3GPP TSG CT Plenary Meeting #28 **CP-050217**
1st – 3rd June 2005 Quebec, Canada.

Source: TSG CT WG4

Title: Corrections on IP-based multimedia services on Subscriber data handling

Agenda item: 9.1

Document for: APPROVAL

Doc-2nd-Level	Spec	CR #	Rev	Rel	Tdoc Title	CAT	C_Version
C4-050777	23.008	147	1	Rel-6	Default Public User Identity per Implicit Registration Set	F	6.5.0
C4-050902	23.008	144	4	Rel-6	Public Service Identity	F	6.5.0

3GPP TSG-CT WG4 Meeting #27 **C4-050777**
Cancun, MEXICO. 25th to 29th April 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.008** **CR** **147** ⌘**rev** **1** ⌘ Current version: **6.5.0** ⌘

*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 **X**

Title:	⌘	Default Public User Identity per Implicit Registration Set
Source:	⌘	Ericsson
Work item code:	⌘	IMS2-CCR
Date:	⌘	26/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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:
Ph2 *(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)*
Rel-7 *(Release 7)*

Reason for change:	⌘	The indicator to identify the Default Public User Identity of a set is missing.
Summary of change:	⌘	The indicator has been added in the corresponding section and table. In addition to this a clarification has been added in the description of the Implicit Registration Set, so that each IMS Public User Identity is included in only one of them.
Consequences if not approved:	⌘	It will not be possible to select a Default Public User Identity, and the user might have a random Default Public User Identity assigned in each registration.

Clauses affected:	⌘	3.1, 5.3			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			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.

>>>>>>>>>>> First modified section <<<<<<<<<<<

3.1 Data related to subscription, identification and numbering

3.1.1 Private User Identity

The Private User Identity is in the form of a Network Access Identifier (NAI), which is defined in RFC 2486 [48].

If the GAA bootstrapping is based on authentication data from the IM domain, the corresponding Private User Identity from the IM d omain (IMPI) is used as it is. If the GAA bootstrapping is based on the authentication data from the CS/PS domain, a Private User Identity is derived from user's IMSI according 3GPP TS 23.003 [5] is used.

The Private User Identity is permanent subscriber data and is stored in HSS ,and in S-CSCF.

3.1.2 Public User Identities

The Public User Identities contain one or several instances of Public User Identity, which is defined in 3GPP TS 23.003 [5].

The Public User Identities are permanent subscriber data and are stored in HSS, S-CSCF and BSF.

3.1.3 Barring indication

Flag associated to each public identity to indicate that the identity is barred from any IMS communication (except registrations and re-registrations).

The Barring indication is permanent subscriber data and is stored in the HSS and in the S-CSCF.

3.1.4 List of authorized visited network identifiers

The list of authorized visited network identifiers is associated with the public user identity of IMS subscribers to indicate which visited network identifiers are allowed for roaming.

The list of visited network identifiers is permanent subscriber data and is stored in the HSS. This list can be a linear list of visited network identifiers or a compound list of network identifier types e.g. home PLMN or home country; however the exact structure of the list is an implementation option.

3.1.5 Services related to Unregistered State

The Services related to Unregistered State is a parameter associated to each public identity and it indicates whether the identity has services related to unregistered state or not.

The Services related to Unregistered State is permanent subscriber data stored in the HSS.

3.1.6 Implicitly Registered Public User Identity Sets

The Implicitly Registered Public User Identity Set contains one or several instances of Public User Identity, and is defined in 3GPP TS 29.228 [43] following the described concept in 3GPP TS 23.228 [42]. Several Implicitly Registered Public User Identity Sets can be configured for a given user. Each Public User Identity shall be included in no more than one Implicitly Registered Public User Identity Set.

The Implicitly Registered Public User Identity Sets are permanent subscriber data and are stored in HSS and in S-CSCF.

3.1.x Default Public User Identity indicator

The Default Public User Identity indicator marks the Public User Identity to be used as default Public User Identity in each Implicitly Registered Public User Identity Set, and is defined in 3GPP TS 29.228 [43]. There shall be one Default Public User Identity per Implicitly Registered Public User Identity Set.

The Default Public User Identity indicator is permanent subscriber data and is stored in the HSS.

