3GPP TSG-SA#15 Meeting
Jeju-do, Korea, 11-14 March 2002

Tdoc SP-020189
rev of *S2-020862*

CR-Form-v4

CHANGE REQUEST

⌘ **23.228** **CR** **148** ⌘ **R3** ⌘ Current version: **5.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** ISIM **X** Core Network **X**

Title:	⌘	Introduction of the ISIM application on UICC
Source:	⌘	Telia
Work item code:	⌘	IMS-CCR
Date:	⌘	12/3/02
Category:	⌘	**C**
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)

Reason for change:	⌘	Introduction of ISIM
Summary of change:	⌘	R'5 UICCs for IMS are expected to have an ISIM application in addition to the USIM application.
Consequences if not approved:	⌘	Not defined smart card support for IMS.

Clauses affected:	⌘	3.3, 4.3.3.1, 4.3.3.2 and 4.3.3.4.
Other specs Affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

2 References

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- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
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[15] RFC 2806: "URLs for Telephone Calls"

[16] RFC 2916: "E.164 number and DNS"

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[18] ITU Recommendation H.248: "Gateway control protocol"

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[20] 3GPP TS 33.2xx: "Network Domain Security: IP network layer security "

[21] 3GPP TS 26.235: "Packet Switched Multimedia Applications; Default Codecs".

[22] 3GPP TR 22.941: " IP Based Multimedia Services Framework "

[23] 3GPP TS 23.060: “General Packet Radio Service (GPRS); Service description; Stage 2

3.3 Abbreviations

For the purposes of the present document the following abbreviations apply. Additional applicable abbreviations can be found in GSM 01.04 [1].

AMR	Adaptive Multi-rate
API	Application Program Interface
AS	Application Server
BCSM	Basic Call State Model
BG	Border Gateway
BGCF	Breakout Gateway Control Function
BS	Bearer Service
CAMEL	Customised Application Mobile Enhanced Logic
CAP	Camel Application Part
CDR	Charging DataRecord
CN	Core Network
CS	Circuit Switched
CSCF	Call Session Control Function (??)
CSE	CAMEL Service Environment
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
ENUM	E.164 Number
GGSN	Gateway GPRS Support Node
HSS	Home Subscriber Server
I-CSCF	Interrogating-CSCF
IETF	Internet Engineering Task Force
IM	IP Multimedia
IM CN SS	IP Multimedia Core Network Subsystem
IMS	IP Multimedia Core Network Subsystem
IMSI	International Mobile Subscriber Identifier
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISDN	Integrated Services Digital Network
ISIM	IMS SIM
ISP	Internet Service Provider
ISUP	ISDN User Part
MAP	Mobile Application Part
MGCF	Media Gateway Control Function
MGF	Media Gateway Function
NAI	Network Access Identifier
OSA	Open Services Architecture
P-CSCF	Proxy-CSCF
PCF	Policy Control Function
PDN	Packet Data Network
PDP	Packet Data Protocol e.g., IP
PEF	Policy Enforcement Function
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RAB	Radio Access Bearer
RFC	Request for Comments
SCS	Service Capability Server
S-CSCF	Serving-CSCF
SGSN	Serving GPRS Support Node
SLF	Subscription Locator Function
SSF	Service Switching Function
SS7	Signalling System 7
SIM	Subscriber Identity Module
SIP	Session Initiation Protocol
SGW	Signalling Gateway
THIG	Topology Hiding Inter-network Gateway
UE	User Equipment

UMTS	Universal Mobile Telecommunications System
URL	Universal Resource Locator
USIM	UMTS SIM

4.3.3 Identification of users

There are various identities that may be associated with a user of IP multimedia services. This section describes these identities and their use.

4.3.3.1 Private user identities

Every IM CN subsystem subscriber shall have a private user identity. The private identity is assigned by the home network operator, and used, for example, for Registration, Authorisation, Administration, and Accounting purposes. This identity shall take the form of a Network Access Identifier (NAI) as defined in RFC 2486 [14]. It is possible for a representation of the IMSI to be contained within the NAI for the private identity.

