3GPP TSG-SA Meeting #13
Beijing, China, 24 - 27 September, 2001

Tdoc SP-010557

Title: **Liaison Statement on Generic User Profile (GUP)**
Source: 3GPP TSG-SA
To: The SyncML Initiative
Cc: 3GPP Generic User Profile Mailing List

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Attachments:

UP-010044	Draft TS 22.xxx v0.1.0	22.xxx Rapporteur (Paul AMERY- ORANGE)

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1. Overall Description:

TSG-SA notes that there was a recent meeting of the 3GPP Generic User Profile ad-hoc and that there was interest in conveying the following information to SyncML:

> The 3GPP GUP ad hoc is currently exploring the benefits of standardising User Profile parameters and their associated management and communications methods. The ad-hoc is currently developing TS 22.xxx "3GPP Generic User Profile Stage 1" in which the concept and requirements of the User Profile are defined.
>
> The GUP ad hoc looks forward to working productively together with the SyncML initiative as have other groups within 3GPP on these and future areas of mutual interest.

The next meeting on User Profile will be October 10-12 (provisionally in Stuttgart, Germany).

2. Actions:

3GPP TSG-SA invites SyncML to convey a status update on any and all SyncML initiative efforts in this area (e.g., activities in progress in the SyncML initiative's Device Management (DevMan) working group).

3GPP TSG-SA would also like to request that, if the SyncML initiative has such on-going applicable efforts, that the SyncML initiative provide a specification or guideline defining the preferred format(s) for parameters used with such a management method.

Further, 3GPP TSG-SA would like to request that the SyncML initiative provide a technical overview of SyncML's usage in server to server synchronisation and management to the convened CN4 meeting in Brighton, UK, on 15-19 October, 2001.
Please let us know when such updates, presentations, and information may be available.

Replies to this Liaison Statement should be sent only to 3GPP TSG SA Working Group 1 (SA1), and will be distributed amongst the 3GPP community via the 3GPP_TSG_SA_WG1_UserProfile mailing list.

3. Date of Next Meetings:

Generic User Profile	10-12 October	Stuttgart, Germany?

3GPP TS 22.xxx V0.1.0 (2001-09)

Technical Specification

3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Service aspects; Stage 1 Service Requirement for the 3GPP Generic User Profile (GUP) (Release 5)

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Contents

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, e.g. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The 3GPP Generic User Profile is the collection of data which is stored and managed by different entities such as the UE, the Home Environment, the Visited Network and Value Added Service Provider, which affects the way in which an individual user experiences services. The 3GPP Generic User Profile is composed of a number of User Profile Components. An individual service may make use of a number of these components. The 3GPP Generic User Profile will be accessed by the user, used in capability negotiation, managed by terminal management servers, accessed by applications and used in other ways. The fact of having several domains within the 3GPP mobile system (e.g. Circuit-Switched, Packet-Switched, IP Multimedia Subsystem and the Service/Application domains) introduces a wide distribution of data associated with the user.

1 Scope

The present document defines the stage one description to the 3GPP Generic User Profile (GUP). It specifies requirements to the 3GPP Generic User Profile, seen primarily from the user, home environment, visited network and service provider's points of view.

This TS includes information applicable to the home environment, device- and network manufacturers and service providers which are sufficient to provide complete support of services in 3GPP networks.

While the 3GPP Generic User Profile may contain components that are out of scope of 3GPP (e.g. for services offered by third parties) the requirements in this specification pertain only to those components that lie within the 3GPP system.

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 21.905: 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications

[2] 3GPP TS 22.121: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects Service Aspects; The Virtual Home Environment"

[3] 3GPP TS 22.097: "Multiple Subscriber Profile (MSP) Phase 1; Service description - Stage 1 "

[4] 3G TS 21.133: "3G Security; Security Threats and Requirements"

3 Definitions, symbols and abbreviations

Here is only included definitions that are in addition to that in 21.905

3.1 Definitions

3GPP Generic User Profile: The 3GPP Generic User Profile is the collection of data which is stored and managed by different entities such as the UE, the Home Environment, the Visited Network and Value Added Service Provider, which affects the way in which an individual user experiences services.

[Editor's note: Check definition of Subscriber and User in 21.905]

Data Consumer*:* A data consumer is an entity which uses data stored and controlled by another network entity.

Data Source: A data source is an entity which stores and controls data relevant for its operation.

User Profile Component: [Editor's note: Need to tie in with used definition in Section 4] User profile components are all the detailed data that specifies: General user and subscriber info, terminal and application capabilities, subscriber settings, user preferences, user settings, identifiers, security policies and settings, etc.

3.2 Abbreviations

Here is only included definitions that are in addition to that in 21.905. For the purposes of the present document, the following abbreviations apply:

GUP 3GPP Generic User Profile

4 General description

The 3GPP Generic User Profile is the collection of data which is stored and managed by different entities such as the UE, the Home Environment, the Visited Network and Value Added Service Provider, which affects the way in which an individual user experiences services. The 3GPP Generic User Profile is composed of a number of User Profile Components. An individual service may make use of a number of User Profile Components (subset) from the 3GPP Generic User Profile.

