

Source: SA5 (Telecom Management)

Title: 3 Rel-6 CR 32.140/171

Document for: Approval

Agenda Item: 7.5.3

Doc1stLevel	Specific a	CR	R	Phase	Subject	Ca	VersCu	Doc2ndLev	Workitemsl D
SP-040764	32.140	004	--	Rel-6	Editorial corrections and updates of Subscription Management (SuM) requirements	D	6.2.0	S5-042648	SuM
SP-040764	32.140	005	--	Rel-6	Change the Introduction clause to reflect what capability SuM is offering in Rel-6	F	6.2.0	S5-042649	SuM
SP-040764	32.171	001	--	Rel-6	Editorial modifications to iSubscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Requirementsi	D	6.0.0	S5-042650	SuM

CHANGE REQUEST

⌘ **32.140 CR 004** ⌘ rev **-** ⌘ Current version: **6.2.0** ⌘

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

Proposed change affects: | UICC apps ME Radio Access Network Core Network

Title:	⌘ Editorial corrections and updates of Subscription Management (SuM) requirements		
Source:	⌘ SA5 (tommy.berggren@teliasonera.com)		
Work item code:	⌘ SuM	Date:	⌘ 01/10/2004
Category:	⌘ D	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (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) Rel-6 (Release 6)

Reason for change:	⌘ Editorial errors and usage of terms no longer relevant in 3GPP.
Summary of change:	⌘ Clean up of abbreviations, excluded usage of the term "User Equipment Management (UEM)" and a mix of minor editorial errors.
Consequences if not approved:	⌘ Unclear and misleading requirements.

Clauses affected:	⌘ 3.2, 4.1, 4.3.1, 4.4, 4.4.1, 4.4.2, 4.4.3, 4.5.1, 4.5.2, 6.1, 6.1.1, 6.2.1, B4, B.6, B.7, B.8, B.9, B.10, B.11, B.12										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	
Y	N										
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Other comments:	⌘										

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
DDM	Data Definition Method
EIR	Equipment Identity Register
GTT	Global Text Telephony
GUP	Generic User Profile
HLR	Home Location Register
HSS	Home Subscriber Server
IMS	IP Multimedia Subsystem
IRP	Integration Reference Point (see 3GPP TS 32.102 [Error! Reference source not found.])
ISP	Internet Service Provider
MMS	Multimedia Messaging Service
MWIF	Mobile Wireless Internet Forum
NPDB	Number Portability Data Base
OAM	Operations, Administration and Maintenance
OSA	Open Services Access
OSS	Operations Support System
PS	Packet Switch
QoS	Quality of Service
SLA	Service Level Agreement
SP	Service Provider
SProf	Service Profile
SuM	Subscription Management
TMN	Telecommunication Management Network
TOM	Telecom Operations Map (TMF)
TR-IRP	Trading Partner IRP
UICC	Universal Integrated Circuit Card
USIM	Universal Subscriber Identity Module
VASP	Value Added Service Provider
VHE	Virtual Home Environment
VPLMN	Visited Public Land Mobile Network

4 General description

4.1 Subscription Management (SuM) concept

The 3G environment requires more complex service delivery mechanisms than in 2G. The following drivers are leading to a need to standardize SuM Interfaces:

- Use of different vendor's equipment for 2G/2.5G and 3G.
- The trend in 2/2.5G toward the support of Virtual Network Operators and Content Providers requiring standardized interfaces amongst them.

Service delivery and support across multiple vendors' solutions and organizations is a feature of other industries, and the solutions are adopted are secure supply chain solutions based upon mainstream e-commerce principles, methods and technologies.

SuM is an area of service operation management that permits Service Providers and Operators to provision services for a specific customer service subscription.

Specific 3G areas that SuM requirements must address are:

- Subscription information is distributed across in a number of locations including the Home Network, the Visited Network, the User Equipment, Application VASP equipment (e.g. servers accessed by the subscriber for content and information based services).
- SuM will allow Service Providers and Operators to provision, control and monitor the subscription information.
- SuM is not simply an internal matter for a single operator but a capability that is achieved by linking together features across multiple Operators' Operations Support Systems (OSSs).
- SuM will need to manage subscription information in e.g. the OSSs, HSS, ~~UEM~~~~UE~~-OSA, ~~AuC~~-MMS and IMS subsystems.
- The common components between the GUP and the subscription profile.

The conceptual model for SuM is illustrated in figure 1.

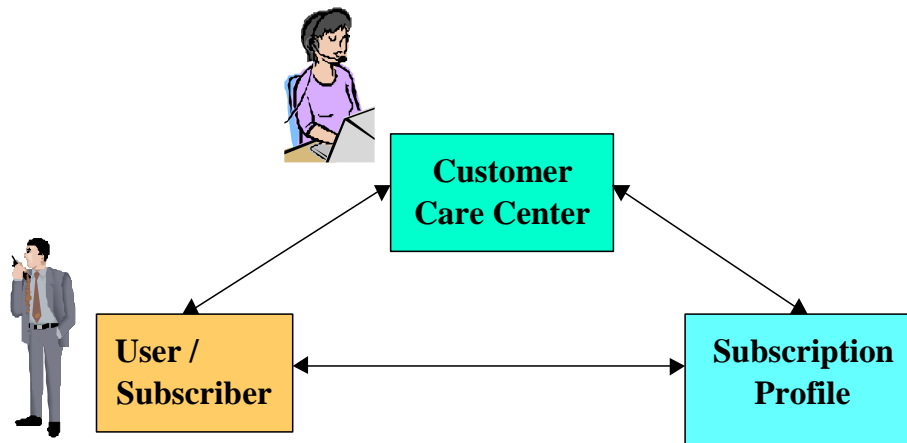


Figure 1: High level view of Subscription Management (SuM)

SuM is concerned with provisioning the subscription profile throughout all the systems and trading partners needed to realize the customer service, SuM provides specifications that define the interfaces and the procedures that interconnect the three points of the SuM triangle: Customer Care Center, the User and the network (s) where the Subscription profile resides (such as HSS, USIM, etc.).

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4.3.1 Functional overview

As the telecommunications now entering into the 3G, more powerful terminal and access technology allows the telecommunications networks to offer new wireless Multimedia and Internet services.

Accordingly, SuM is a telecommunications management framework that allows the Operators to leverage their network resources to:

- Validate (register, authenticate, and authorise.) a request for service from a user;
- Collect, store, update, and distribute the Service Profile information for the user;
- Select the trusted network resources to manage access, distribution, and control of the profile data information for the user; and
- Direct the network resources to promptly deliver the service requested to the user according to said profile information.