>>>>>>>>>>> End of first modified section <<<<<<<<<<<

>>>>>>>>>>> Second modified section <<<<<<<<<<<

5.3 IP Multimedia Service Data Storage

Table 5.3: Overview of data used for IP Multimedia services

PARAMETER	Subclause	HSS	S-CSCF	IM-SSF	AS	TYPE
Private User Identity	3.1.1	M	M		-	P
Public Identity	3.1.2	M	M		-	P
Barring Indication	3.1.3	M	M		-	P
List of authorized visited network identifiers	3.1.4	M	-		-	P
Services related to Unregistered State	3.1.5	M	-		-	P
Implicitly registered Public User Identity sets	3.1.6	C	C	-	-	P
Default Public User Identity indicator	3.1.x	C	-	-	-	P
Registration Status	3.2.1	M	-		-	T
S-CSCF Name	3.2.2	M	-		-	T
Diameter Client Address of S-CSCF	3.2.3	M	-		-	T
Diameter Server Address of HSS	3.2.4	-	M	-	C	T
RAND, XRES, CK, IK and AUTN	3.3.1	M	C		-	T
Server Capabilities	3.4.1	C	C		-	P
Subscribed Media Profile Identifier	3.6.1	C	C		-	P
Initial Filter Criteria	3.5.2	C	C		-	P
Application Server Information	3.5.3	C	C	-	-	P
Service Indication	3.5.4	M	-		M	P
Shared iFC Set Identifier	3.5.5	C	C			P
Primary Event Charging Function Name	3.7.1	C	C	-	-	P
Secondary Event Charging Function Name	3.7.2	C	C	-	-	P
Primary Charging Collection Function Name	3.7.3	M	M	-	-	P
Secondary Charging Collection Function Name	3.7.4	C	C	-	-	P
GsmSCF address for IM CSI	3.8.4	C	-		-	P
IM-SSF address for IM CSI	3.8.5	C	-		-	T
O-IM-CSI	3.8.1	C	-	C	-	P
VT-IM-CSI	3.8.2	C	-	C	-	P
D-IM-CSI	3.8.3	C	-	C	-	P
GsmSCF address for IM CSI	3.8.4	C	-	-	-	P
IM-SSF address for IM CSI	3.8.5	C	-	-	-	T

>>>>>>>>>>> End of second modified section <<<<<<<<<<<

3GPP TSG–CT4 Meeting #27
Cancun, Mexico, 25th to 29th April 2005

***Tdoc* ⌘C4-050902**

CR-Form-v7

CHANGE REQUEST

⌘ **23.008** **CR** **144** ⌘**rev** **4** ⌘ Current version: **6.5.0** ⌘

*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 **X**

Title:	⌘	Public Service Identity
Source:	⌘	Orange
Work item code:	⌘	IMS2-CCR
Date:	⌘	30/03/2005
Category:	⌘	**F**
Release:	⌘	REL-6

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:	⌘	As required in TS 23.228 section 5.4.12.4, it is necessary to configure Public Service Identities at the HSS. The PSI related data shall be defined in the data stored in the HSS and S-CSCF.
Summary of change:	⌘	Section 3 is modified to specify the data that are applicable to IMS subscribers only or to both IMS subscriber and PSI user. The following new data related to a SPI user are defined: - Public Service Identity - Private Service Identity - AS Name The new data for PSI user is added in a new table of Section 5.
Consequences if not approved:		Incomplete specifications: Data definition and data storage is not specified for PSI.

Clauses affected:	⌘	3, 5, 5.3

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘

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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 co

*** FIRST MODIFICATION ***

3 Definition of ~~subscriber~~ data for IP Multimedia domain

This section describes the IMS data for IMS subscribers and PSI users.

3.1 Data related to subscription, identification and numbering

3.1.1 Private User Identity

The Private User Identity is applicable to IMS subscribers only. The Private User Identity is in the form of a Network Access Identifier (NAI), which is defined in RFC 2486 [48].

If the GAA bootstrapping is based on authentication data from the IM domain, the corresponding Private User Identity from the IM d omain (IMPI) is used as it is. If the GAA bootstrapping is based on the authentication data from the CS/PS domain, a Private User Identity is derived from user's IMSI according 3GPP TS 23.003 [5] is used.

The Private User Identity is permanent subscriber data and is stored in HSS ,and in S-CSCF.

3.1.2 Public User Identities

The Public User Identities of an IMS subscriber contain one or several instances of Public User Identity, which is defined in 3GPP TS 23.003 [5].

