3GPP TSG SA WG3 Security — S3#31 **S3-030679**
18 - 21 November 2003
Munich, Germany

3GPP TSG-SA1 Meeting #22 **SA1-031260**
Bangkok, Thailand, 27- 31 October 2003

Title:	LS on clarified requirements on synchronization for GUP
Response to:	T2-030518 (S1-031099)
Release:	Rel-6
Work Item:	GUP
Source:	SA1
To:	T2
Cc:	SA2, SA3, SA5, CN4

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Attachments: S1-031256 CR on TS 22.240 v6.1.0 clarifying requirements on synchronization for GUP

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1. Overall Description:

SA1 thanks T2 for the LS on usage of GUP reference points. T2 asked if the following two statements are conflicting:

1. The statement from SA2:

"Changing the role of a non-master component to a master role is not possible, since after the change an Application would turn into a GUP Data Repository, and that is not allowed by the Rg and Rp reference points."

2. TS22.240 V6.0.0, section 4.4:

"During the lifetime of a component, the role of master instance may be played by different component instances (e.g. in the case of failure)."

SA1 has clarified the requirements on synchronization for GUP and updated the stage 1 accordingly.

SA1 would like to inform T2 that the statements above are not conflicting. Statement from SA2 refers to the roles of master and copy in the context of GUP as clarified in the updated stage 1.

The statement from 22.240 v6.0.0 referred to the possible physical implementation which may be used for reliability. However SA1 would like to point out that this implementation issue is out of scope of GUP.

2. Actions:

To T2 group.

ACTION: SA1 would like to inform T2 about clarified synchronization requirements in GUP stage 1. No action is required from T2.

3. Date of Next TSG-SA1 Meetings:

SA1#23	12-16 Jan 2004	Innsbruck, Austria
SA1#24	19-23 April 2004	Shenzhen, China

CR-Form-v7

CHANGE REQUEST

⌘ 22.240 CR 002 ⌘rev - ⌘ Current version: 6.1.0 ⌘

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⌘ [X] ME [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Clarifications on general service requirements and data description requirements
Source:	⌘	Siemens
Work item code:	⌘	GUP
Date:	⌘	26/06/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one 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 one 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:	⌘	Requirements in section 6 of TS 22.240 need to be tidied up. (e.g. the same requirement re-appears in a slightly different way, or requirements need to be clearly distinguished from explanatory text)
Summary of change:	⌘	Requirements in section 6 of TS 22.240 are tidied up.
Consequences if not approved:	⌘	Unclear requirements could lead to misinterpretation by SA2, SA5, T2 and CN4.

Clauses affected:	⌘	6.1, 6.3, 6.6			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ 23.240, 23.241, 29.240
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6 General Requirements

This clause includes different general technical requirements which are not from the perspective of a particular stakeholder.

6.1 Network Requirements

These requirements are collected from the point of view of technical Network infrastructure and Elements:

- The GUP data shall be accessed by ~~a~~ standardised GUP interfaces and protocols which use the generic GUP data model to carry the user profile.
- The GUP Interface shall be independent of the structure and semantics of the data.
- The GUP access mechanism shall support accessing of the whole profile data or a selected part of it.
- The GUP access mechanism shall include read, create, modify and delete access.
- The GUP data shall be transferred in a standardised way.
- The GUP interface shall include a standardised way for access control.
- The GUP interface shall enforce the subscriber privacy.
- The GUP interface shall enforce the user privacy.
- The GUP shall not cause significant additional load or delays to the network functions and elements.

6.2 UE Requirements

This subclause includes different UE specific requirements for the 3GPP GUP.

- GUP shall provide mechanisms to describe GUP data in the UE (e.g. terminal capabilities, user preferences, etc).
- GUP shall provide mechanisms to access (create, read, modify or delete) GUP data in the UE.
- Irrespective of the connectivity status of the UE, GUP data stores in the UE shall follow the data consistency, synchronisation and access control requirements.
- It shall be possible to back up GUP data to the home network or VASP network and to restore it to a UE.

6.3 General Service Requirements

This subclause includes different Service aspects and requirements for the 3GPP Generic User Profile. ~~such as~~The following general requirements from the point of view of different Service Applications apply:~~:~~

- It shall be possible for an application to retrieve the whole user profile or selected parts of it in one transaction.
- There shall be effective means to retrieve individual GUP data elements with acceptable delay for real-time services.