- The Private User Identity is not used for routing of SIP messages.
- The Private User Identity shall be contained in all Registration requests, (including Re-registration and De-registration requests) passed from the UE to the home network.
- An ISIM application shall securely store t~~T~~he Private User Identity ~~shall be securely stored on the USIM~~. (~~I~~it shall not be possible for the UE to modify the UICC's Private User Identity information~~)~~.
- The Private User Identity is a unique global identity defined by the Home Network Operator, which may be used within the home network to uniquely identify the user from a network perspective.
- The Private User Identity shall be permanently allocated to a user (it is not a dynamic identity), and is valid for the duration of the user's subscription with the home network.
- The Private User Identity is used to identify the user's information (for example authentication information) stored within the HSS (for use for example during Registration).
- The Private User Identity may be present in charging records based on operator policies.
- The Private User Identity identifies the subscription (e.g. IM service capability) not the user.
- The Private User Identity is authenticated only during registration of the subscriber, (including re-registration and de-registration).
- The HSS and S-CSCF need to obtain and store the Private User Identity.

4.3.3.2 Public user identities

Every IM CN subsystem subscriber shall have one or more public user identities [8]. The public user identity/identities are used by any user for requesting communications to other users. For example, this might be included on a business card.

- Both telecom numbering and Internet naming schemes can be used to address users depending on the Public User identities that the users have.
- The public user identity/identities shall take the form of SIP URL (as defined in RFC2543 [12] and RFC2396 [13]) or E.164 numbers.
- An ISIM application shall securely store a~~A~~t least one Public User Identity ~~shall be securely stored on the USIM~~ (it shall not be possible for the UE to modify the Public User Identity), but it is not required that all additional Public User Identities be stored on the ISIM application~~USIM~~.
- It shall be possible to register globally (i.e. through one single UE request) a subscriber that has more than one public identity via a mechanism within the IP multimedia CN subsystem (e.g. by using a Service Profile). This shall not preclude the user from registering individually some of his/her public identities if needed.
- Public User Identitys are not authenticated by the network during registration.
- Public User Identities may be used to identify the user's information within the HSS (for example during mobile terminated session set-up).

4.3.3.3 Routing of SIP signalling within the IP multimedia subsystem

Routing of SIP signalling within the IMS shall use SIP URLs. E.164 [2] format public user identities shall not be used for routing within the IMS, and session requests based upon E.164 format public user identities will require conversion into SIP URL format for internal IMS usage.

4.3.3.4 Relationship of private and public user identities

The home network operator is responsible for the assignment of the private user identifier, and public user identifiers; other identities that are not defined by the operator may also exist.

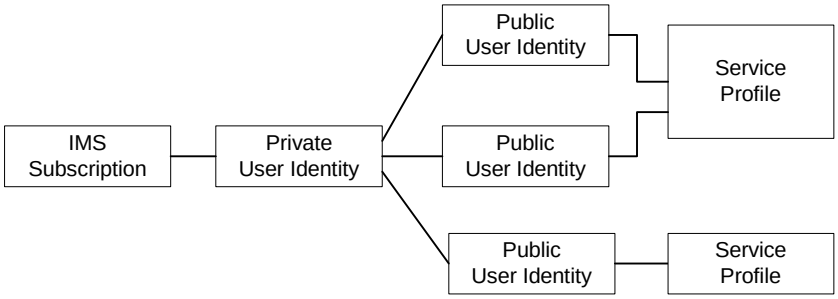

Figure 4.5: Relationship of the private user identity and public user identities

All Public user identities that are associated with the same Service Profile should have the same set of services. Public user identities that are associated with a different Service Profile could have a different set of services. Each Public user identity is only associated with a single Service Profile.

All Service Profiles that share the same Private user identity are associated to the same S-CSCF. Later releases may allow different Service Profiles that share the same Private user identity to be associated with different S-CSCFs.

An ISIM application shall securely store t~~T~~he home domain name of the subscriber. ~~shall be stored securely on the USIM~~ (~~I~~it shall not be possible for the UE to modify the information from which the home domain name is derived~~)~~.

The storage location of the Private User Identity, Public User Identity and home domain name for a standalone SIP Client could be stored on the ~~USIM~~ISIM.

Editors Note: Mechanisms used to extract the Private User Identity, Public User Identity and home domain name from the ~~USIM/~~ISIM (e.g. when an external SIP TE is used) are for further study of the groups T2, T3 and SA3.

It is not a requirement for a user to be able to register on behalf of another user or for a device to be able to register on behalf of another device or for combinations of the above for the IM CN subsystem for this release.

Editor's Note: Public User Identity Portability issues are FFS.

