3GPP TSG-T (Terminals) Meeting #19
Birmingham, UK
12 - 14 March, 2003

Tdoc TP-030009

3GPP TSG-T2 #20
San Francisco, CA, USA
20 -24 January 2003

T2-030156

Title: **LS - T2 GUP Coordination Progress Report to SA2**
Response to:

Source: T2
To: SA2
Cc: TSG-T

Contact Person:
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Attachments: T2-020985, T2-030035.

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1. Overall Description:

T2 is pleased to send this Progress Report on its GUP work progress to SA2, in their role as the 3GPP GUP Co-ordinating Group.

2. GUP WID for T2 tasks:

The WID for T2 GUP Tasks was submitted to TSG-T and Approved at the December 2002 TSG-T Meeting (TP-020275).

3. Consensus Decision on the Direction of T2 GUP Technical work:

At the November 2002 T2 Meeting a Consensus Proposal (T2-020985, attached) was approved, which defines a solution strategy for the continuation of the work to define the GUP Data Description Method. This Consensus Strategy is a jointly worked out and agreed data description approach which

- is not a compromise merging two mechanisms but a stable and future-proof solution
- meets the flexibility and interoperability needed in the network
- meets the compactness and efficiency needed in terminals.

4. Re-Structure of TS23.241:

The approval of the Consensus Strategy for T2 GUP work necessitated an examination of the structure of TS23.241. As a result, a new Structure for TS23.241 was adopted at the January T2 Meeting. Currently content is being added into the TS23.241structure.

5. GUP Information Model:

As part of the work on TS23.241, T2 decided that it is appropriate to include some selected sub-parts of the GUP Information Model in Section 5 of TS23.241. SA2's attention is called to our LS T2-020982 which contained the version of the GUP Information Model which was current at that time. T2 decided to continue the effort to evolve the Information Model in T2.

6. GUP implications on UE Terminal Architecture:

T2 has previously sent LS's to SA2 (T2-020981) on the subject of GUP implications as they relate to issues within the UE architecture elements. T2 is attaching T2-030035 for information. This document describes some Terminal GUP Use Cases and the impact of these Use scenarios. T2 intends to continue this effort and to liaise with SA2 in order to assist SA2 in defining the GUP Architecture from a Terminal perspective.

7. Actions:

To SA WG2 group.

ACTION:

1. T2 requests SA2 group to kindly comment on this LS and the attached documents.
2. T2 requests SA2 to consider suggested methods for keeping the Information Model work in our respective Groups synchronized.
3. T 2 requests SA2 to review the Terminal GUP Use Cases and GUP implications on the Terminal architecture in T2-030035, and provide comment, and incorporate into the GUP Architecture as appropriate.

3. Date of next T2 Meetings:

T2#21	12-16 May 2003	San Diego, US
T2#22	25-29 Aug 2003	Cambridge, UK

3GPP TSG-T2 #19 Bundang, Korea 18-22 November 2002	***T2-0200985***

Agenda Item: **3.1**

Source: **Nokia, Ericsson, Siemens**

Title: **Consensus Proposal for GUP**

Document for: **Approval**

1. Introduction

This paper suggests a solution strategy for the continuation of the work to define the GUP data description method.

This strategy is a jointly worked out and agreed data description approach which

- is not a compromise merging two mechanisms but a stable and future-proof solution
- meets the flexibility and interoperability needed in the network
- meets the compactness and efficiency needed in terminals.

2. Solution Strategy

The solution strategy is based on following principles:

- The goal is to use one abstract data description for all GUP-data.
    - The abstract data description is used both for GUP-data stored in the network and the UE.
    - The idea of using an abstract description – in addition to concrete description(s) – is to avoid multiple and potentially inconsistent data descriptions:
        - E.g. the GUP-data stored in a UE is (as a log term goal) described only once. In other words the (abstract) data descriptions for UEM, GUP, UAprof, … are harmonised.
- The profile is split in a number of components (See T2-020910) each having independent data descriptions.

