Source: TSG CN WG4

Title: Corrections on IP-based multimedia services

Agenda item: 9.1

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.228	081		N4-040074	Rel-6	Error for missing identification in SAR command	F	6.1.0
29.328	036	2	N4-040120	Rel-6	Dh interface	B	6.0.0
29.229	035		N4-040274	Rel-6	Error for no identification in SAR command	F	5.6.0
29.328	043	1	N4-040344	Rel-6	Clarification of the AS Permissions List and its relevance to table 7.6.1	F	6.0.0
29.329	032	3	N4-040364	Rel-6	Introduction of 'Identity-Set' AVP	F	5.4.1

CR-Form-v7

CHANGE REQUEST

⌘ **29.228 CR 081** ⌘ **rev** **-** ⌘ Current version: **6.1.0** ⌘

*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: ⌘	Error for missing identification in SAR command	
Source: ⌘	CN4	
Work item code: ⌘	TEI6	**Date:** ⌘ 20/01/2004
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: ⌘	In Cx interface protocol definition, the Diameter Base Protocol error 'DIAMETER_UNABLE_TO_COMPLY' is reused as a 'catch-all' error for any problems not identifid in the detailed description. One error situation where no error is currently defined, but the ABNF is not broken is where a SAR is sent for registration with no identification included in the message or where there is a requirement for the presence of the Public Identity but Public Identity is missing, since both User name and Public Identity are marked as Optional in the ABNF. Therefore, an Experimental-Result-Code needs to be defined to convey this error. **This is an essential correction.**
Summary of change: ⌘	A new Experimental Result Code is defined with associated logic for its use. This code is DIAMETER_MISSING_USER_ID.
Consequences if not approved: ⌘	There is no error defined for the situation where public and/or private id are missing from the SAR message.

Clauses affected: ⌘	6.1.2

	Y	N		
Other specs ⌘	X		Other core specifications ⌘	29.229 CR 032
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.

6.1.2 S-CSCF registration/deregistration notification

This procedure is used between the S-CSCF and the HSS. The procedure is invoked by the S-CSCF, corresponds to the combination of the operations Cx-Put and Cx-Pull (see 3GPP TS 23.228 [1]) and is used:

- To assign an S-CSCF to a public identity, or to clear the name of the S-CSCF assigned to one or more public identities.

- To download from HSS the relevant user profile information that the S-CSCF needs to serve the user.

This procedure is mapped to the commands Server-Assignment-Request/Answer in the Diameter application specified in 3GPP TS 29.229 [5]. Tables 6.1.2.1 and 6.1.2.2 describe the involved information elements.

Table 6.1.2.1: S-CSCF registration/deregistration notification request

Information element name	Mapping to Diameter AVP	Cat.	Description
Public User Identity (See 7.2)	Public-Identity	C	User public identity or list of user public identities. At least one public identity shall be present if User-Name is not present in the request.
S-CSCF Name (See 7.4)	Server-Name	M	Name of the S-CSCF.
Private User Identity (See 7.3)	User-Name	C	User private identity. It shall be present if it is available when the S-CSCF issues the request. It may be absent during the initiation of a session to an unregistered user. In such situation, Server-Assignment-Type shall contain the value UNREGISTERED_USER. In case of de-registration, Server-Assignment-Type equal to TIMEOUT_DEREGISTRATION, USER_DEREGISTRATION or ADMINISTRATIVE_DEREGISTRATION, if no Public-Identity AVPs are present then User-Name AVP shall be present.
Server Assignment Type (See 7.8)	Server-Assignment-Type	M	Type of update the S-CSCF requests in the HSS (e.g: de-registration). See 3GPP TS 29.229 [5] for all the possible values.
User Data Request Type (See 7.15)	User-Data-Request-Type	M	Part of the user profile the S-CSCF requests from the HSS (e.g: complete profile). See 3GPP TS 29.229 [5] for all the possible values.
User Data Already Available (See 7.16)	User-Data-Already-Available	M	This indicates if the user profile is already available in the S-CSCF.