4.1 3GPP Generic User Profile Concept

Comment: We need to expand the Generic User Profile Concept,

The advantage of specifying a Generic concept is that the user profile can easily be extended. All new data that will become part of the User Profile, and all new services that will be developed can use the already existing mechanism defined for the 3GPP Generic User Profile concept. Only some parts of the User related data are part of the 3GPP Generic User Profile, which can be classified in the following categories: **[Editor's note: need to make the following text flow better]**

Part of 3GPP Generic User Profile:
- Data that affects the way in which an individual user experiences services.
- Settings/Preferences. Configuration data, administration data, object identifiers
- Capability descriptions

Examples of data categories that are not part of 3GPP Generic User Profile

- Run Time Data. The data that is created during the initiation of the session, call or application execution and if they are only available during the lifetime of such session, call or application execution then they are considered as Run Time data.

- Historic/Statistic Data. User/system behaviour information (e.g. statistics on the usage preferred web pages; duration, number of call; error rate)

4.2 User Profile Component

[Editor's Note: To be added. Examples to discuss include User Information, QoS, Screen characteristics. Also need a diagram illustrating the relationship of component, 3GPP Generic User Profile and data]

A user has one single 3GPP Generic User Profile, and this Generic User Profile consists of User Profile components.

A user may have zero, one [Editor's note: may need to add comma] or more instances (specific values) of a specific User Profile component, which is defined here as a logical grouping of related data. An instance of a User Profile component includes identity, type, structure, access rights, storage locations, and ownership. There are 2 scenarios to consider for the instantiation of a User Profile component:

- An instance of a component is stored in one location, but might be copied to other locations for reasons such as efficiency.

- Several instances of a component exist with different content (e.g. a Qos instance relative to home use and travelling)

4.3 User Profile Data Classification

The data that constitute the 3GPP Generic User Profile can be classified according to the following classification criteria (the list is not exhaustive):

(a) Their usage:

- **Network access and Mobility data**
  These are data like IMSI, MSISDNs, ... of a user which are maintained by the HE-Network to provide access to the mobile network to the user. Generally only the HE-Network controls these data
- **Service independent personalised data**
  Personalised data, are data of the User Profile which are independent of services (e.g UE interface preferences set within the capabilities of the UE and serving network);
- **Service provisioning data**
  These are data that determine, whether a particular service is provisioned to a user or not. Generally either the HE-Network or the Service Provider controls these data. Typically these Service provisioning data also include certain service settings, which are not under the control of the user. If a user tries to invoke a service the Provisioning data of this service need to be checked
- **Service customisation data**
  These are service specific data that customise a particular service according to the preferences of the user. If a user has multiple Services Customisation Sets the Service Customisation Data of a service may be different in different Services Customisation Sets. Generally the user and the service provider control these data

(b) Their storage location:

- **Data in the HE-network**
  ...
- **Data in the UICC**
  ...
- **Data in the Terminals of the user**
  ...
- **Data in the HE-VASP's server**
- **Data in the Visited Network**

(c) Ownership:

- **Data under control of the HE-network**
  ...
- **Data under control of the HE-VASP**
  ...
- **Data under control of the User**
  ...

(d) Types:

4.4 Data Consumers and Data Source Categories

A general feature of the user profile is that the different network entities are data consumers for a certain subset of the user profile and are data sources for another part. As a result, the user profile is a highly distributed data set across different network elements and administrative domains.

[Editor's note: Perhaps it would be better to replace the following text with an example list, taken from UP-010021, Siemens contribution]

A categorization is proposed for the different data consumers/sources into different roles. Those roles can have very different characteristics and induce different requirements to the user profile management architecture.

Core Network **(CN)** [data source and consumer] elements are interacting on the base of a well-defined standardized data model with narrow focus. They are characterized by infrequent changes of the used data model, high throughput, and short response time. Communication and data exchange between CN-network elements is done via

standardized protocol relationship with static data structures. *Changes of CN-functionality is assumed to be infrequent.*

Operation and Maintenance **(OAM)** [data consumer]: OAM activities related to user profile are provisioning and administration of subscriber data by the network operator. These activities are characterized by needs for high throughput and longer response time. In order to allow simple and centralized administration it should be transparent to the administrator where the different parts of the subscriber data is stored. As a result, this role needs a single system image on user profile, or, on functional terms, a common data access function.

UE [Editor's note: include definition of role]

The other roles are represented by applications. Generally, every application splits into two parts: First, the part providing the actual service the user is subscribing for (i.e. service execution) and, second, the part which is used by the subscriber to change his personal service preferences (i.e. service customization):

RealTime-Application*:* This is the first part of an application using data with stronger requirements on response time (being the time where a data change becomes effective) but less requirements on throughput than core network elements. *Changes of behavior, data model, or even existence of applications are assumed frequent.*

Management-Application *(subscriber self administration):* The part of an application used for subscriber-specific service self-administration using data with weaker requirements on response time and on throughput.

5 High level requirements

5.1 General User Requirements to support the User

Requirement for personalisation of services:
- The 3GPP Generic User Profile shall enable personalisation of a user's services.