- The XML-schema in used in an abstract way to define the Profile Components.
    - By this is meant that the equivalent XML-document which could be used to represent the data is defined.
    - The use of the XML Schema as an abstract schema allowes
        - the use of this abstract schema also as a concrete scheme defining a representation of the data in the interface and/or
        - the use of other concrete schemas (or interfaces) which are derived from the abstract schema.
    - Also notice that the basic GUP information model is not a part of the abstract data descriptions.
- The solution needs to allow the integration of profile components defined using also some different description method.
- The abstract schema mechanism must support a way to include the description of semantics of the data.
    - Support for generic data management system is provided – generic in the sense that it is controlled by data descriptions.
- A subset of the XML Schema must be defined in a way allowing implementation and usage in the resource constrained terminals:
    - A strong restriction on the data description expressiveness of XML-schema for terminal data is needed.
    - It must be possible to present the data description in a compact size to allow storage of the data description it in the terminal.
    - It must be possible to interpret the data description with limited data processing power.

3GPP GUP TSG-T2#20 SWG2 T2-030035
San Francisco, USA
20th – 24th January, 2003

Source: **Siemens**

Title: **UE Use Cases for the GUP Architecture**

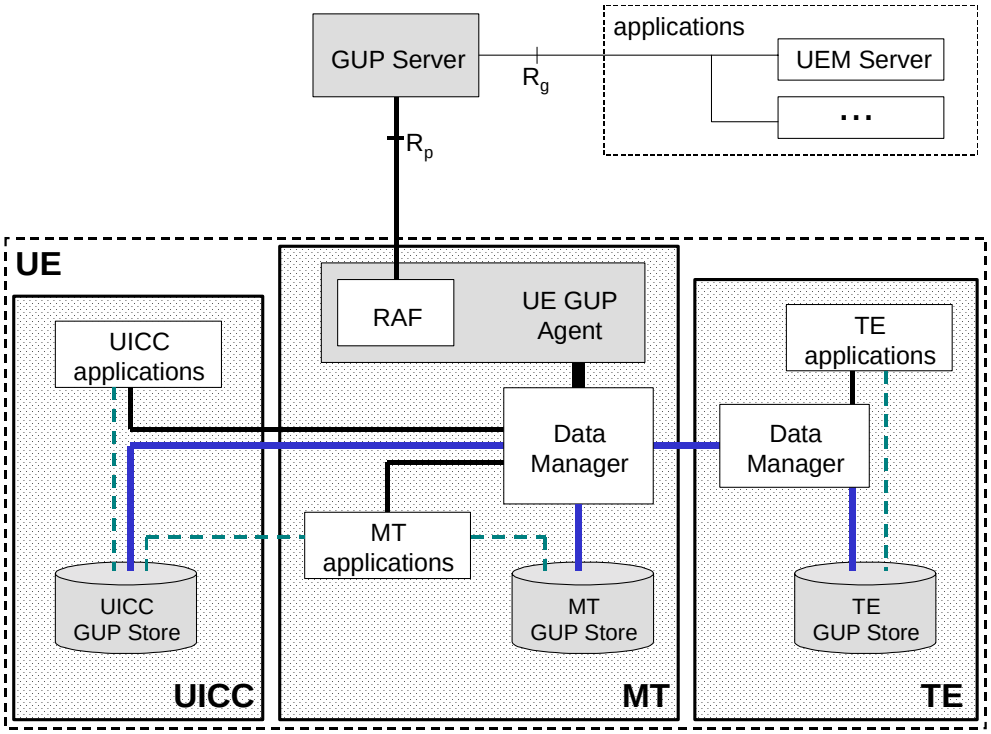
Agenda item: **GUP**

Document for: **Discussion (T2 SWG2 Action Item from Bundang)**

Introduction

During the T2 meeting #19 in Bundang the UE aspects of the GUP architecture were discussed in SWG2. It was concluded that specific terminal aspects still need to be considered in the SA2 GUP architecture draft specification. With an LS T2 informed SA2 about this potential shortcoming and volunteered to provide more detailed information about important terminal use cases. This document is intended as a basis for identifying and highlighting relevant use cases and terminal aspects.