The Public User Identities are permanent subscriber data and are stored in HSS S-CSCF and BSF.

3.1.x Private Service Identity

The Private Service Identity is applicable to a PSI user and is similar to a private user identity in the form of a Network Access Identifier (NAI), which is defined in RFC 2486 [48]. The Private Service Identity is operator defined.

The Private Service Identity is permanent subscriber data and is stored in HSS and S-CSCF.

3.1.y Public Service Identity

The Public Service Identity hosted by an application server may be a distinct PSI or a wilcarded PSI. The PSI is defined in 3GPP TS 23.003 [5].

The Public Service Identity is permanent subscriber data and is stored in HSS and S-CSCF.

3.1.3 Barring indication

Flag associated to each public identity to indicate that the identity is barred from any IMS communication (except registrations and re-registrations).

The Barring indication is permanent subscriber data and is stored in the HSS and in the S-CSCF.

3.1.4 List of authorized visited network identifiers

The list of authorized visited network identifiers is associated with the ~~p~~Public ~~u~~User ~~i~~Identity of IMS subscribers to indicate which visited network identifiers are allowed for roaming.

The list of visited network identifiers is permanent subscriber data and is stored in the HSS. This list can be a linear list of visited network identifiers or a compound list of network identifier types e.g. home PLMN or home country; however the exact structure of the list is an implementation option.

3.1.5 Services related to Unregistered State

The Services related to Unregistered State is a parameter associated to each ~~p~~Public User ~~i~~Identity of an IMS subscriber and it indicates whether the identity has services related to unregistered state or not.

The Services related to Unregistered State is permanent subscriber data stored in the HSS.

3.1.6 Implicitly Registered Public User Identity Sets

The Implicitly Registered Public User Identity Set contains one or several instances of Public User Identity of an IMS subscriber, and is defined in 3GPP TS 29.228 [43] following the described concept in 3GPP TS 23.228 [42]. Several Implicitly Registered Public User Identity Sets can be configured for a given user.

The Implicitly Registered Public User Identity Sets are permanent subscriber data and are stored in HSS and in S-CSCF.

3.2 Data related to registration

3.2.1 Registration Status

The Registration Status, specified in 3GPP TS 29.228 [43], contains the status of registration of a ~~p~~Public ~~u~~User ~~i~~Identity(i.e. registered, not registered, unregistered) of an IMS subscriber.

The Registration Status is temporary subscriber data and is stored in HSS.

3.2.2 S-CSCF Name

For an IMS subscriber, t~~T~~he S-CSCF Name identifies the S-CSCF allocated to the IMS subscriber when the subscriber is registered to IP Multimedia Services. It is used during mobile terminated sessions set-up and re-registrations.

For a Public Service Identity the S-CSCF Name identities the S-CSCF allocated to the PSI for ~~(~~basic IMS routing. It is used during terminated call set-up for a PSI user.

The S-CSCF Name shall be in the form of a SIP URL as defined in IETF RFC 3261 [45] and RFC 2396 [46].

For an IMS subscriber and PSI user, t~~T~~he S-CSCF Name is temporary data and is stored in HSS.

3.2.2A AS Name

For a PSI user the AS Name identifies the application server hosting the Public Service Identity and is used for direct routing of a Public Service Identity.

The AS Name is permanent data and is stored in the HSS.

3.2.3 Diameter Client Address of S-CSCF

The Diameter Client Address of the S-CSCF identifies the Diameter client in the S-CSCF when the IMS subscriber is registered to IP Multimedia Services or a PSI user has an assigned S-CSCF. It is used in requests sent by the HSS to the S-CSCF. The format of the Diameter Client Address is the Diameter Identity defined in draft-ietf-aaa-diameter-08 [51].

The Diameter Client Address of the S-CSCF is temporary data and is stored in HSS.

3.2.4 Diameter Server Address of HSS

The Diameter Server Address of the HSS identifies the Diameter Server in the HSS when the IMS subscriber is registered to IP Multimedia Services or the Address of HSS holding the IMS data of a PSI user. It is used in requests send by the S-CSCF to the HSS. The format of the Diameter Server Address is the Diameter Identity defined in draft-ietf-aaa-diameter-08 [51].

For an IMS subscriber and PSI user, t~~T~~he Diameter Server Address of the HSS is temporary data and is stored in S-CSCF.