- The User shall be able to define a Default User Profile to use which meets their minimal requirements in case the entire set of expected User Profile components are not available. In such a case, the Default User Profile shall be enabled. An example of this is when one or more data sources (e.g. servers), holding key profile components are not available. The User requires her User Profile to be available to provide the Data consumer (e.g. ISP) with the ability to perform content negotiation. Rather than experience no level of service personalisation, the user shall be provided with a Default User Profile, that meets their minimum expectations.

[Editor's note: Do the following bullet points truly relate to 3GPP Generic User Profile requirements? They seem to be focused more on general service behaviour]

Requirement for recovery of terminal-based services:
For services that have been provisioned to the user by the HE-Operator and/or HE-VASPs, the user shall have the possibility to:

[Editor's note: Remove this next later, change terminal to UE]

- Recover the set of services she has downloaded to her terminal in case of loss or damage of that terminal. Recovery will be performed at the new terminal. This requirement applies only to those services, that were installed in the terminal via 3GPP capabilities and only if the original service is still available and can still be downloaded.

- Recover persistent service customisation data which are stored in the terminal if the terminal is lost or damaged of the terminal at the new terminal. This requirement applies only to those persistent service customisation data , that were stored in the terminal via 3GPP capabilities (e.g. MExE)

- Transfer persistent service customisation data which are stored in the terminal to a different terminal. This requirement applies only to those persistent service customisation data , that were stored in the terminal via 3GPP capabilities (e.g. MExE)

5.2 Management, Provisioning and Access

The 3GPP Generic User Profile may need to be accessed by:

- The network entities that perform call/session control
- The operator for OA&M administration
- Applications for operator specific services
- OSA to provide secure access mechanism for services

It shall be possible based on user privacy settings, to permit the secure authorised access by the network operator, HE-VASP and user to:

- create one or more User Profiles
- request information contained in a User Profile
- delete a User Profile
- modify a User Profile
- define the default User Profile
- define the criteria for automatically selecting User Profiles

5.3 Synchronization Aspects

[Editor's note: This text has been adapted from 22.121, but changes to 22.121 may need to be made where appropriate]

Mechanisms shall be identified to enable the mutual synchronisation of the User Profile information stored in the distributed entities such as ME, (U)SIM, Home Environment and HE-VASP. The HE shall be able to perform a synchronisation of the User Profile when it is deemed appropriate. The user shall be able to defer a User Profile synchronisation if she desires and schedule it for a later time. It shall be possible for the user to pre-define when synchronisation of the User Profile should take place (e.g. when services data is modified).

5.4 MMI Aspects

The user shall be able to activate, deactivate, and customise components of her 3GPP Generic User Profile by action at the User Equipment.

[Editor's note: need to extend UE i.e. Access Device]

5.5 UE requirements

Services may be provided to the user by applications that are executed in the UE. Within this specification only requirements on the GUP are stated for those applications in the UICC and the Mobile Equipment that function via 3GPP standardised mechanisms (e.g. SAT and MExE). Other applications in the UICC or applications in the TE are out of scope of this specification.

For services provided by the HE-Network or HE-VASP these applications shall be able to:

- Supply sufficient GUP data to the HE-network to allow re-installation of the application in case of a necessary recovery of the terminal

[Editor's note: much further work required]

5.6 Home Environment requirements

This chapter specifies requirements on the HE-Network and HE-VASPs to enable the 3GPP Generic User Profile.

This specification does not address requirements for VASPs to enable the 3GPP Generic User Profile, which is outside of the scope of this specification. However, VASPs that wish to support the 3GPP Generic User Profile are referred to the requirements below.

5.6.1 Requirements of the HE-Network concerning management of and access to the GUP

The HE-Network shall be able to control and administer the following parts of the 3GPP Generic User Profile of her users:

- Network access and Mobility data
- The Services Customisation Sets (IDs, Status – active/inactive - ...) of a user.
- Service Provisioning data of services, which are either offered directly by the HE-Network or by an HE-VASP in collaboration with the HE-Operator.

Note: Optionally it shall be possible that Service Provisioning data of services, which are offered by an HE-VASP, are administered by that HE-VASP hersself. In such a case the network has no responsibility to store provisioning data of the service and provisioning is not checked by the network but may be checked by mechanisms of the HE-VASP which are outside of standardisation.

- Service Customisation data of services, which are offered by the HE-Network herself.

The HE-Network shall be able to control and administer backup data for her users, that are necessary for recovery of the terminal-based parts of the the 3GPP Generic User Profile. In particular the HE-Network shall be able to

- Start the recovery process.
- Notify – via a standardised mechanism – HE-VASP applications in the terminal to initiate recovery of terminal-based HE-VASP parts of the GUP.