One typical use case for the latter requirement is a call control application that would take advantage of subscriber's preferences or charging related information.

Generally user related data are stored in either one or several entities e.g. in HSS, in Application Servers (AS) or in the UE. To avoid unnecessary duplicated data storage the application shall be able to fetch selected parts of user's GUP data.

~~Secondly there are universal services that are not subscribed to. Those applications may also need GUP data related either to the originating or destination party~~. ~~There shall be effective means to retrieve individual GUP data elements in real-time. One typical use case is a call control application that would take advantage of subscriber's preferences or charging related information~~.

Third party applications may take advantage of the features specified e.g. for Open Service Access (see 3GPP TS 22.127 [3]) to access GUP data.

~~The specified GUP interface shall apply the GUP data model to carry the user profile information for different service applications. It shall be possible for service application to retrieve the whole user profile or selected parts of it in one transaction with acceptable delay for real-time services.~~

- The description of GUP data shall be easily extensible for new, proprietary uses without any problems caused for the existing or standard applications.

~~Where the full capabilities of the 3GPP Generic User Profile are not available because of failure of an entity the application is notified about the abnormal situation~~.

6.4 Management Requirements

This subclause includes different technical Management aspects for the 3GPP Generic User Profile based on the needs of e.g. Self-Service Management, Subscription Management, Service Management, UE Management, Network Element Management, Network Management and Customer Relationship Management.

In 3G networks it is expected that user profile data is not only distributed over different network elements but belongs to different administrative domains. These administrative domains may be closed against external access. However, in order to enable a seamless service experience for the user a controlled transparency to exchange user profile data is needed.

There exist two main cases to be addressed:

Domain borders in the home network:

Already in the network of the subscriber's home network operator there may exist different domains. Potential examples are application of 3rd party value added service providers which are loosely coupled with the network provider, e.g. their applications run under the brand of the network operator but their data are stored and maintained apart from the network operator's entities.

Domain borders between different network operators:

This is the well-known roaming scenario where a user is served by another network than his home one. Roaming is already addressed by mobile networks but in the case of 3G networks there is an important additional requirement: The assumed frequent changes of applications induces a need to handle frequent changes of data sources/consumers.

The user profile data access architecture shall enable the transparent and flexible usage of the user profile data. It shall provide transparent access to distributed data fulfilling the needs of the different roles described above. Furthermore, the architecture shall address the fact that parts of the user profile data are potentially located in different administrative domains. Possible means are negotiation capabilities and proxy functionality at the domain borders.

6.5 Synchronization Requirements

The following requirements are applicable to the synchronization model:

1. It shall be possible to have one or more component instances representing a given GUP component.
2. Among these instances, one and only one shall be marked with the role of *master instance*.
3. It shall be possible to change the role of master instance for one instance to another.
4. GUP shall offer a mechanism to define *synchronized copies*, i.e. instances that are kept synchronized with the master instance.
5. GUP shall offer a mechanism to define *working copies*, i.e. instances that do not require any synchronization.

6. GUP shall make sure that synchronized copies do not conflict with the access right of the corresponding GUP components.

6.6 Data Description Requirements

The Generic User Profile is a generic, extensible profile data collection with mechanisms to e.g. create, retrieve, delete and modify the data. GUP shall define a standardised way of data description. This allows for a standardised access and handling of these data, not excluding the possibility of proprietary extensions.

Only part of the data contents are standardised within 3GPP specifications, whereas application specific data is outside the scope of the 3GPP standardisation. This specification does not mandate any 3GPP service specific data to be part of the 3GPP Generic User Profile. However the common data types shall be specified to facilitate the separate work on the service specific definitions (e.g. for the user profile in HSS).

The common data shall contain data types for at least:

- Private IDs (IMSI and IMS Private User Identity)
- Public IDs (MSISDN and SIP URL)
- Other addresses types, that are supported by 3GPP (e.g. e-mail)
- Service identifications
- Generic privacy control data
- ~~Generic error data~~
- Date and time
- Service Subscription state (e.g. "active", "not subscribed", "dormant" ...)