SuM fulfils the following essential 3G requirements:

- The "**Device Diversity**" allows access to telecommunications networks by a variety of UE's and devices that are available for the user at the time.
- The "**Access Diversity**" allows the telecommunications networks to offer a variety of access network options such as UTRAN, GERAN, WLAN, etc. to the user.
- The "**Service Diversity**" allows the Telecommunications networks to provide a variety of services delivered to the user from third party application Service Providers (VASP) or from other telecommunications networks (~~PMN~~VPLMN).

4.4 Management of subscription profiles

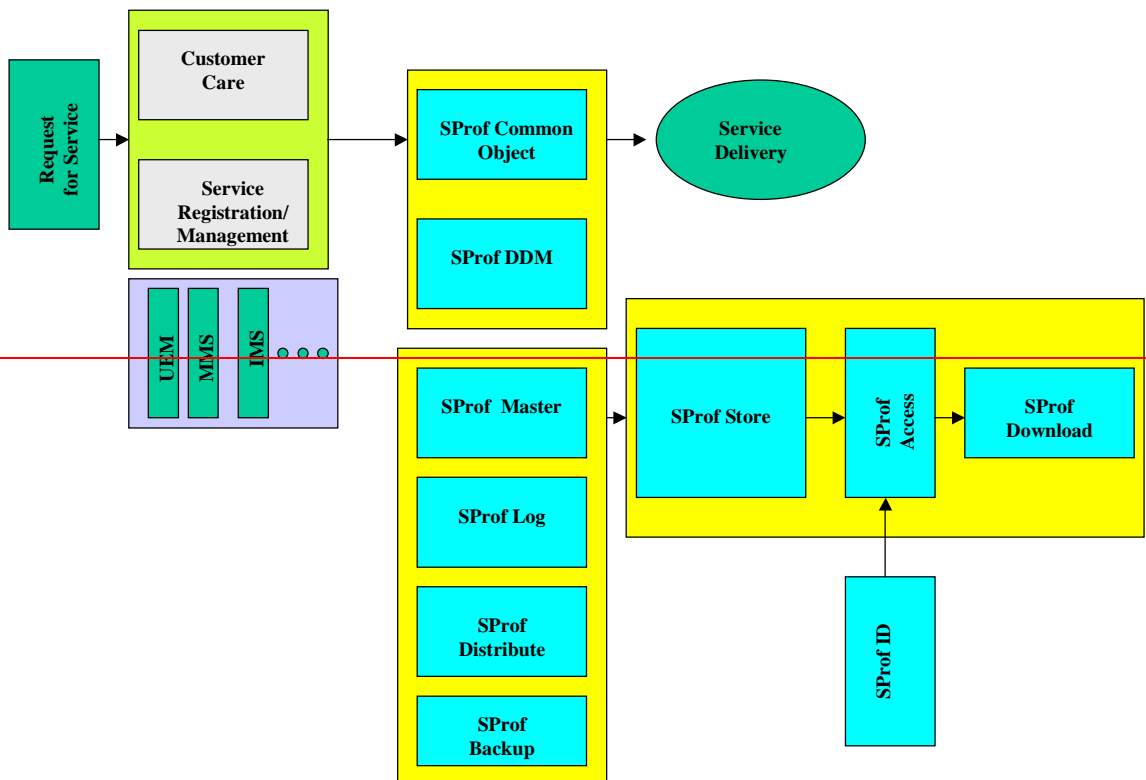
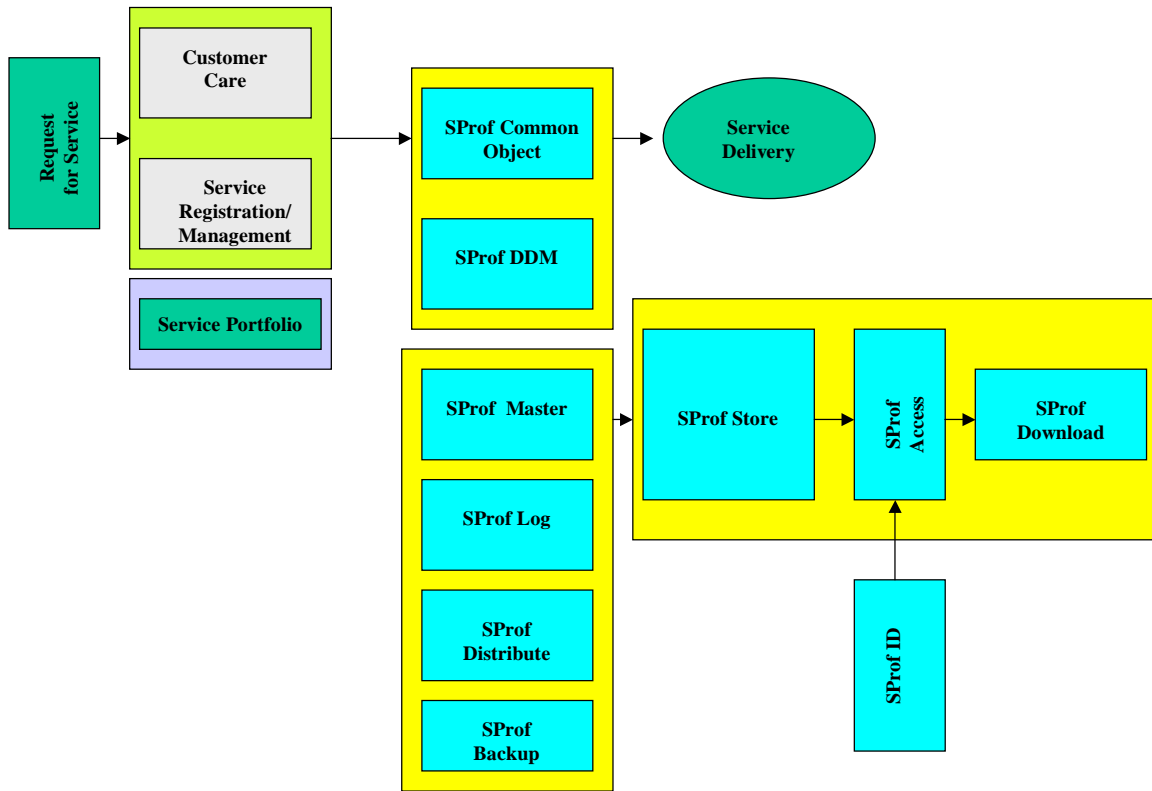


Figure 2: Architecture for management of subscription profile components

4.4.1 Requirements for subscription profile component management

SuM does not extend to the management of services.

