CHANGE REQUEST No :		*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

Technical Specification GSM / UMTS **22.01**   Version: **3.5.0**

Submitted to SMG [   ]   for approval **X**   without presentation ("non-strategic")
list SMG plenary meeting no. here ↑   for information **X**   with presentation ("strategic") **X**

PT SMG CR cover form: crf28_1.zip

Proposed change affects: SIM [ ]   ME [ ]   Network **X**
(at least one should be marked with an X)

Work item: UMTS Advanced Addressing

Source: Mannesmann Mobilfunk GmbH   **Date:**   1999-04-28

Subject: UMTS Addressing

Category: F Correction

(one category and one release only shall be marked with an X)

Category		Release	
F Correction		Phase 2	
A Corresponds to a correction in an earlier release		Release 96	
B Addition of feature	X	Release 97	
C Functional modification of feature		Release 98	
D Editorial modification		Release 99	
		UMTS	X

Reason for change: The output of the advanced addressing report 22.75 v 3.0.1 shall be included in the numbering section of 22.01

Clauses affected: 3 Definitions; 9 Numbering Principles

Other specs affected:

Other releases of same spec	[ ]	→ List of CRs:	
Other core specifications	[ ]	→ List of CRs:	
MS test specifications / TBRs	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

Other comments:

W help.doc

<--------- double-click here for help and instructions on how to create a CR.

3   Definitions, symbols and abbreviations

3.1   Definitions

For the purposes of this TS, the following definitions apply:

Authentication: a property by which the correct identity of an entity or party is established with a required assurance. The party being authenticated could be a user, subscriber, home environment or serving network.

Bearer: a bearer capability of defined capacity, delay and bit error rate, etc.

Bearer capability: a transmission function which the mobile station requests to the network.

Cipher key: a code used in conjunction with a security algorithm to encode and decode user and/or signalling data.

Confidentiality: the avoidance of disclosure of information without the permission of its owner.

Home Environment: the home environment is responsible for enabling a user to obtain UMTS services in a consistent manner regardless of the user's location or terminal used (within the limitations of the serving network and current terminal).

IC Card: a card holding an Integrated Circuit containing subscriber, end user, authentication and/or application data for one or more applications.

Integrity: (in the context of security) is the avoidance of unauthorised modification of information.

International mobile user number (IMUN): The International Mobile User Number is a diallable number allocated to a UMTS user.

Label: A number or name as defined below.

Mobility: the ability for the user to communicate whilst moving independent of location.

Multimedia service: Multimedia services are services that handle several types of media such as audio and video in a synchronised way from the user's point of view. A multimedia service may involve multiple parties, multiple connections, and the addition or deletion of resources and users within a single communication session.

Name: A name is an alpha numeric label used for identification of end users and may be portable.

Number: A string of decimal digits that uniquely indicates the public network termination point. The number contains the information necessary to route the call to this termination point.

A number can be in a format determined nationally or in an international format. The international format is known as the International Public Telecommunication Number which includes the country code and subsequent digits, but not the international prefix.

Number portability: where the provision of diallable numbers is independent of home environment and/or serving network.

One Stop Billing: one bill for all charges incurred using UMTS.

Quality of Service: the collective effect of service performances which determine the degree of satisfaction of a user of a service. It is characterised by the combined aspects of performance factors applicable to all services, such as:

-          service operability performance;

-          service accessibility performance;

-          service retainability performance;

-          service integrity performance;

-          and other factors specific to each service.

Roaming: the ability for a user to function in a serving network.

Security: the ability to prevent fraud as well as the protection of information availability, integrity and confidentiality.

Service: is set of functions offered to a user by an organisation.

Service Control: is the ability of the user, home environment or serving environment to determine what a particular service does, for a specific invocation of that service, within the limitations of that service.

Serving Network: the serving network provides the user with access to the services of home environment.

Subscriber: the responsibility for payment of charges incurred by one or more users may be undertaken by another entity designated as a subscriber. This division between use of and payment for services has no impact on standardisation.

Supplementary service: is a service which modifies or supplements a basic telecommunication service. Consequently, it cannot be offered to a customer as a standalone service. It must be offered together with or in association with a basic telecommunication service. The same supplementary service may be common to a number of telecommunication services.

Teleservice: is a type of telecommunication service that provides the complete capability, including terminal equipment functions, for communication between users according to standardised protocols and transmission capabilities established by agreement between operators.

User: is a logical, identifiable entity which uses UMTS services.

User Profile: is the set of information necessary to provide a user with a consistent, personalised service environment, irrespective of the user's location or the terminal used (within the limitations of the terminal and the serving network).

USIM: User Service Identity Module is an application residing on the IC-Card used for accessing UMTS services with appropriate security.

Virtual Home Environment: the virtual home environment is a system concept for personalised service portability between serving networks and between terminals.

9 Numbering principles

The following section list provides the requirements for numbering and identification of UMTS users subscribers. General requirements are listed in the following:

- The user shall be able to initiate communications with another party using a label / number to identify that party. This might be a logical label / number referring to a job function, and advertising response line etc. and would be resolved into a real terminal address by the UMTS system transparently to the user. Labels / numbers shall be capable of being stored in an address book which shall be accessible from any terminal that the user is registered on. Labels / numbers may be used to identify groups as well as individual terminals or people and shall allow extended character sets.