3.3 Data related to authentication and ciphering

The Data related to authentication and ciphering are applicable to IMS subscribers only.

3.3.1 Random Challenge (RAND), Expected Response (XRES), Cipher Key (CK), Integrity Key (IK) and Authentication Token (AUTN)

For contents of Random Challenge (RAND), Expected Response (XRES), Cipher Key (CK), Integrity Key(IK) and Authentication Token (AUTN) see subclause 2.3.2.

A set of quintuplet vectors are calculated in the HSS, and sent from the HSS to the S-CSCF (see 3GPP TS 29.228 [43]).

These data are temporary subscriber data conditionally stored in the HSS and in the S-CSCF.

3.4 Data related S-CSCF selection information

3.4.1 Server Capabilities

The Server Capabilities contains information to assist the I-CSCF in the selection of a S-CSCF for an IMS subscriber or a PSI user. For definition and handling of the data see 3GPP TS 29.228 [43] and 3GPP TS 29.229 [44].

The Server Capabilities information is permanent data and is stored in HSS.

3.5 Data related to Application and service triggers

For definition and handling of these data see 3GPP TS 23.218 [53].

3.5.1 Void

3.5.2 Initial Filter Criteria

A set of Initial Filter Criteria are stored for each user, for each application or service that the user request may invoke. The relevant service points of interest are defined in 3GPP TS 23.218 [53] subclause 5.2.

Each set of filter criteria includes the Application Server Address, AS priority, Default Handling, Subscribed Media, Trigger Points and Optional Service Information.

For a PSI that is routed according to the basic IMS routing principles, Initial Filter criteria is mandatory in order to route towards the AS hosting the PSI.

3.5.3 Application Server Information

The HSS may store Application Server specific information for each user. This information may include Service Key, Trigger Points, and Service Scripts etc. (see 3GPP TS 23.218 [53] subclause 9.3.1)

3.5.4 Service Indication

Service Indication identifies exactly one set of service related transparent data (see 3GPP TS 29.328 [54]), which is stored in an HSS in an operator network. It is defined in 3GPP TS 29.328 [54].

The Service Indication is permanent subscriber data and is stored in the HSS and one or more ASs.

3.5.5 Shared iFC Set Identifier

Shared iFC Set Identifier identify sets of Initial Filter Criteria that may be shared by more than one IMS subscriber or PSI user. The translation from a Shared iFC Set Identifier to the set of initial Filter Criteria is performed in the S-CSCF based on operator configuration.
The Shared iFC Set Identifier are permanent data stored in the HSS and in the S-CSCF.

3.6 Data related to Core Network Services Authorization

3.6.1 Subscribed Media Profile Identifier

The Subscribed Media Profile Identifier identifies a set of session description parameters that the IMS subscriber or PSI user is authorized to request. The translation from the Profile Identifier to the set of subscribed media is performed in the S-CSCF based on operator configuration.
The Subscribed Media Profile Identifier is permanent data stored in the HSS and in the S-CSCF.

*** NEXT MODIFICATION ***

3.8 Data related to CAMEL Support of IMS Services

The Data related to CAMEL Support of IMS Services are applicable to IMS subscribers only.

*** NEXT MODIFICATION ***

5 Accessing subscriber or PSI data

It shall be possible to retrieve or store subscriber data concerning a specific MS from the HSS by use of each of the following references:

- International Mobile Subscriber Identity (IMSI);
- Mobile Station ISDN Number (MSISDN).

It shall be possible to retrieve or store subscriber IP Multimedia service data concerning a specific MS from the HSS by use of each of the following references:

- Private User Identity;
- Public Identity.

It shall be possible to retrieve or store PSI IP Multimedia service data from the HSS by use of each of the following references:

- Public Service Identity.

It shall be possible to retrieve or store subscriber data concerning a specific MS from the VLR by use of each of the following references:

- International Mobile Subscriber Identity (IMSI);
- Temporary Mobile Subscriber Identity (TMSI).

It shall be possible to retrieve or store subscriber data concerning a specific MS from the SGSN by use of each of the following references:

- International Mobile Subscriber Identity (IMSI);
- Packet Temporary Mobile Subscriber identity (P-TMSI).

It shall be possible to retrieve or store subscriber data concerning a specific MS from the GGSN by use of the following reference:

- International Mobile Subscriber Identity (IMSI).