Routing Information (See 7.13)	Destination-Host	C	If the S-CSCF knows HSS name Destination-Host AVP shall be present in the command. This information is available if the request belongs to an already existing registration, e.g. in case of the re-registration, where the HSS name is stored in the S-CSCF. The HSS name is obtained from the Origin-Host AVP, which is received from the HSS, e.g. included in the MAA command. This information may not be available if the command is sent as a consequence of a session termination for an unregistered user. In this case the Destination-Host AVP is not present and the command is routed to the next Diameter node, e.g. SLF, based on the Diameter routing table in the S-CSCF.

Table 6.1.2.2: S-CSCF registration/deregistration notification response

Information element name	Mapping to Diameter AVP	Cat.	Description
Private User Identity (See 7.3)	User-Name	C	User private identity. It shall be present if it is available when the HSS sends the response. It may be absent in the following error case: when the Server-Assignment-Type of the request is UNREGISTERED_USER and the received public user identity is not known by the HSS.
Registration result (See 7.6)	Result-Code / Experimental-Result	M	Result of registration. Result-Code AVP shall be used for errors defined in the Diameter Base Protocol. Experimental-Result AVP shall be used for Cx/Dx errors. This is a grouped AVP which contains the 3GPP Vendor ID in the Vendor-Id AVP, and the error code in the Experimental-Result-Code AVP.
User Profile (See 7.7)	User-Data	C	Relevant user profile. It shall be present when Server-Assignment-Type in the request is equal to NO_ASSIGNMENT. If the Server-Assignment-Type in the request is equal to REGISTRATION, RE_REGISTRATION or UNREGISTERED_USER the User-Data AVP shall be present according to the rules defined in the section 6.6. If the S-CSCF receives more data than it is prepared to accept, it shall perform the de-registration of the user with User-Authorization-Type set to DEREGISTRATION_TOO_MUCH_DATA and send back a SIP 3xx or 480 (Temporarily Unavailable) response, which shall trigger the selection of a new S-CSCF by the I-CSCF, as specified in 3GPP TS 24.229 [8].
Charging Information (See 7.12)	Charging-Information	C	Addresses of the charging functions. It shall be present when Server-Assignment-Type in the request is equal to REGISTRATION, RE_REGISTRATION or UNREGISTERED_USER and when Result-Code is equal to DIAMETER_SUCCESS. When this parameter is included, the Primary Charging Collection Function address shall be included. All other elements shall be included if they are available.

6.1.2.1   Detailed behaviour

On registering/deregistering a public identity the S-CSCF shall inform the HSS. The same procedure is used by the S-CSCF to get the user profile. The relevant user profile downloaded is described in more detailed in the section 6.6. The

HSS holds information about the state of registration of all the identities of the user. The S-CSCF uses this procedure to update such state. The HSS shall, in the following order (in case of an error in any of the steps the HSS shall stop processing and return the corresponding error code, see 3GPP TS 29.229 [5]):

1. Check that the user is known. If not Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN. If there is neither a Public User Identity nor a Private User Identity included, the Experimental-Result-Code shall be set to DIAMETER_MISSING_USER_ID.

2. The HSS may check whether the private and public identities received in the request belong to the same user. If not Experimental-Result-Code shall be set to DIAMETER_ERROR_IDENTITIES_DONT_MATCH.

3. Check the Server Assignment Type value received in the request:

   - If it indicates REGISTRATION or RE_REGISTRATION, the HSS shall download the relevant user public identity information. . If the public identity's authentication pending flag which is specific for the private identity is set, the HSS shall clear it. The Result-Code shall be set to DIAMETER_SUCCESS and the HSS shall set the registration state of the public identity and associated public identities as registered (if not already registered).

     Only one public identity shall be present in the request. If more than one identity is present the Result-Code shall be set to DIAMETER_AVP_OCCURS_TOO_MANY_TIMES and no user information shall be returned. If there is no public identity present, the Experimental-Result-Code shall be set to DIAMETER_MISSING_USER_ID.

   - If it indicates UNREGISTERED_USER, the HSS shall store the S-CSCF name, set the registration state of the public identity as unregistered, i.e. registered as a consequence of a terminating call and download the relevant user public identity information. If there are multiple private identities associated to the public identity in the HSS, the HSS shall arbitrarily select one of the private identities and put it into the response message. The Result-Code shall be set to DIAMETER_SUCCESS.