A common access mechanism to all data sources of the HE-Network, that are within the 3GPP scope, shall be standardised. The HE-Network shall be able to grant access to some parts of the GUP, that are under HE-Network's control, according to the following principles:

- This access mechanism shall allow an application to create, modify and delete data of those parts of the GUP, for which the necessary access rights had been granted by the HE-Network.
- The access mechanism shall be extensible so that non standardised data sources and future 3GPP data sources are capable to implement this access mechanism. In particular the access mechanism shall be independent of the semantics of the GUP data.
- The access mechanism shall check access rights of an application before the application may access GUP data. These access rights shall be based on:
  - The identity of the user
  - The identity of the application
  - The part of the GUP that is accessed
  - The intended access method (create, modify, delete)
- The access mechanism shall also be useful for OAM purposes.

5.6.2 Requirements of HE-VASPs concerning management of and access to the GUP

For the users, to whom he provides services, and subject to access right restrictions set by the HE-Network the HE-VASP shall be able to access GUP data from the HE-Network via the common access mechanism.

Note: E.g. data like Service Provisioning data of services, that are offered by the HE-VASP or the currently active Services Customisation Set of a user will need to be accessed by the HE-VASP.

The HE-VASP shall be able to grant access to some parts of the GUP, that are under HE-VASP's control, via the common access mechanism.

5.7 Visited Network requirements

[Editor's note: further work required, if additional to Home Environment requirements]

6 Security

[Editor's note: May need change to 22.121 v 5.1.0 chapter 7.9 >

Secure mechanisms shall be available for the transfer of User Profile data to, from or between authorised entities. Access to User Profile data shall only be permitted in an authorised and secure manner. The secure mechanisms to be applied shall be appropriate to the level of confidentiality of the data, the endpoints of the transfer and the routes that are available for the transfer of the data. The owner of the data, normally the body storing the master copy of the data, shall be responsible for applying the appropriate level of security to the transfer of the data.

The secure mechanisms available shall include the following:

- Before any user data transfer takes place, it shall be possible for the sender of the data to verify the identity of the recipient.
- It shall be possible for the recipient of data to identify the sender.
- It is permissible for either the sender or recipient of data to employ the services of a third party, known to, and trusted by, both in order to provide authentication of identity.
- The validity of an authentication of identity shall, if required, be subject to a maximum time limit.
- It shall be possible for the sender of data to render the data to be unreadable by any party not authorised to receive it.
- It shall be possible for the recipient of data to detect whether the sender has made any change to the data subsequent to its transmission.
- The security mechanisms shall provide verification that the data has been sent by the sender and received by the recipient (non-repudiation).
- It shall be possible for the sender and/or the recipient to create an audit log of all data transfer transactions of a specified type, provided that this requirement is made known before any transfer takes place.
- User profile data in general is proprietary data owned by some companies. These data may not be exposed to everyone and not for free. *Access control* to the data is required. This access control must also apply to data which is located at legacy systems, currently without own access control functionality.
- Correct setting of data values in the user profile may be critical for the integrity of certain network services. Therefore, *consistency checks* are needed to minimize the risk.
- Transaction security for the change of data should be available in order to ensure the consistent change of data at different locations.

7 Privacy

It shall be possible for the user to define privacy requirements for components of the 3GPP Generic User Profile to determine access rights. The privacy requirements shall fulfill local privacy regulations.

[Editor's note: further work required]

8 Charging

It shall be possible to support charging for the management, access and use of the 3GPP Generic User Profile. (e.g. for capability negotiation or remote diagnostic information gathering)

9 Roaming

The 3GPP Generic User Profile shall be available globally when roaming

[Editor's note: discussion held regarding the difficulty of achieving global roaming and also include references to VHE]

10 Robustness of Service

Where the full capabilities of the 3GPP Generic User Profile are not available because of failure of an entity or human error – the User shall experience a graceful degradation of service behaviour.

[Editor's note: need to decide usage of term 'service behaviour', because services should still work regardless of GUP]

11 Administration

[Editor's note: may need to remove 'architecture' references, and require further discussion]

In the 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:

1. 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 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.