The following figure illustrates a possible approach for the incorporation of UE components into the current SA2 GUP architecture that can be used as a starting point for the necessary discussions.



Elements of the GUP UE architecture

- **RAF (Repository Access Function):** This part of the current SA2 GUP architecture realizes the GUP Harmonized Access interface. Therefore the RAF must be located at the R_p reference point on UE side.
- **UE GUP Agent:** It is assumed that the MT acts as a GUP "single point of entry" in the UE. Then the MT must contain a module to perform this task. The module is called *UE GUP Agent*.
- **Data Manager:** This element is responsible for the data management within the UE. The functions of the Data Manager comprise for instance security, synchronization, and the data handling between UE entities like MT and TE. In the MT the Data Manager is closely linked with the UE GUP Agent.

Use Cases

Use Case 1: MT applications access GUP data in an external TE

An MT application creates, reads, modifies, or deletes user profile data that are stored in a TE.

Actors:
1) MT
2) external TE

Pre-Conditions:
1) An MT is connected with an external TE.
   (The transport protocol may vary and does not matter for the use case.)
2) No radio access to the 3GPP network is required.
   (Thus the UE may not be able to access the GUP Server.)
3) Each TE uses the same data exchange mechanisms.
   (Beside of the protocol this provides the required local access policy.)

Flow:
1) As the MT application does not have a direct link to TE data repositories the MT must involve the Data Manager which provides access to the TE data. Therefore the MT application sends a request for the data operation to the MT Data Manager.
2) The MT Data Manager determines the location of the TE data and provides the needed functionality for authentication, integrity, and confidentiality. The UE GUP Agent may assist.
3) Now the MT Data Manager performs the requested data operation by sending the appropriate commands to the TE Data Manager.
4) The TE Data Manager has direct access to the TE GUP data repository and executes the MT commands. Results are sent to the MT application via the MT Data Manager.

Alternatives:
1) The MT application could be able to access the TE data repositories directly without involving a Data Manager. In this case either no access policy is applied or a non-standardized protection is used. Therefore the case would not differ from the access of MT-internal data by the MT.
2) All TE GUP data might be copied to the MT. When needed the Data Manager would have to synchronize the data repositories in order to update the TE GUP data located in the MT. In this case the MT applications could handle MT and TE GUP data in nearly the same way.

Use Case 2: MT applications access GUP data on the UICC

An MT application creates, reads, modifies, or deletes user profile data that are stored on the UICC. The MT-UICC scenario differs from the MT-TE scenario as the UICC must be always present for a 3GPP radio access. The MT and UICC are also tied together on application level (e.g. MMS parameter storage on the USIM).

Actors:
1) MT
2) UICC

Pre-Conditions:
1) The UICC is located within the terminal device.
2) There is a trusted relationship between the MT and the UICC.
   (Accordingly no GUP access policy is needed to access the UICC GUP store.)

Flow:
1) MT applications (e.g. MMS client) may access the UICC GUP store directly via the standardized MT-UICC interface.
2) Alternatively the MT applications can utilize the capabilities of the MT Data Manager. For instance the Data Manager could help to prevent data inconsistency problems or to locate a particular piece of information.

Use Case 3: TE applications access GUP data on the UICC

In contrast to the MT the UICC does not contain a Data Manager for the data exchange with a TE. Thus the TE depends on the support of the MT Data Manager that is able to access UICC GUP data.

Actors:
1) external TE
2) UICC
3) MT

Pre-Conditions:
1) The UICC is located within the terminal device.
2) The TE has to access the UICC GUP data store via the MT.