However it is necessary to provide network entities with the subscription profile components needed for service fulfillment:

1. Subscription profile management shall support the fulfillment of requests for service from users, application services, and user equipment.
2. Subscription profile management shall support requests for subscription creation, modification and deletion. These requests may originate from users, subscribers, Network Operators, and Service Providers.
3. The above requests may be associated with the service entities in this release such as the MMS, IMS etc.
4. It shall be possible to relate each request for service with the corresponding Service Profile (SProf) information
5. The subscription profile information shall be maintained in the HSS.
6. In order to fulfill services, subscription profile information shall be distributed among the various network entities.
7. A subscription profile log shall be created to track changes related to creation and modification of subscription profiles and subscription profile components.
8. A back-up copy of the subscription profile shall be created.
9. Subscription profile information shall be secured by authorised access and control mechanisms.

4.4.2 Requirements for network and terminal provisioning

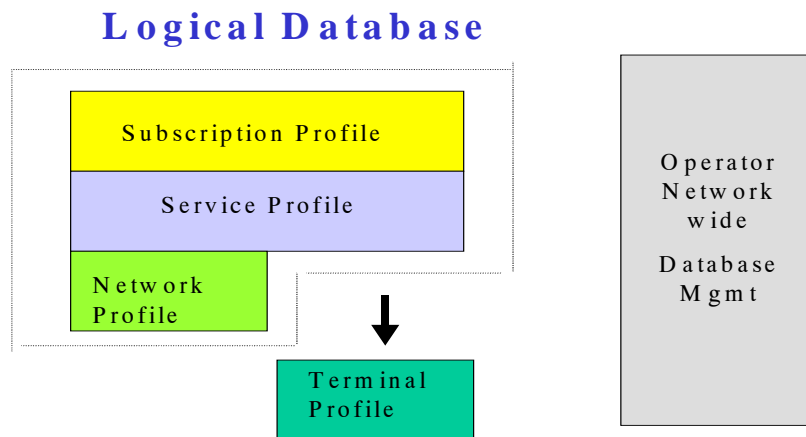


Figure 3: SuM network and service provisioning

The following steps define a logical sequence of events required for granting a request for service.

- a) A request for service is issued by a user (via the UE).
- b) Network receives the request for service and attempts to locate a subscriber ID.
- c) Once a subscriber ID is identified, it is authenticated if there has not already been an initial authentication.
- d) A request for service shall be denied if the subscriber cannot be identified and authenticated.

- e) For those requests for service that are authenticated, the corresponding subscription profile components are obtained if they have not already been obtained at initial authorization.
- f) The subscription profile component provides information on the services that are available to the subscriber and correlate the service request with a specific subscribed service.

The service is properly set up according to the profile (e.g. QoS, etc.) in order to prepare for the fulfillment and delivery of the service.Σ

4.4.3 Profile management evolution

For subsequent releases there will be several external entities including 3rd party Service Providers, visited operator networks, etc., and additional requirements for access control will be needed to ensure security.

For SuM stage 2 or 3, SP can expand from the current definition of subscriber data (3GPP TS 23.008 [**Error! Reference source not found.**]), GUP data (3GPP TS 22.240 [**Error! Reference source not found.**]), etc. when appropriate.

Subscription profile supports:

- Preference management;
- Service customization;
- Terminal management;
- Information sharing;
- Access permission via a unique key identifier.

The profile data will be distributed (using the Service Profile download capability) to configure the necessary architectural entities (UE, Servers etc.).

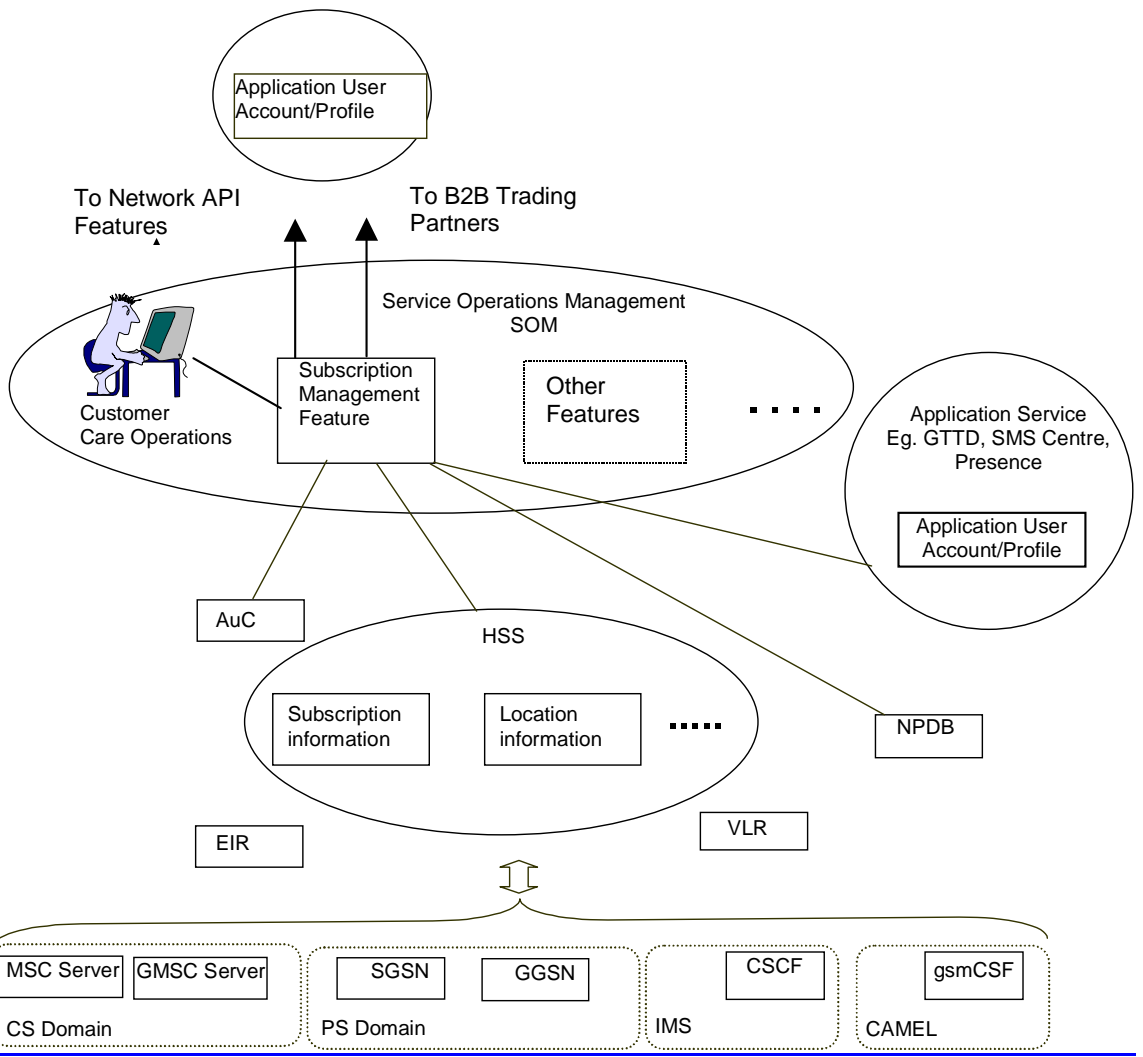
Future releases of subscription profile will include the Service Profile for VASPs.