3GPP TSG-SA2 Meeting #23
Sophia Antipolis, France,18-22 Feb. 2002

Tdoc S2-020862
rev of S2-020799

CR-Form-v4

CHANGE REQUEST

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** ISIM **X** Core Network **X**

Title:	⌘	Use of R'99 USIM for IMS, and, introduction of the ISIM application on UICC
Source:	⌘	Vodafone
Work item code:	⌘	IMS-CCR
Date:	⌘	21/2/02
Category:	⌘	**C**
Release:	⌘	Rel-5

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R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘ For operational, roll out and inter-operability testing reasons it is necessary to be able to operate IMS services using an unmodified R'99 USIM.

Summary of change: ⌘ With R'5 IMS capable UICCs, it is expected that 3 types of identity are stored on the ISIM, namely the Private User Identity, the Public User identity and the Home Network Domain Name.

To support the use of an unmodified R'99 USIM, the proposal is that:

a) the Private User Identity is derived from the IMSI;

b) the Public User Identity is derived from the IMSI (SA 2 considered deriving the Public User Identity from the MSISDN and/or IMEI however, after discussion there was an overall preference to use the IMSI); and

c) the Home Network Domain name is derived from the leading 6 digits of the IMSI (these include the Mobile Country Code and Mobile Network Code).

The detailed encoding of these fields is a stage 3 matter. Hence this CR only describes this capability in abstract terms.

R'5 UICCs for IMS are expected to have an ISIM application in addition to the USIM application.

In order to limit options, this CR only permits two ways of implementing the UE-UICC relationship: namely an unmodified R'99/R'4 USIM and a UICC with an ISIM application.

Consequences if not approved: ⌘ An unnecessary and large barrier will be placed in the way of introducing IMS services if R'99 USIMs cannot be used.

Clauses affected: ⌘ 2, 3.3, 4.3.3.1, 4.3.3.2 and 4.3.3.4.

Other specs Affected:	⌘	X	Other core specifications	⌘	23.003
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

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[24] 3GPP TS 23.003: “Technical Specification Group Core Network; Numbering, addressing and identification”

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CDR	Charging DataRecord
CN	Core Network
CS	Circuit Switched
CSCF	Call Session Control Function (??)
CSE	CAMEL Service Environment
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
ENUM	E.164 Number
GGSN	Gateway GPRS Support Node
HSS	Home Subscriber Server
I-CSCF	Interrogating-CSCF
IETF	Internet Engineering Task Force
IM	IP Multimedia
IM CN SS	IP Multimedia Core Network Subsystem
IMS	IP Multimedia Core Network Subsystem
IMSI	International Mobile Subscriber Identifier
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISDN	Integrated Services Digital Network
ISIM	IMS SIM
ISP	Internet Service Provider
ISUP	ISDN User Part
MAP	Mobile Application Part
MGCF	Media Gateway Control Function
MGF	Media Gateway Function
NAI	Network Access Identifier
OSA	Open Services Architecture
P-CSCF	Proxy-CSCF
PCF	Policy Control Function
PDN	Packet Data Network
PDP	Packet Data Protocol e.g., IP
PEF	Policy Enforcement Function
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RAB	Radio Access Bearer
RFC	Request for Comments
SCS	Service Capability Server
S-CSCF	Serving-CSCF
SGSN	Serving GPRS Support Node
SLF	Subscription Locator Function
SSF	Service Switching Function
SS7	Signalling System 7
SIM	Subscriber Identity Module
SIP	Session Initiation Protocol
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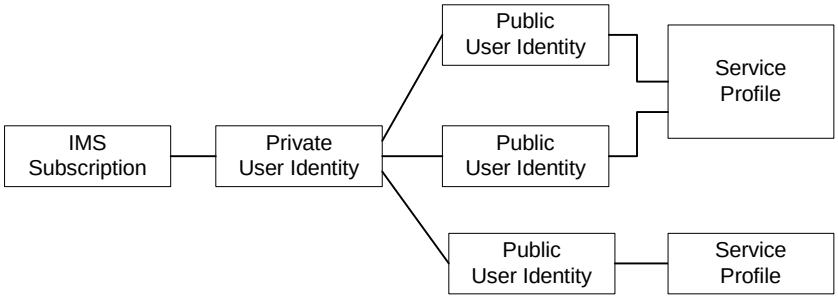

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