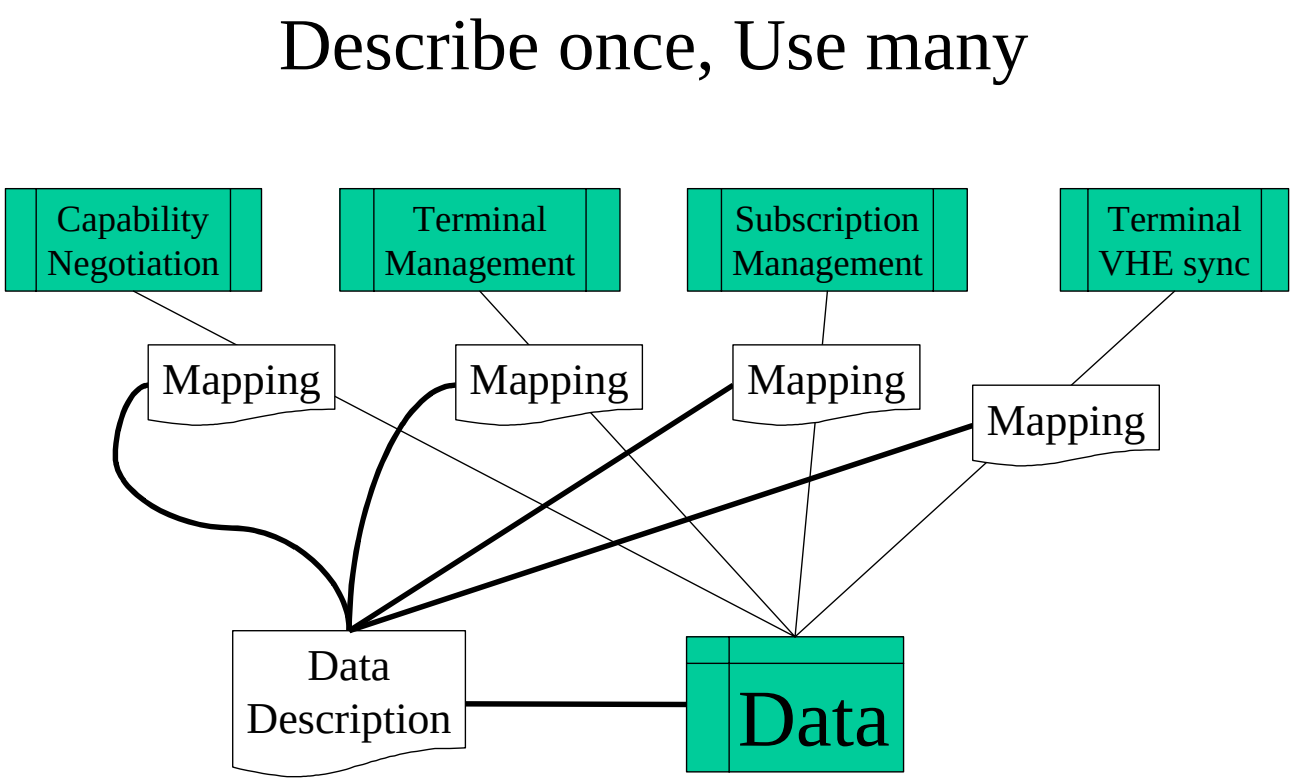
2. Domain borders between different network operators: This is the well-known roaming scenario where a user is served by another network than his home one. Roaming is already addressed by mobile networks but in the case of 3G networks there is an important additional requirement: The assumed frequent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

As a result, 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 is potentially located in different administrative domains. Possible means are negotiation capabilities and proxy functionality at the domain borders.

12 Data Description Framework

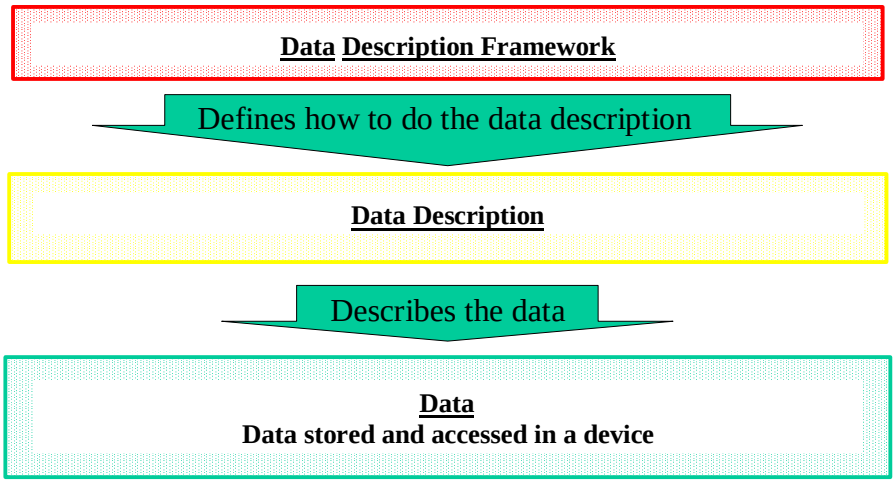
[Editor's note: Section 12 may be removed, and used within a new 21.xxx working document]

As the data contained in the 3GPP Generic User Profile is going to be handled by different applications and entities for different purposes, there is a risk that various description methods might lead to duplications and/or inconsistencies. Therefore, a single description method should be used for the 3GPP mobile systems specifications.



The Data Description Framework defines the method to describe the data in a User Profile. It defines the structure of the data description. It is standardised and used for all 3GPP Generic User Profile.

The Data Description Framework also defines a default representation (or transport format) of Data Descriptions and the data in a User Profile.



As shown in the picture, the data description can be split in the following domains:

- **Data**
  Data stored and or accessed in a User Profile. The structure and semantic of the data in the User Profile is described in the Data Description. The Data Description Framework also defines a default representation of the data in the User Profile.

- **Data Description**
  describes the data contained in the User Profile. (This also called the Schema level.)

- **Data Description Framework**
  Defines how to create the data description. (This also called the Schema-Schema level e.g. the Schema describing the Schema, which describes the data.)

12.1 Requirements on the Data Description Framework

Below a list of requirements on the description of the User Profile is included. It is important that this list includes all the requirements on the data description coming from the different usage of the data, in order to promote the common data description. This list might not be complete yet.