Subscription profile data needs to be consistently managed across all the entities within the network that use the profile. The data may be controlled from a central point, or be distributed, hence the logical database depicted in figure 4. The management capabilities relate to the definition, modification and synchronization of the data mainly in core network entities. This may extend to data ~~that~~ needed in terminal devices, network elements, core network entities and Application Servers.

4.5 SuM: relationship to Network Entities and other subsystems

4.5.1 General

The SuM Feature provides management functions for subsystems, domains and components some of which are defined in the 3GPP Network Architecture 3GPP TS 23.002 [**Error! Reference source not found.**]. However the Network Architecture does not address the Mobile Equipment or the Open Services Architecture nor non 3GPP defined subsystems. Figure 5 shows this relationship with these entities, many of which are closely related to the Home Subscriber Server (HSS).



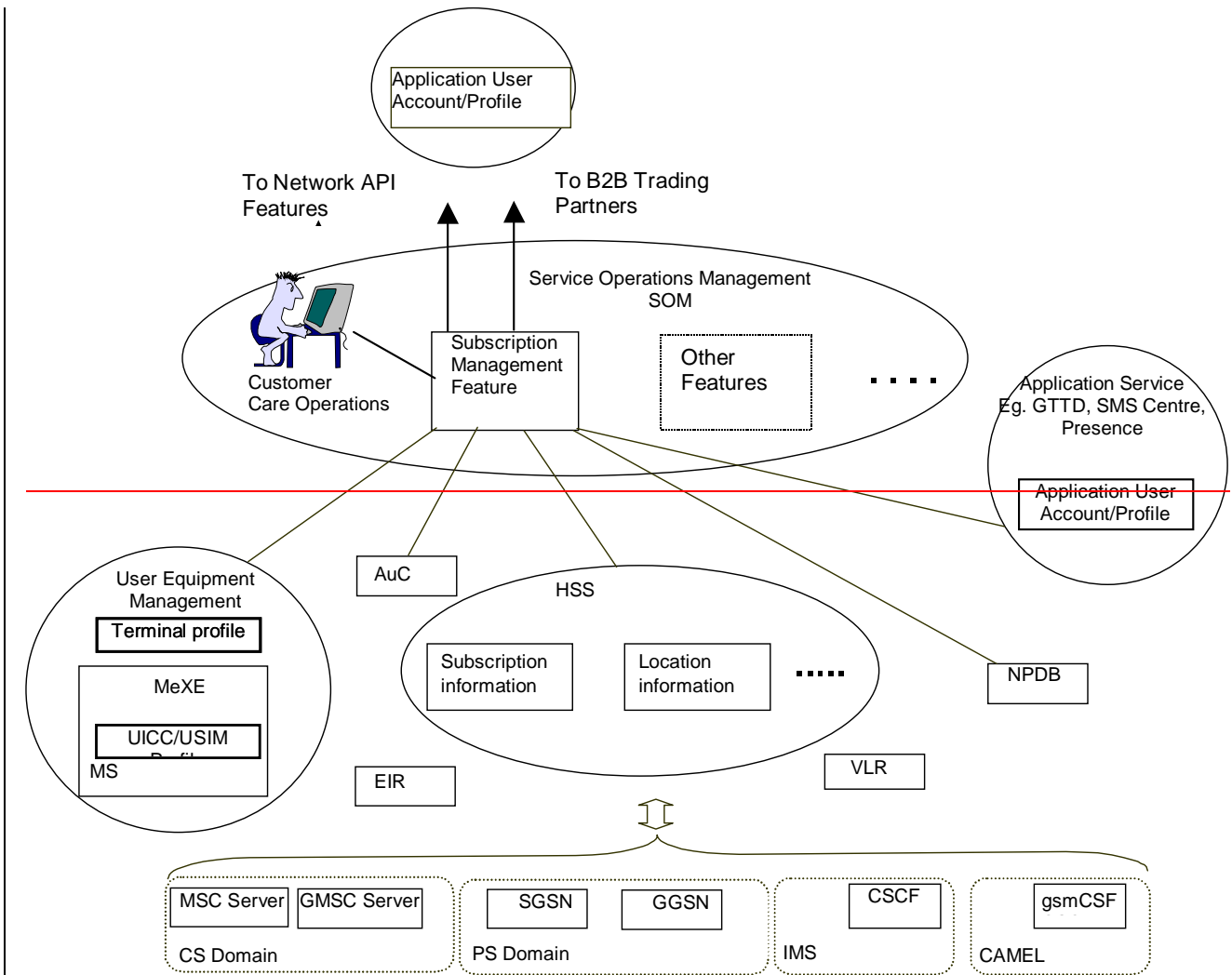


Figure 4: Examples of SuM relationships with Network Architecture

Figure 5 is based upon entities identified in the 3GPP Network Architecture 3GPP TS 23.002 [Error! Reference source not found.].

The Network Architecture identifies a number of entities that use subscription profile information for their operation.

The SuM feature provisions and audits the subscription profile information (either directly, or indirectly):

- Core Network entities:
 - Home Subscriber Server (HSS) including Home Location Register (HLR), Authentication Centre and HSS Logical functions;
 - Visitor Location Register (VLR);
 - Equipment Identity Register (EIR);
 - SMS - GMSC;
 - SMS Interworking MSC.
- Circuit Switched Domain:
 - MSC Server;
 - Gateway MSC (GMSC).

- User Equipment/Mobile Station:
 - Specific entities of the Mobile System as:
 - IP Multimedia System (IMS);
 - CAMEL Entities;
 - Number Portability Database (NPDB);
 - Global Text Telephony (GTT) entities.

SuM also provides capabilities to support B2B trading interfaces to other trading partners: VASP, Virtual mobile Operators etc.

Figure 5 also implies a set of relationships from SuM to:

- User Equipment Management that is assumed to configure and provision all aspects of the User Equipment and Terminals, including the possibility of configuring UICC/USIM profile information, using MeXe where appropriate.
- Application Service provided by third parties including trusted third parties that may configure some USIM via network interfaces, for example banks and other financial institutions. These services may also be provided by the Network Operator performing the role of Application Service provider.
- Network Service provided by Network Operators (e.g. SMS, presence).