Flow:
1) First the TE signals a request to the MT Data Manager that it wants to create, read, modify, or delete user profile data stored on the UICC.
2) Not in all cases the TE will know the location of particular GUP data. Then the Data Manager must determine the current location of the data.
3) The Data Manager ensures the security of the data operation. The UE GUP Agent may have to support the MT Data Manager. For instance the UE GUP Agent could maintain GUP-specific access policies which must be applied at GUP-related operations.
4) Now the MT Data Manager executes the needed operations on the UICC GUP data and sends the results back to the TE application via the TE Data Manager.

Alternatives:
1) The TE applications could contact the UE GUP Agent instead of the Data Manager. Then the UE GUP Agent would act as the master of the process and coordinate the different tasks. The MT Data Manager would become a proxy.

Use Case 4: TE applications access UE-external GUP data

This use case covers all scenarios where UE applications access UE-external GUP data. In each case the application would have to trigger the MT Data Manager which would initiate the necessary actions in the UE GUP Agent. In the examined case the applications run in the TE what requires the involvement of a second Data Manager. Therefore this use case is the more challenging one.

Actors:
1) external TE
2) GUP network architecture with a GUP Server
3) MT

Pre-Conditions:
1) A radio link is established between UE and GUP Server.
2) The GUP server manages the GUP access policy for the UE.

Flow:
1) The TE application does not distinguish between data stored in the MT, on the UICC or outside of the UE. Always the TE application triggers the TE Data Manager that has to run the necessary protocol with the MT Data Manager.
2) The MT Data Manager forwards the request to the UE GUP Agent.
3) Now the UE GUP Agent contacts the GUP Server according to the R_g protocol and informs about the intended operation.
4) The GUP Server helps to establish a connection between the UE and the device that contains the right GUP data store.
5) Afterwards the MT Data Manager and the Data Manager of the external data store run the protocol to execute the data operation. The source of the commands would be the TE Data Manager which could be more or less involved in the process.

Alternatives:
1) The TE Data Manager might directly communicate with the Data Manager of the device of the UE-external application. This means that the protocol would be tunneled through the MT Data Manager. Nevertheless the UE GUP Agent needs to be involved as in the scenario above.

Use Case 5: External applications access UE GUP data via the GUP Server

The GUP Server does not know the current components of the UE or the distribution of the UE GUP data over the different UE GUP stores. The GUP Server merely contacts the UE as a whole entity and the UE GUP Agent has to address the correct UE component. Therefore this use case can cover all scenarios where UE-external applications access data in MT, TE, or UICC GUP repositories.

Actors:
1) Applications outside of the UE
2) GUP network architecture with a GUP Server
3) UE (comprising MT and UICC but not necessarily a TE)

Pre-Conditions:
1) A radio link is established between UE and GUP Server.
2) The GUP server manages the GUP access policy for the UE.

Flow:

1) The GUP Server forwards a request of a UE-external application to create, read, modify, or delete user profile data in the UE. The request is received by the UE GUP Agent.
2) The RAF module in the UE GUP Agent interprets the received commands and data.
3) Together with the Data Manager the UE GUP Agent checks the data location within the UE. If the data are stored in an external TE then the data may be not accessible.
4) The UICC and the MT GUP stores can be accessed directly by the UE GUP Agent. For the access to the TE GUP store the Data Manager is required.
5) When the UE GUP Agent was requested to read data then these data are sent to the GUP Server. Before the transmission the RAF transforms the data to the right transport format.

Discussion

- Typically the Data Manager would have to be based on SyncML DM and may comprise more than one module. For instance the UE Data Manager may act as a master for the UE data management and could consist of an agent module and a more basic module for the data operations. In light of SyncML DM the relationship and functional split between the Data Manager and the UE GUP Agent must be analyzed in more detail.
- The first agreements should clarify the general role of the UE in the GUP architecture. Is the UE a black box for the GUP Server? Does the GUP Server handle the data access policy for the UE or would the usage of SyncML favor a UE-based access policy? Who has to carry out the synchronization of UE GUP data copies? Which UE-related interfaces would be specified in GUP? Afterwards more detailed aspects like the data operations for TE data could be analyzed in accordance with the general understanding.