12.1.1 Fulfil Functional Requirements from use cases

The requirement from the Use Cases describing functions related to User profile: read/write/delete/add elements in the user profile

12.1.2 Security and accessibility

The data description fulfil requirements related to security such as access rights, since the user profiles will be used in several contexts such as for management mechanisms

12.1.3 Re-usable description components

It must be possible to divide the description in parts called description component. A description component can be use in many User Profile components. It is reusable.

Motivations:

- Identical parts of the User Profile are described once
- The responsibility of defining description components can be distributed between different organisations, standardisation bodies or technical groups in 3GPP
- Some description components are standardised and some components are late defined and/or just published (manufacturer specific components).

12.1.4 Data syntax

The data description must have a good way to describe structure, ranges, default values of the data elements.

Motivations:

- Decrease the errors when handling the data.
- It will help the development of management tools.
- Automatic validity checks of values possible.

12.1.5 Data semantic

The data description must have a good way to describe the meaning (semantic) of the data elements.

Motivations:

- Decrease the errors when handling the data.
- It will help the development of management tools.

12.1.6 Computer parseable Data Description

The data description must be computer parseable and interpretable by human beings.

Motivations:

- There will be a significant amount of data description and it will be very costly if manual translation is needed.
- An automatic translation to other description formats can be implemented.
- It will help the development of management tools.

12.1.7 Define a Default Transport Format

Define a default transport format for the Data Description and for the Data

12.1.8 Support Backward compatibly

The data description must support co-existence with other already existing description method.

Motivation:

- Avoid to redo all existing data descriptions

12.1.9 Extendability

The data description shall support the addition of new data/description components. That gives the possibility, as well, to start with a small set of features and then add support for more things.

Motivations:

- The introduction of the data description must be done stepwise.
  Potential first application areas are Terminal Configuration and Capability Information Exchange.
- In the future more data will be part of the user profile, it should be easy to add it in the selected data description
- Add easily Manufacturer specific data/description components

12.1.10 Data Oriented

The data description should describe the data and not an interface to the data.

Motivations:

- The User Profile is a set of data and not an interface to a program used to access the data. It is more cost efficient to use a schema definition language, such as XML schema, then an interface oriented approach.
- It is easier to map an interface to the data on the data description than the reverse

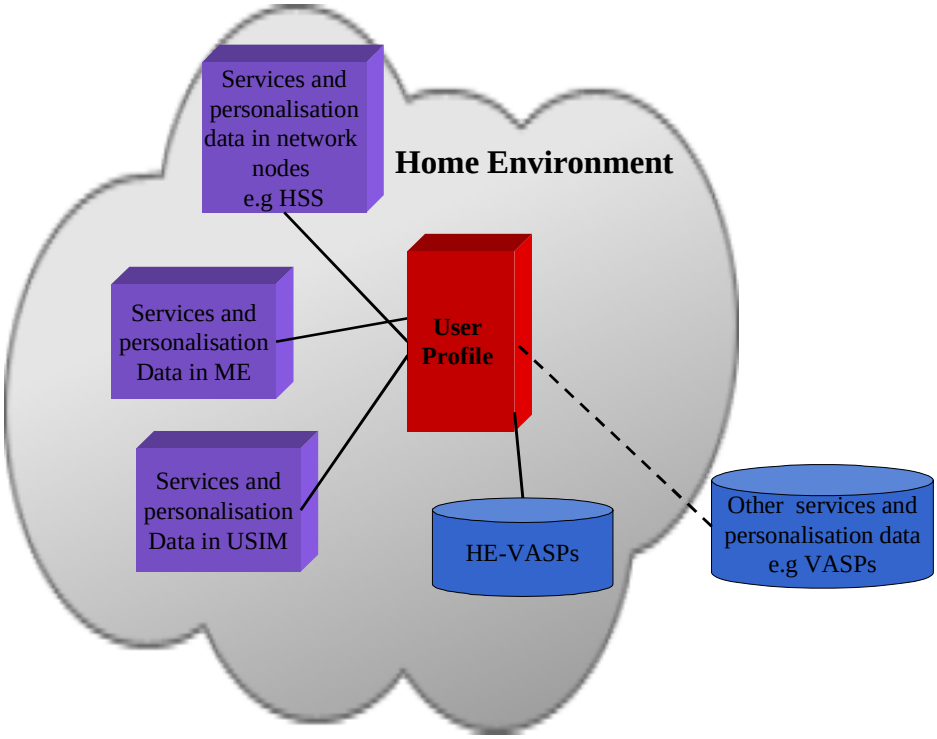
12.1.11 Expressiveness Balance

There must be a balance between the expressiveness to describe data and the needed complexity in the implementations using data descriptions.

Annex <A>: Example 3GPP Generic User Profile use cases

The following diagram is for informative purposes. It presents an example of the distributed locations of the User Profile components, as an aid for illustrating the listed use cases.