It shall be possible to retrieve or store subscriber data concerning a specific MS from the 3GPP AAA Server by use of each of the following references:

- International Mobile Subscriber Identity (IMSI);
- Mobile Subscriber ISDN Number (MSISDN).

It shall be possible to retrieve or store subscriber data concerning a specific MS from the 3GPP AAA Proxy by use of the following reference:

- Mobile Subscriber ISDN Number (MSISDN).

It shall be possible to retrieve or store subscriber data concerning a specific MS from the WAG by use of the following reference:

- Mobile Subscriber ISDN Number (MSISDN).

It shall be possible to retrieve or store subscriber data concerning a specific MS from the PDG by use of the following reference:

- Mobile Subscriber ISDN Number (MSISDN).

NOTE: See clause 4 for explanation of M, C, T and P in table 1, table 2 and table 3.

*** NEXT MODIFICATION ***

5.3 IP Multimedia Service Data Storage

Table 5.3: Overview of IMS subscriber data used for IP Multimedia services

PARAMETER	Subclause	HSS	S-CSCF	IM-SSF	AS	TYPE
Private User Identity	3.1.1	M	M		-	P
Public User Identity	3.1.2	M	M		-	P
Barring Indication	3.1.3	M	M		-	P
List of authorized visited network identifiers	3.1.4	M	-		-	P
Services related to Unregistered State	3.1.5	M	-		-	P
Implicitly registered Public User Identity sets	3.1.6	C	C	-	-	P
Registration Status	3.2.1	M	-		-	T
S-CSCF Name	3.2.2	M	-		-	T
Diameter Client Address of S-CSCF	3.2.3	M	-		-	T
Diameter Server Address of HSS	3.2.4	-	M	-	C	T
RAND, XRES, CK, IK and AUTN	3.3.1	M	C		-	T
Server Capabilities	3.4.1	C	C		-	P
~~Subscribed Media Profile Identifier~~	~~3.6.1~~	~~C~~	~~C~~		~~-~~	~~P~~
Initial Filter Criteria	3.5.2	C	C		-	P
Application Server Information	3.5.3	C	C	-	-	P
Service Indication	3.5.4	M	-		M	P
Shared iFC Set Identifier	3.5.5	C	C			P
Subscribed Media Profile Identifier	3.6.1	C	C		-	P
Primary Event Charging Function Name	3.7.1	C	C	-	-	P
Secondary Event Charging Function Name	3.7.2	C	C	-	-	P
Primary Charging Collection Function Name	3.7.3	M	M	-	-	P
Secondary Charging Collection Function Name	3.7.4	C	C	-	-	P
GsmSCF address for IM CSI	3.8.4	C	-		-	P
IM-SSF address for IM CSI	3.8.5	C	-		-	T
O-IM-CSI	3.8.1	C	-	C	-	P
VT-IM-CSI	3.8.2	C	-	C	-	P
D-IM-CSI	3.8.3	C	-	C	-	P
GsmSCF address for IM CSI	3.8.4	C	-	-	-	P
IM-SSF address for IM CSI	3.8.5	C	-	-	-	T

Table 5.x~~3~~: Overview of PSI user data used for IP Multimedia services

PARAMETER	Subclause	HSS	S-CSCF	IM-SSF	AS	TYPE
Private Service Identity	3.1.x	M	M		-	P
Public Service Identity	3.1.y	M	M		-	P
Barring Indication	3.1.3	M	M		-	P
S-CSCF Name	3.2.2	C	-		-	T
AS Name	3.2.2A	C	-		-	P
Diameter Client Address of S-CSCF	3.2.3	M	-		-	T
Diameter Server Address of HSS	3.2.4	-	M	-	C	T
Initial Filter Criteria	3.5.2	C	C		-	P
Application Server Information	3.5.3	C	C	-	-	P
Service Indication	3.5.4	M	-		M	P
Shared iFC Set Identifier	3.5.5	C	C			P
Subscribed Media Profile Identifier	3.6.1	C	C		-	P
Primary Event Charging Function Name	3.7.1	C	C	-	-	P
Secondary Event Charging Function Name	3.7.2	C	C	-	-	P
Primary Charging Collection Function Name	3.7.3	M	M	-	-	P
Secondary Charging Collection Function Name	3.7.4	C	C	-	-	P

*** END OF MODIFICATION ***