- 3rd party services should be reached by a label. Based on the selected charging policy for this services the calling party or/and the home environment of the calling party needs to be uniquely identified.

- Users also have requirements with regard to addressing for receipt of communications. The user shall be able to have a label / number of different persona (e.g. business and personal), each of which can be managed independently.

- When receiving communications, the recipient shall perceive the caller's label / number in the appropriate role. For example, when making a call as chairman of an 3GPP committee, then that persona will be presented as the caller ID. When making a personal call, then the underlying persona would be presented.

	Number portability;

	Evolution;

- User identification;

- Terminal Identification

- Billing;

- Service dependence and independence (Multiple and Single numbering scheme);

- Private Numbering;

- Multiple Profiles;

- Optimal Routing;

- In order to permit interworking with legacy networks, address interworking with common legacy network addressing shall be supported. In principle, this shall include interworking with any networking addressing scheme, but the following schemes listed below shall specifically be supported:

  - E.164,

  - E.168,

  - E.212,

  - X.121

  - ASEA

  - Internet

- Content Providers(for further study).

9.1   UMTS Number portability

Some labelling / numbering schemes shall be fully independent of the supporting serving network and the home environment, allowing users to transfer this label to another home environment. The standard shall enable number portability on a home environment level, location level and service level. For further information see GSM 02.66.

9.1.1   Home Environment Level

An International Mobile User Number (IMUN) shall be allocated to each new user at the start of a UMTS subscription. This number may be allocated from one of several numbering domains. For example:

- home / serving environment numbering scheme;

- national numbering scheme;

- regional numbering scheme;

- global numbering scheme.

A UMTS user shall be able to move subscription from one home environment to another without changing the IMUN provided that the new home environment offers service in the same geographic domain. It is envisaged that home environment s will be able to allocate IMUNs from each of these domains as required.

9.1.2   Location Level

It shall be possible for the user to be dialled independently from their location (i.e. mobility).

NOTE: This is fundamental to a mobile network but is not currently fundamental to a fixed network. It is listed here as it is a common principle used in numbering form.

9.1.3   Service Level

~~The standard shall enable where possible for the number dialled to communicate with a user to be independent from the service requested (see subclause 9.5).~~

9.2   Evolution path

Since UMTS aims to be aligned with IMT-2000, a primary goal in numbering is the provision of global user numbering in line with steps taken by the ITU - SG2.

(For UMTS Phase 1) It is required that is shall be possible to identify UMTS users using GSM identities, namely IMSI, MSISDN and possibly TMSI and IMEI.

The numbering scheme and network implementation chosen shall allow for international/global evolution.

9.3   User / USIM Identification

It is a requirement that the user can be uniquely identified by the home environment from which the service is being obtained. This identification may be unknown to the serving network on which the user is roaming.

Serving networks need to be able to communicate with, authenticate and commercially deal with the home environment associated with any USIM being registered on their network. This shall require a USIM identity scheme which uniquely identifies each USIM, and a mapping scheme which allows the USIM identity to be used as a identifier with the "owning" home environment.

Serving networks also require to be able to route efficiently any communication to and from USIMs (or rather the devices on which they are registered). An address scheme is therefore required for operators to access and map any outgoing or incoming communication to USIMs and thus devices on their networks

9.4   Terminal Identification

It is a requirement that the terminal can be uniquely identified by the home environment and serving network. This shall require a terminal identity scheme which uniquely identifies each terminal.

~~9.5~~   9.5 Home Environment / Serving Network Identification

Serving networks need to be able to communicate with, authenticate and commercially deal with the home environment associated with any USIM being registered on their network. This shall require a USIM identity scheme which uniquely identifies each USIM, and a mapping scheme which allows the USIM identity to be used as a identifier with the "owning" home environment.

Home / serving environments need to route communication to the current location of the user. This shall require a identity scheme which uniquely identifies the serving environment and shall be used for routing purposes.

9.6   Service dependence / independence

Although a called party may be addressable via different means, he should be reachable independent of the medium. This would require a new functionality which can map name (alpha numeric string) / number (digits) for call routing purposes. Networks might only support basic functionality while advanced databases might be offered by 3rd parties.

UMTS shall provide various methods to identify the service required, for example, via the number dialled or protocol headers. It shall be possible for the home environment to change serving network(s) without changing IMUNs.

It shall be possible for several numbers to be associated with a single subscription on a single UICC.

9.7 Private numbering

A user may wish to use private numbers for the purposes of calling frequent numbers. Therefore there is a requirement for the use, by the user, of Private Numbering Plans (PNPs). These schemes may belong to the user himself, to a home environment or a third party.

In addition, the user shall be able to choose the means to address the identity of a dialled number. For instance the number required to be dialled may be addressed by a spoken name.

> NOTE: This may well be considered as a function of the equipment used to access the service and as such is not required to be standardised. However, the provision of such a facility needs to be provided across all terminal types used; fixed and mobile.

9.8 Optimal routing

The implementation of the numbering scheme used for UMTS shall allow for optimal routing; i.e. routing shall not take place simply on the number dialled. See GSM 02.79 for some scenarios.