[Editor's Note: The following 3 diagrams are held temporarily, and may need to be redrawn]



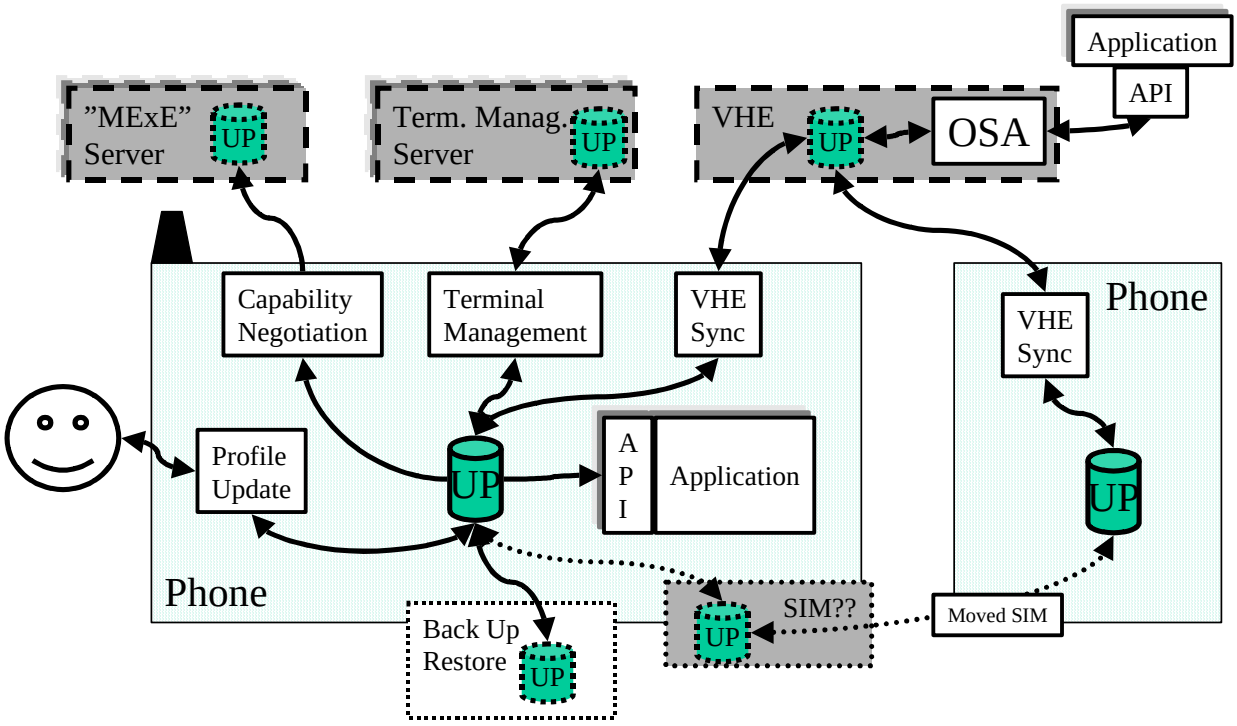
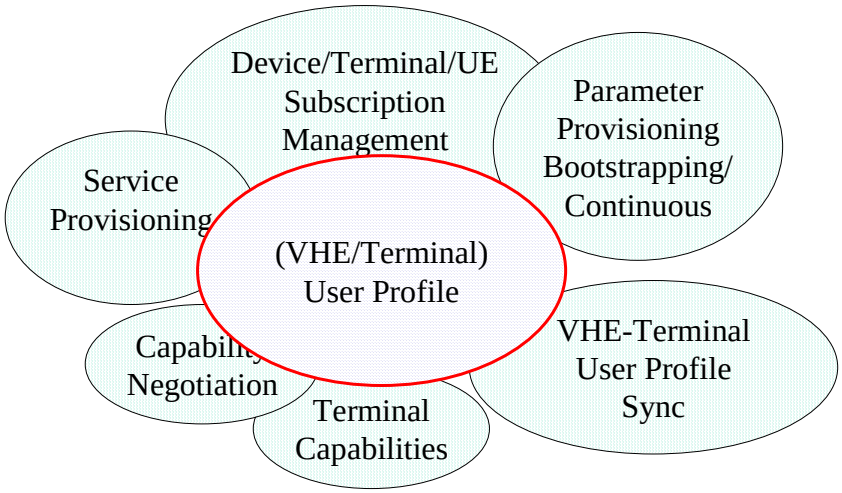


Figure x: Distributed View of the 3GPP Generic User Profile

Some User Profile Related Functions



1. Setting up a Subscription.

- Precondition
  - A person has just purchased a new device, and requires subscription to be initiated in the shop.
- Actions
  - The user preferences for services are established.
  - Information about the terminal capabilities are received from the UE.
  - User Profile content is created for the Subscriber, and downloaded over the air, via local link or similar
- Post-condition
  - The user can leave the shop. Her phone/device is ready to use. Basic settings needed to start and run initial applications ready.