4.5.2 Relationship to Generic User Profile (GUP)

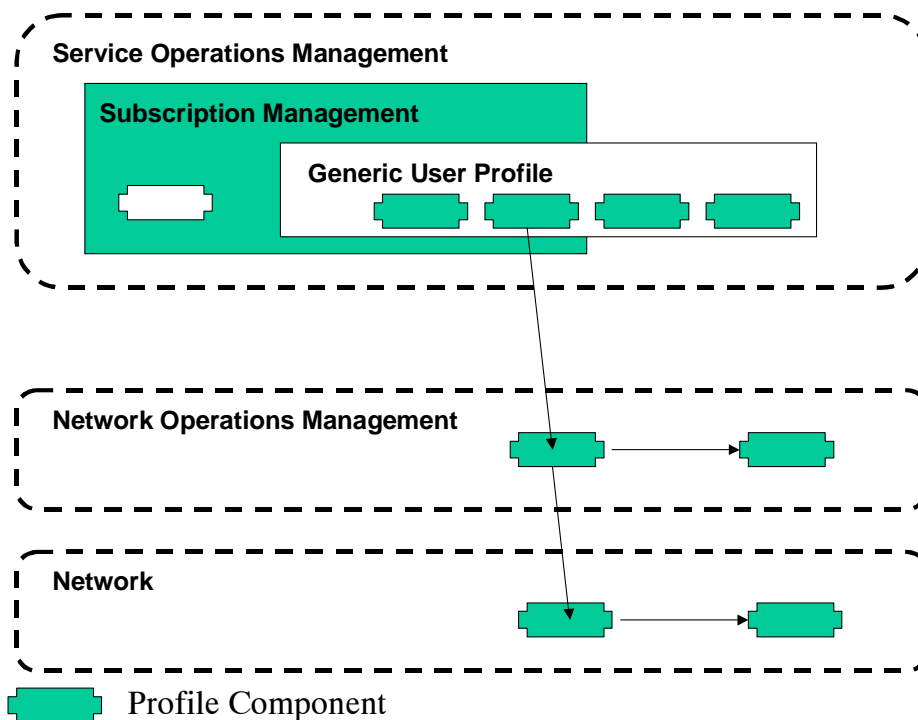


Figure 5: Relationship between SuM and GUPs

- The concept of a GUP is defined in 3GPP TS 22.240 [Error! Reference source not found.].

The main focus is on the definition of:

- A User profile constructed from one or more User Profiles components.

- Each User Profile components that comprise one or more data types with formal definition.

The emphasis is on defining data types especially those that have to be held or replicated in User Equipment.

GUP assumes that User Profile components may be distributed and replicated across a number of network domains and systems. SuM is a feature that allows subscription profile components to be distributed across Systems and Network Domains. Some subscription profile components and some Generic Use Profile components are common. These common components affect the user experience and hence are part of the GUP. SuM Processes are supported by processes and functions provided in the Service Operations, the Network Operations and Network Domains.

SuM provides the management means to create, read, modify and delete data. It also provides for the management of the integrity of the subscription profile components - and implicitly those common with GUP - by providing the mechanisms for the its distribution and synchronization across Systems and Network Domains.

6 High-level requirements

6.1 General

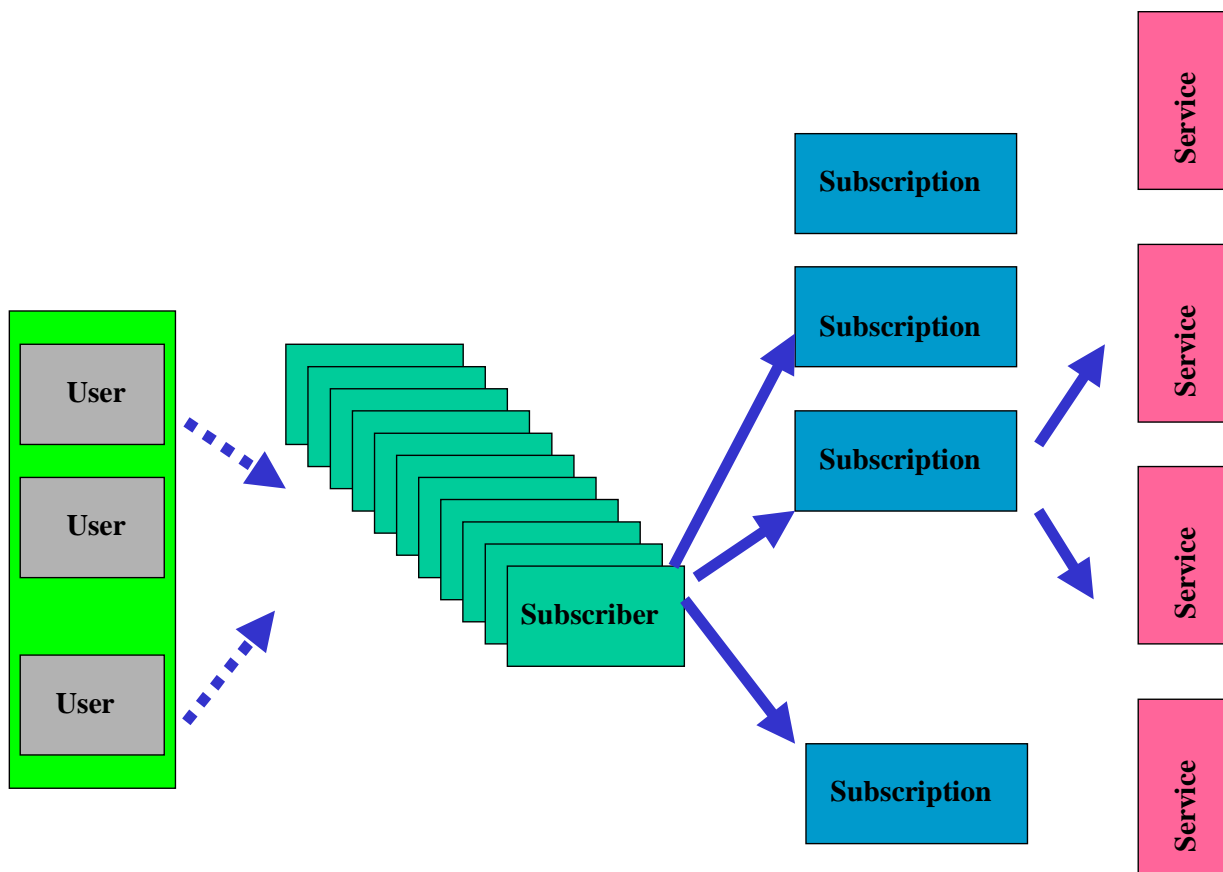


Figure 6: SuM Entities - Relations

Figure 7 shows the relationships between users, subscribers, subscriptions and services.

