Technical Specification Group Services and System Aspects
Meeting #20, Hämeenlinna, Finland, 09-12 June 2003

TSGS#20(03)0244

Source:	**SA1**
Title:	**CR to 22.101 on Tidy-up of Subscriber Identification requirements (Rel-5/6)**
Document for:	**Approval**
Agenda Item:	**7.1.3**

CR-Form-v7

CHANGE REQUEST

⌘ **TS 22.101** **CR** **124** ⌘ **rev** **-** ⌘ Current version: **5.9.0** ⌘

*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:	⌘	Alignment of Subscriber Identification requirements to current implementation
Source:	⌘	Siemens
Work item code:	⌘	TEI 5
Date:	⌘	24/03/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

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:	⌘	This CR aligns requirements on subscriber identification to current implementation. Chapter 11.3 of TS 22.101 is very outdated and confusing. Text was simplified and corrected to reflect the current status. This issue was noted after CR (SP-020651) was approved, which incorrectly deleted SIM references from several places in this chapter.
Summary of change:	⌘	(a) The requirements in chapter 11 (Numbering Principles), that relate to identification requirements rather than to numbering principles have been shifted to a new chapter 12 (Identification Requirements). These are 11.3 (User / USIM identification), 11.4 (Terminal Identification) and 11.5 (Home Environment / Serving Network Identification) (b) The sub-chapter "User / USIM identification" has been renamed "Subscriber Identification" This sub-chapter has been tidied up to clarify the requirements contained therein (c) The requirement for the network to be able to support UEs containing a SIM has been re-established (however, UE support of SIM is optional).
Consequences if not approved:	⌘	The standard could be understood in a way, that no SIM identification in the network is necessary.

Clauses affected:	⌘	11, new chapter 12
Other specs	⌘	Y ☐ N ☒ Other core specifications ⌘

Affected:	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.

Numbering principles

The following network addressing schemes listed below shall be supported at the relevant domains:

- E.164,
- E.168,
- E.212,
- X.121
- Internet (including e.g. IP address).

11.1 Number portability

11.1.1 Requirements for CS CN domain

Some numbering schemes shall be fully independent of the supporting serving network and the home environment, allowing users to transfer this number to another home environment. For further information see 3GPP TS 22.066 [7].

An MSISDN shall be allocated to each new user at the start of a 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 user shall be able to move subscription from one home environment to another without changing the MSISDN 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 MSISDNs from each of these domains as required.

11.1.2 Requirements for PS CN domain

None identified.

11.1.3 Requirements for IM CN subsystem

None identified.

Note: Portability of E.164 numbers within IM subsystem is envisaged and under further study.

11.2 Evolution path

Since 3GPP specifications aim 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.

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

11.3 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.

11.4 Numbering schemes

11.4.1 Multiple numbering scheme

The standards shall support the possiblity of allowing the bearer service associated with an MT call to be implicitly defined by the destination MSISDN, for example to use a different MSISDN to establish voice, fax or data . It will be possible for multiple MSISDNs to be associated with a single subscription.

11.4.2 Single numbering scheme

The standards shall support the possibility of allowing MT calls of different bearer types (eg voice, fax, data) to be routed to a single MSISDN. It is recognised that the implementation of this may depend on the availability of bearer information associated with an incoming call from the adjoining transit network. In particular the standards will support this possibility in the case of an adjoining ISDN transit network.

11.5 Optimal routing for CS CN domain

The implementation of the numbering scheme used shall allow for optimal routing; i.e. routing shall not take place simply on the number dialled. See 3GPP TS 22.079 [8] for some scenarios.

12 Identification Requirements

12.1~~11.3 User / USIM~~ Subscriber Identification

In 3GPP the identity of a subscriber is encoded in a identity module application which is contained on a UICC or on a GSM SIM card. The UICC or GSM SIM card is a removable component of the User Equipment. Three types of identity modules are used in the 3GPP system:

- Universal Subscriber Identity Module (USIM)
- IMS Subscriber Identity Module (ISIM)
- Subscriber Identity Module (SIM) according to GSM

General requirements:

- In the 3GPP system each subscriber shall be uniquely identifiable.
  ~~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.~~
- The serving networks shall be able to authenticate any subscriber that roams onto their network
- If a UE, that is registered on the serving network, contains a GSM SIM card or a UICC containing a identity module application, the serving network shall be able to identify the associated home PLMN.
  ~~Serving networks need to be able to communicate with, authenticate and commercially deal with the home environment associated with any USIM, and optionally SIM, being registered on their network. This shall require an 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, and optionally SIMs, (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 SIM/USIMs and thus devices on their networks~~

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

Note 1: UE support of GSM SIM is optional.

Note 2: See the chapter (USIM, UICC and Terminal) of the present specification for a reference, which GSM phase SIMs need to be supported by the network.

12.2~~11.4~~ 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, see 3GPP TS 22.016[12].

12.3~~11.5~~ Home Environment / Serving Network Identification

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.

~~11.6 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.~~

~~11.7 Numbering schemes~~

~~11.7.1 Multiple numbering scheme~~

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Source:	⌘	Siemens
Work item code:	⌘	TEI
Date:	⌘	24/03/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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The following network addressing schemes listed below shall be supported at the relevant domains:

- E.164,
- E.168,
- E.212,
- X.121
- Internet (including e.g. IP address).

When the UE is connected via a I-WLAN, the addressing shall be based on Network Access Identifier (NAI) format (user@realm) as defined in RFC 2486 [33].

11.1 Number portability

11.1.1 Requirements for CS CN domain

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11.1.2 Requirements for PS CN domain

None identified.

11.1.3 Requirements for IM CN subsystem

It shall be possible to offer number portability for E.164 numbers within IM CN subsystem. For further information see 3GPP TS 22.066 [7].

11.2 Evolution path

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