2. Initial Service Configuration (Bootstrap)

- Precondition
  - No settings made, user with a subscription
- Actions
  - Settings, partly based on user profile downloaded over the air, via local link or similar
  - The download initiated by the service provider, network operator, 3rd party or user
- User Data
  - Setting received could include basic connectivity configuration parameters and the user's security policy
- Post-condition
  - The user's phone/device ready to use. Basic settings needed to start and run initial applications ready

3. Backup / Restore of User Profile Components stored in the UE

- Precondition
  - The phone is configured, all the user preferences are set.
  - The settings include user profile parameters such as generic parameters, service personalisation parameters, user's security policy and other user preferences
- Actions
  - The user wishes to backup or restore the current version, or parts of the current user profile to the network, or to another user's terminal.
  - The backup/restore is performed via local link or remotely towards the network
  - The backup/restore can be initiated by the user, the service provider, 3rd parties or the network operator
- User Profile Storage
  - Secure area of the (U)SIM or ME or retained in the network by the service provider. User private data is only stored in the network with the user permission.

4. Content Negotiation

[Comment: add Push Stage 1 diagram for content negotiation]

- Precondition
  - The user has set her preferences in the UE
  - Terminal type capability information is stored in ”internet”
- Actions
  - The user initiates request for content. The request contains:

    User preference fetched from the UP

    Reference to the capability information is stored in ”inter net”

    Deviating capability information

  - Returned content selected or tailored according to User preferences and capability information

5. Application Access to User Profile Data using OSA (Pull Scenario)

- Precondition
  - The [OSA] application is registered with the OSA framework
  - The [OSA] application is authorised to access the user profile management Service Control Function and use methods which permit read/write data in user profiles
- Actions
  - The application uses OSA to read/write data in the user profile of the user
  - The network provides the requested data or modifies the data as requested
- Post-condition
  - Consistency of the user profile data

6. Notification of user subscription to an HE-VASP application using OSA (Push Scenario)

- Precondition
  - The OSA application from the HE-VASP is registered with the OSA framework
  - The OSA application is authorized to receive subscription / unsubscription notifications
  - The OSA application has subscribed to the notification permitting to it to know when new users have subscribed to the service implemented by the OSA application
- Actions
  - A new user subscribes to the service implemented by the OSA application
  - The Home Environment notifies the OSA application about a new subscription and provides it with relevant information (e.g. identity of the user)
  - Possibly the OSA application provides the home environment with a link (e.g. URL) to a location where the user can customize the service

- Post-conditions
    - The OSA application can now have access to home environment -owned user profile information for this user, provided that it is granted the related access rights
    - The user can customize service data for the service implemented by the OSA application

7. Customization of service specific data for a VHE service provided by an HE-VASP

- Preconditions
    - The user has a VHE subscription
    - The user is subscribed to the service provided by the HE-VASP
    - There is a link from the user Personal Service Environment (PSE) to the HE-VASP for service customization
    - The user has access to her PSE and has successfully been logged to it
- Actions
    - The user accesses her PSE and decides to customize the service provided by the HE-VASP
    - She transparently access a service customization interface provided by the HE-VASP (possibly via a hyperlink)
    - She defines/modifies service customization data, which are managed and stored by the HE-VASP
- Post-condition
    - Next time she uses the service, new customization data will be used

8. Terminal Management – Manual Helpdesk

- Precondition
    - A user is complaining because her pocket web browser does not work. He calls the helpdesk
- Actions
    - The UE capabilities are established by the helpdesk person
    - A helpdesk person at an operator, service provider or enterprise verifies that the correct operating parameters are set on the device of a complaining user
- Post-condition
    - The user's is happy. The pocket web browser is running correctly

9. Terminal Management – Automated Self Fixing

- Precondition
    - A software agent on the user’s device identifies an error.
- Actions
    - It contacts the helpdesk software entity to fix the problem.
    - The UE capabilities are established by the automated self-fixing solution.

- The self-fixing solution correctly diagnoses the error and provisions a bug fix.

- Post-condition

  - The user's device software executes correctly (and is happy)

10. Self-Administration [Editor's note: Forgot the original proposal !]

Annex <B> (informative): Recommended User Profile content

- General Information
  - Not controlling functions.
  - General User Information (Name, address, age, sex, ID)
  - General Subscriber Information (Name, bill info, users)
- Capability description
  - Describe capacity. Normally not settable.
  - Terminal capability
  - User interface capabilities
  - Communication capabilities
  - Synchronisation capabilities
  - MExE capabilities
  - WAP Browser capabilities
- User's preferences
  - User's "wishes". Sent to servers. Used for "content selection".
  - User interface preferences (language, event notifications..)
  - Browser appearance (User's preference for displaying frames)
  - Preferred memory usage
  - IPMM preferences
- Parameters
  - User interface (Ring volume, Vibrating alert, Ring signals, Melodies, Key sound)
  - WAP Parameters (Bookmarks; Gateway: Internet account, Gateway IP address, User ID, Password, Datamode, Security, Show images, Response timer)
  - User security policy (application download, ciphering, positioning)
  - User Security data (Secret keys, user name)
  - Supplementary Services settings
  - IPMM settings (QoS profile, max nob sessions, roaming restrictions)
  - Identifiers/addresses/references (IMSI, IMEI, MSISDN…)

Annex <C> (informative): Change history

Change history										
TSG SA#	SA Doc.	SA1 Doc	Spec	CR	Rev	Rel	Cat	Subject/Comment	Old	New

Version	Date	Comment
0.1.0	Sep 2001	Initial Draft at Sophia Antipolis, September 11th-13th 2001

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