According to the way in which Operators do business:

- Each Operator has many subscribers;
- Each subscriber can have several users; and
- Users can request a service. The request will be granted if for the user, a contract for the requested service, has been signed between the service provider and a subscriber.

6.1.1 Pre-requisites for service

These assertions address some of the operator's concerns, prior to granting a service request to a user:

1. find a subscriber entity that can match with the user;
2. identify and verify the subscriber's subscription profile; and
3. ensure the request for service is consistent with the subscription profile.

6.2 Feature requirements

SuM shall provide:

1. The management of the subscription profile information in the home PLMN.
2. It shall be possible to replicate and distribute the subscription profile components.
 - Support for subscription profile information across administrative, network and systems domains (e.g. VLR in visited networks).
3. The control and modification of subscription profile information consistent with the customer care needs including self help, self diagnosis and fault diagnosis.
 - SuM shall provide a process to support subscribers wishing to check their Subscription Configuration (e.g. support self care).

6.2.1 Requirements on HSS/HLR

The ~~HSS/HLR is the~~ master database where subscription profile components are stored is in the HSS/HLR, which is used by the network for distribution and replication of this data in other subsystems such as the PS, ~~and~~ CS and IM Domains, CAMEL, etc.

1. SuM shall allow for the creating, reading, updating and deleting of subscription profile data in the HSS/HLR.
2. SuM shall support the data described in 3GPP TS 23.008 [**Error! Reference source not found.**].

B.1 Create a subscription for a new subscriber

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	To fulfil a subscription for a new subscriber with one or more users in order to allow the users access to the subscribed services. Performance: Near real time	
Actor(s) and Role(s)	Service Provider Network Operator	
Assumptions	(a) Subscriber credit worthiness has been determined by other systems, techniques and mechanisms which are outside the subscription management system boundary. (b) Levels of trust for subscribers and users have been determined by other systems, techniques and mechanisms outside of the subscription management system boundary (c) The Contract contains the number of users and the set of services these may use. (d) For each user the services she/he may use are also defined out of the above mentioned set of subscribed services.	
Pre conditions	(a).The services that can be offered by the network have been defined. (b) Sufficient resources are available to support the anticipated take up of services by users.	
Begins when	A subscriber has signed a new contract with the service provider	
Step 1	Create the subscriber profile and populate it with the set of services subscribed to the subscriber including subscriber specific settings and preferences for the subscribed services. Associated information element(s): Subscriber Profile, Subscribed Services Profile	
Step 2	For each user create a subscription profile using the Add User use case Associated information element(s): Subscription Profile	Add User
Step 3	For each user modify her/his subscription profile to fulfil the services in the network using the Modify User use case. Associated information element(s): SubscriptionProfile, Service Profile	Modify User
Ends when	The network allows the users to use their subscribed services OR an error condition has been encountered.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The network allows the users to use their subscribed service. A subscriber profile has been created and populated with the set of subscribed services. The subscription profiles for each user have been created and populated with data necessary for the usage of their subscribed services. Associated information element(s): Subscriber Profile, Subscribed Services Profile, Subscription Profile, Service Profile	
Traceability	Requirements: Each type of services offered requires the ability to uniquely identify it. To support self care it will be necessary to be able to correlate services references in a subscription, to the subscription profiles in the network. It will be necessary to be able to audit the capabilities in a subscription against the subscription profile(s) in the network elements.	

B.2 Modify subscription

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	To modify the services and related terms and conditions which apply to a particular subscription. This is expected to result from contract re-negotiation, where the resulting changes need to be applied to the affected users within the network. Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider	
Assumptions	The Contract changes are known and may be any variation of: removal of users, addition of new users, removal of services subscribed, newly subscribed services, modified subscribed services The subscriber is still credit and trust worthy. (The checks for this are performed outside of SUM, but SuM needs to have access to this kind of information)	
Pre conditions	(a) The services that can be offered by the network have been defined. (b) Sufficient resources are available to support the anticipated take up of services by users. (c) The Subscriber already exists in the network (d) Users to be modified or deleted already exist in the network	
Begins when	The contractual details have been modified.	
Step 1	Modify the list of subscribed services in the subscriber profile including subscriber specific settings for the subscribed services. Associated information element(s): Subscriber Profile, Subscribed Services Profile.	
Step 2	For each user no longer part of this subscription remove her/his subscription profile by utilizing the Use Case Delete User Associated information element(s): Subscription Profile.	Delete User
Step 3	For each new user create a subscription profile using the Add User use case Associated information element(s): Subscription Profile	Add User
Step 4	For each new user add their subscribed services to her/his subscription profile using the Modify User use case. Associated information element(s): Subscription Profile, Service Profile.	Modify User
Step 5	For each already existing user subject to subscription and service changes modify her/his subscription profile to fulfil the services in the network using the Modify User use case. Associated information element(s): Subscription Profile, Service Profile.	Modify User
Ends when	The network allows the users to use their subscribed services within the contract limits OR An error condition has been encountered.	
Exceptions	Any of the steps of this use case fails.	
Post Conditions	Services in the contract align with services in the subscriber profile and the subscription profiles. Number of users in the contract aligns with the number of users in the network under this subscription. Associated information element(s): Subscriber Profile, Subscribed Services Profile, Subscription Profile, Service Profile.	
Traceability	Requirements: (a) Each type of services offered requires the ability to uniquely identify it. (b) To support self care it will be necessary to be able to correlate services references in a subscription, to the subscription profiles in the network. (c) It will be necessary to be able to audit the capabilities in a subscription against the subscription profile(s) in the network elements.	

B.4 Get subscription details

Use Case Stage	Evolution / Specification	<<Uses>> Related use
Goal	Get subscription details on number of users and their subscribed services stored in the network. Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider Subscriber	
Assumptions	The information provided for Network Operator is broader than for Subscriber	
Pre conditions	(a) The Subscriber already exists in the network	
Begins when	Network Operator, Service Provider or Subscriber request information on subscription stored in the network elements	
Step 1	Get information contained in Subscriber's subscriber profile Associated information element(s): Subscriber Profile, Subscribed Services Profile	
Step 2	For each user contained within the subscription get the information contained in her/his subscription profile using the use case 'Get User Details' Associated information element(s): Subscription Profile, Service Profile	Get User Details
Ends when	The subscriber's subscriber profile and subscription profiles have been read from the network elements in this operator's network OR an error condition has been encountered.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The details contained in the contract and stored in network elements are unchanged. The subscriber's subscriber profile and subscription profiles details are provided to the requestor. Associated information element(s): Subscriber Profile, Subscribed Services Profile, Subscription Profile, Service Profile	
Traceability		

