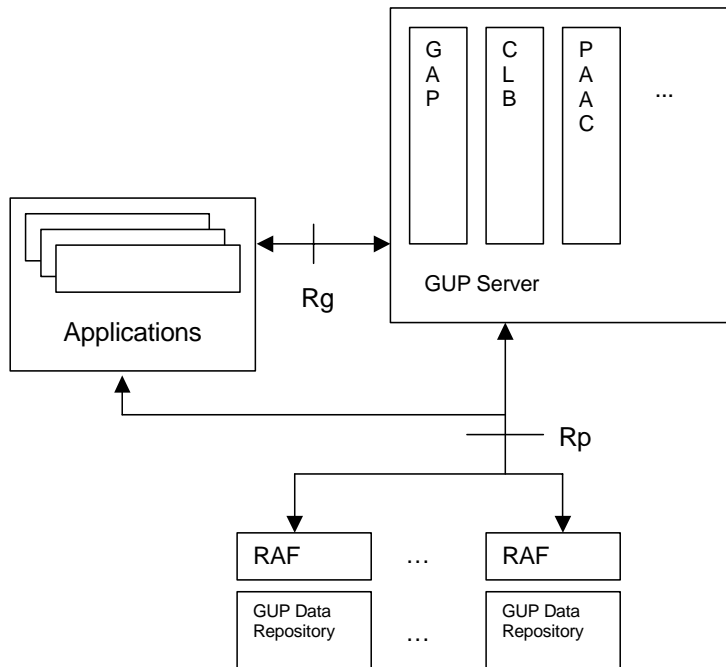


Figure 2: GUP Reference architecture

Figure 2 illustrates the GUP architecture as defined in 3GPP TS 23.240 [8].

The Rp interface of the GUP architecture is developed in such a way as to be compatible with the IRP concept. In the GUP architecture, the RAF and GUP Data Repository functionality can be viewed as providing the functionality of the NE OSFs and may be located in the NEs or the NE Management Systems. The Applications provide the NM/SM OSFs functionality and are located in the network- and service management systems.

4.3 Overview of IRP

Figures 3 and 4 identify system contexts of the IRP in terms of its implementation, called IRPAgent (3GPP TS 32.102 [4]), and the user of the IRPAgent, called IRPManager (3GPP TS 32.102 [4]).

The IRPAgent implements and supports this (SuM) IRP. The IRPAgent can reside in an Element Manager (EM) or a Network Element (NE) (3GPP TS 32.102 [4]). In the former case, the interface (represented by a thick dotted line) between the EM and the NEs is not the subject of this SUM-IRP.

An IRPManager using this SUM-IRP shall choose one of the two System Contexts defined here, for each NE. For instance, if an EM is responsible for managing a number of NEs, the NM shall access this IRP through the EM and not directly to those NEs.

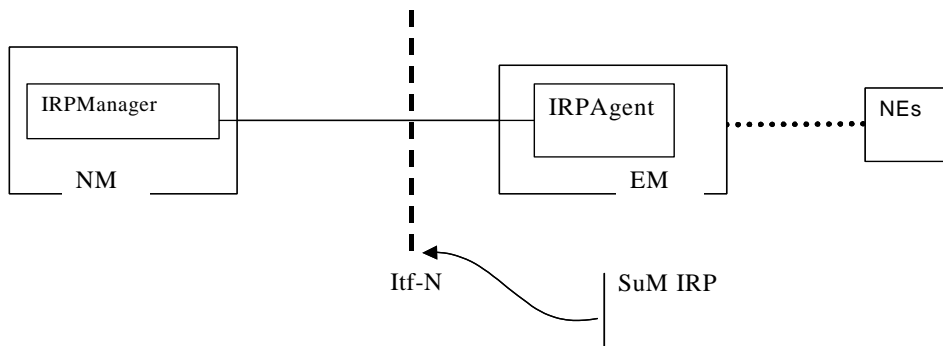


Figure 3: System Context

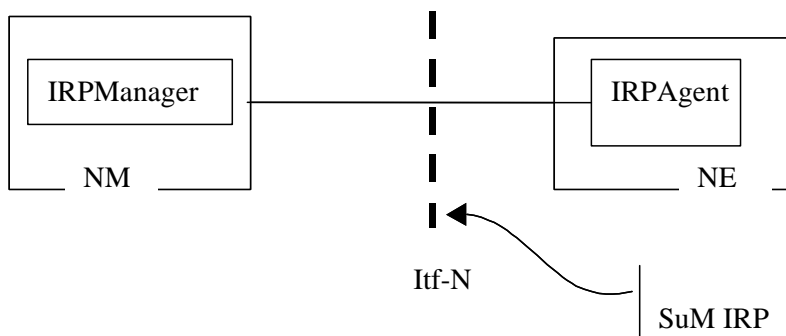


Figure 4: System Context B

4.3.1 IRP Security

The IRP interface is made secure by controlling access to the network and management systems. Operations processes must insure that only authorized personnel have the access authority to retrieve and alter SuM data. Standard protocols used over the interface between the IRPManager and the IRPAgent provide some degree of security. The exact nature of the security is described in the Solution Set for that protocol. In addition to the requirement that the IRPManager and the IRPAgent be secure, most physical links between them are secured as well.

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Mar 2003	SA_19	SP-030042	--	--	Submitted to SA#19 as v1.0.0 for Information	1.0.0	--