B.5 Add user - create a subscription profile for a user

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	To add a new user associated with a subscription to the network. Performance: Near real time	
Actor(s) and Role(s)	Service Provider Network Operator Subscriber	
Assumptions	(a) The services that can be offered by the network have been defined. (b) Sufficient resources are available to support the delivery of services to users. (c) The Contract contains the set of services the user may use.	
Pre conditions	(a) The Subscriber already exists in the network	
Begins when	A subscriber has signed a new contract with the service provider or has extended an existing contract with additional user(s).	
Step 1	Create the user's subscription profile and populate it with the set of identifications and other data common to services. Associated information element(s): Subscription Profile	
Ends when	The user is known in the network. OR an error condition has been encountered.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The network holds the subscription profile for the user. Associated information element(s): Subscription Profile	
Traceability		

B.6 Modify user

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	To modify the set of identifications and/or the services and related settings and preferences which apply to a particular user. This is expected to result either from a new contract or from contract re-negotiation, where the resulting changes need to be applied to the affected users within the network. Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider Subscriber	
Assumptions	The Contract changes are known and may be any variation of: Change of user's set of identifications, removal of services subscribed, newly subscribed services, modified service settings and preferences	
Pre conditions	(+) The user already exists in the network	
Begins when	The user has been newly added to the network or the contractual details concerning a user or the services subscribed for him have changed (which may be both additions and/or withdrawals)	
Step 1	IF the user's set of identifications and other data common to services are to be modified align her/his subscription profile. Associated information element(s): Subscription Profile	
Step 2	IF the user has access to services which are no longer part of the contract, then delete them from the user's Subscription Profile using the Use Case Delete Service Associated information element(s): Subscription Profile, Service Profile	Delete Service
Step 3	Modify the existing subscription profile to fulfil the subscribed services in the network using the Add Service use case. Associated information element(s): Subscription Profile, Service Profile	Add Service
Step 4	Modify existing service profiles in the user's subscription profile to fulfil the services in the network using the Modify Service use case. Associated information element(s): Subscription Profile, Service Profile	Modify Service
Ends when	The network allows the user to use his subscribed services within the contract limits. OR an error condition has been encountered.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	Services in the contract align with services in the subscription profile. Associated information element(s): Subscription Profile, Service Profile	
Traceability		

B.7 Delete user

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	Remove a user contained in the contract Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider Subscriber	
Assumptions	There is a way of confirming that a user is to be removed from using network services. This is to ensure compliance with any country or region specific legislation regarding access to such things as emergency calls.	
Pre conditions	(a) The user already exists in the network	
Begins when	A subscription expires or the number of users contained in the subscription is reduced	
Step 1	Remove the user that is no longer contained within the subscription by deleting his subscription profile. Associated information element(s): Subscription Profile, Service Profile	
Ends when	The user's subscription profile has been removed from the network elements in this operators network.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The user who was removed from the subscription is no longer able to use services in this network. Trace Logs, and contractual references are not automatically removed in case of any legal issues that require closure. Only subscription profile data which would enable access to services are removed. Associated information element(s): Subscription Profile, Service Profile	
Traceability		

B.8 Get user details

Use Case Stage	Evolution / Specification	<<Uses>> Related use
Goal	Get details for the user contained in the subscription and stored in the network Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider Subscriber User	
Assumptions	The information provided for Network Operator is broader than for Subscriber, which might still be broader than that for the user.	
Pre conditions	(a) The user already exists in the network	
Begins when	Network Operator, Subscriber or User request information on User stored in the network elements	
Step 1	Get the information contained in the subscription profile for the user Associated information element(s): Subscription Profile, Service Profile	
Ends when	The user's subscription profile has been read from the network elements in this operator's network.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The details contained in the contract and stored in network elements are unchanged Associated information element(s): Subscription Profile, Service Profile	
Traceability		

B.9 Add service

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	To fulfill a subscription for a new subscriber or subscription extension for an existing subscriber with one or more users or a service has been added to the contract for the user in order to allow the user access to a service. Performance: Near real time.	
Actor(s) and Role(s)	Service Provider Network Operator Subscriber	
Assumptions	(a) The services that can be offered by the network have been defined. (b) Sufficient resources are available to support the delivery of services to users. (c) The Contract contains the set of services the user may use.	
Pre conditions	(a) The user already exists in the network (b) The user has no access to the service	
Begins when	A subscriber has signed a new contract with the service provider or has extended an existing contract with additional user(s) or has extended the services the existing user may use.	
Step 1	Within the user's subscription profile create the service profile and populate it with the set of preferences and settings subscribed. Associated information element(s): Subscription Profile, Service Profile.	
Ends when	The user can use the service in the network. OR an error condition has been encountered.	
Exceptions	Any of the steps of this use case fails.	
Post Conditions	The network holds the extended subscription profile for the user. Associated information element(s): Subscription Profile, Service Profile.	
Traceability		

B.10 Modify service

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	To modify the set of settings and preferences which apply to a service for a particular user. This is expected to result from contract re negotiation, where the resulting changes need to be applied to the affected users within the network or subscriber or user initiated changes. Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider Subscriber User	
Assumptions	The Contract changes are known and may be any variation of: Change of user's preferences Change of user's service related settings	
Pre conditions	(a) The user already exists in the network (b) The user has access to the service	
Begins when	The contractual details have been modified or a decision for settings and preferences changes has been taken	
Step 1	Within the user's subscription profile modify the existing service profile to change the service preferences and settings in the network Associated information element(s): Subscription Profile, Service Profile	
Ends when	The network allows the user to use his subscribed services within the contract limits. The updated set of settings and preferences are now operative. OR an error condition has been encountered.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The service settings and preferences defined and agreed in the contract or wanted by the user now align with service settings and preferences in the service profile. Associated information element(s): Subscription Profile, Service Profile	
Traceability		

B.11 Delete service

Use Case Stage	Evolution / Specification	<<Uses>> Related use case
Goal	Remove a service contained in the contract for one user Performance: Near real time	
Actor(s) and Role(s)	Network Operator Subscriber	
Assumptions	There is a way of confirming that a user is to be denied access to certain network services. This is to ensure compliance with any country or region specific legislation regarding access to such things as emergency calls.	
Pre conditions	(a) The user already exists in the network (b) The user has access to the service	
Begins when	A subscription expires or Subscriber credit worthiness or trust have been lost or existing user(s) are deleted from the contract or a service is deleted from the contract for all or only for one user	
Step 1	In the user's subscription profile delete the existing service profile to inhibit access to the service in the network Associated information element(s): Subscription Profile, Service Profile	
Ends when	The user's subscription profile has been removed from the network elements in this operator's network.	
Exceptions	Any of the steps of this use case fails	
Post Condition	The user who was contained in the contract is no longer able to use services in this network. Trace Logs, and contractual references are not automatically removed in case of any legal issues that require closure. Only subscription profile data which would enable access to services are removed. Associated information element(s): Subscription Profile, Service Profile	
Traceability		

B.12 Get service details

Use Case Stage	Evolution / Specification	<<Uses>> Related use
Goal	Get details (settings and preferences) of the user's access to a service stored in the network Performance: Near real time	
Actor(s) and Role(s)	Network Operator Service Provider Subscriber User	
Assumptions	The information provided for Network Operator is broader than for Subscriber, which might still be broader than that for the user.	
Pre conditions	(a) The user already exists in the network (b) The user has access to the service	
Begins when	Network Operator, Subscriber or User request information on service settings and preferences stored in the network	
Step 1	Get the information contained in the service profile within the user's subscription profile Associated information element(s): Subscription Profile, Service Profile	
Ends when	The service profile within the user's subscription profile has been read from the network elements in this operator's network.	
Exceptions	Any of the steps of this use case fails	
Post Conditions	The details contained in the contract and stored in network elements are unchanged Associated information element(s): Subscription Profile, Service Profile	
Traceability		

CHANGE REQUEST

⌘ **32.140 CR 005** ⌘ rev - ⌘ Current version: **6.2.0** ⌘

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

Proposed change affects: | UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Change the Introduction clause to reflect what capability SuM is offering in Rel-6		
Source:	⌘ SA5 (islip@lucent.com)		
Work item code:	⌘ SuM	Date:	⌘ 01/10/2004
Category:	⌘ F	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (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) Rel-6 (Release 6)

Reason for change:	⌘ Raises false expectation if the introduction is read out of context.
Summary of change:	⌘ Slight amendment to introduction to show it is a single operator domain.
Consequences if not approved:	⌘ Operators will expect MVNO, service trading which are capabilities which may be provided in later releases (i.e. not included in Rel 6)

Clauses affected:	⌘ Introduction						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" type="checkbox"/>	O&M Specifications					
Other comments:	⌘						

Change in Clause Introduction

Introduction

Subscription Management (SuM) is a feature [which will develop over a number of 3GPP releases. It is intended to ~~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. SuM focuses on the OAM processes to manage subscription information. These correspond to the '~~Fulfillment~~[Fulfilment](#)' Process areas of the TeleManagement Forum Telecom Operations Map [**Error! Reference source not found.**].

[Within the current version of the present document this is limited to a single operator's network.](#)

SuM is an area of service operation management that sets a complex challenge for Service Providers and Operators in their support of new or existing subscribers during their every day network operation.

In 2G solutions the main repository of the subscription information is in the Home Locations Register (HLR). However the management and administration interfaces for controlling this information is proprietary to each vendor. The use of proprietary interfaces is inconvenient for those Operators using multiple vendors' equipment since their provisioning systems have to accommodate multiple proprietary interfaces, which perform essentially identical functions. Moreover, it makes it more difficult to generate customer self care applications that allow subscribers to provision, and amend subscription data.

The 3G environment requires more complex service delivery mechanisms than in 2G and SuM 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 Operations Support Systems (OSS). Historically, the services provided by Operators have been defined within standards groups such as ETSI or 3GPP. With the advent of Open Services Access (OSA) being adopted by 3GPP the User Service Definitions will be replaced by Service Capabilities traded amongst Service Providers and Network Operators. This will allow Operators and Service Providers to define customized service environments that roam with users as they move amongst networks - this is the Virtual Home Environment (VHE) 3GPP TR 22.121 [**Error! Reference source not found.**]. This customized service environment means that subscription information is held in a number of locations including the Home Network, the Visited Network, the User Equipment, Application VASP Equipment (e.g. servers accessed by the subscriber for content and information based services) and the Operations Systems of the Service Providers, and Operators supporting the subscriber's service subscription.

Service delivery and support across multiple vendors' solutions and organizations is a feature of other industries, and the solutions adopted are secure supply chain solutions based upon mainstream e-commerce principles, methods and technologies.

There is a relationship between this feature and the PS Domain, CS Domain, IP Multimedia Subsystem (IMS), Authentication Center (AuC), Open Services Access (OSA) and Generic User Profile (GUP) documented in other 3GPP specifications.

Integration Reference Points (IRPs) are specified in separate TSs.

**End of Change in Introduction
End of Document**

CHANGE REQUEST

⌘ **32.171 CR 001** ⌘ rev - ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: | UICC apps ME Radio Access Network Core Network

Title:	⌘ Editorial modifications to iSubscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Requirements		
Source:	⌘ SA5 (tommy.berggren@teliasonera.com)		
Work item code:	⌘ SuM	Date:	⌘ 01/10/2004
Category:	⌘ D	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (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) Rel-6 (Release 6)

Reason for change:	⌘ Editorial changes to clarify and improve readability of the TS.
Summary of change:	⌘ Clean up of references.
Consequences if not approved:	⌘ Lacking editorial perfection of a 3GPP SA5 Technical Standard.

Clauses affected:	⌘ Introduction, 1, 2, 4.										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘										

Introduction

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

TS 32.140: "Subscription Management (SuM) requirements".

TS 32.141: "Subscription Management (SuM) architecture".

TS 32.171: "Subscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Requirements".

TS 32.172: "Subscription Management (SuM) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

[TS 32.175: "Subscription Management \(SuM\) Network Resource Model \(NRM\) Integration Reference Point \(IRP\): eXtensible Markup Language \(XML\) definition"](#)

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 an area of Service Operation Management that sets a complex challenge for Service Providers and Operators in their support of new or existing subscribers during their every day network operation.

1 Scope

The present document defines, in addition to the requirements defined in [1], [2], [34] and [45], requirements for the present SuM NRM IRP.

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 TR 21.905: "Vocabulary for 3GPP Specifications".~~

[34] 3GPP TS 32.140: "Telecommunication management; Subscription Management (SuM) requirements".

[45] 3GPP TS 32.141: "Telecommunication management; Subscription Management (SuM) architecture".

~~[7] 3GPP TS 32.172: "Telecommunication management; Subscription Management (SuM) resources Integration Reference Point (IRP); Network Resources Model (NRM)".~~

4 Requirements

The following general and high-level requirements apply for the present IRP:

- a) IRP-related requirements in 3GPP TS 32.101 [1].
- b) IRP-related requirements in 3GPP TS 32.102 [2].
- c) IRP-related requirements in 3GPP TS 32.140 [34].
- d) IRP-related requirements in 3GPP TS 32.141 [45].