     Only one public identity shall be present in the request. If more than one identity is present the Result-Code shall be set to DIAMETER_AVP_OCCURS_TOO_MANY_TIMES and the modifications specified in the previous paragraph shall not be performed. If there is no public identity present, the Experimental-Result-Code shall be set to DIAMETER_MISSING_USER_ID.

   - If it indicates TIMEOUT_DEREGISTRATION, USER_DEREGISTRATION, DEREGISTRATION_TOO_MUCH_DATA or ADMINISTRATIVE_DEREGISTRATION, the HSS shall clear the S-CSCF name associated to the private identity for all the public identities that the S-CSCF indicated in the request and set the registration state of the identities as not registered. If no public identity is present in the request, the private identity shall be present; the HSS shall clear the S-CSCF name for all the public identities associated to the private identity and set their registration state to not registered. The Result-Code shall be set to DIAMETER_SUCCESS.

   - If it indicates TIMEOUT_DEREGISTRATION_STORE_SERVER_NAME or USER_DEREGISTRATION_STORE_SERVER_NAME the HSS decides whether to keep the S-CSCF name associated to the private identity stored or not for all the public identities that the S-CSCF indicated in the request and set the registration state of the identities as unregistered. If no public identity is present in the request, the private identity shall be present. If the HSS decides to keep the S-CSCF name stored the HSS shall keeps the S-CSCF name stored for all the public identities associated to the private identity and set their registration state to unregistered.

     If the HSS decides to keep the S-CSCF name the Result-Code shall be set to DIAMETER_SUCCESS.

     If the HSS decides not to keep the S-CSCF name the Experimental-Result-Code shall be set to DIAMETER_SUCCESS_SERVER_NAME_NOT_STORED. If the HSS received public identities in the request, the HSS shall set the registration state to not registered for the public identity(ies) that the S-CSCF indicated in the request. If the HSS received a private identity in the request, the HSS shall set the registration state of all public identites related to the private identity to not registered.

   - If it indicates NO_ASSIGNMENT, the HSS checks whether the user is assigned for the S-CSCF requesting the data and download the user public identity information requested in the User-Data-Request-Type AVP. The Result-Code shall be set to DIAMETER_SUCCESS. If the requesting S-CSCF is not the same as the assigned S-CSCF, the Result-Code shall be set to DIAMETER_UNABLE_TO COMPLY.

Only one public user identity shall be present in the request. If more than one public identity is present the Result-Code shall be set to DIAMETER_AVP_OCCURS_TOO_MANY_TIMES and no user information shall be returned. If there is no public identity present, the Experimental-Result-Code shall be set to DIAMETER_MISSING_USER_ID.

- If it indicates AUTHENTICATION_FAILURE or AUTHENTICATION_TIMEOUT, the HSS shall clear the S-CSCF name for the public identity associated to the private identity that the S-CSCF indicated in the request and set the registration state of the identity as not registered. If the public identity's authentication pending flag which is specific for the private identity is set, the HSS shall clear it. The Result-Code shall be set to DIAMETER_SUCCESS.

Only one public identity shall be present in the request. If more than one identity is present the Result-Code shall be set to DIAMETER_AVP_OCCURS_TOO_MANY_TIMES and the modifications specified in the previous paragraph shall not be performed. If there is no public identity present, the Experimental-Result-Code shall be set to DIAMETER_MISSING_USER_ID.

See chapter 8.1.2 and 8.1.3 for the description of the handling of the error situations: reception of an S-CSCF name different from the one stored in the HSS and reception of a Server-Assignment-Type value not compatible with the registration state of the user.

CR-Form-v7

CHANGE REQUEST

⌘   **29.328** CR **036**   ⌘**rev** **2** ⌘   Current version: **6.0.0** ⌘

*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: ⌘	Dh interface			
Source: ⌘	CN4			
Work item code:⌘	IMS2-CCR		**Date:** ⌘	02/02/2004
Category: ⌘	**B**		**Release:** ⌘	Rel-6

Use <u>one</u> 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 <u>one</u> 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: ⌘	There does not exist a solution for user identity-HSS resolution on Sh interface.
Summary of change:⌘	The Dh interface is proposed to be added between AS and SLF to resolve the public user identity – HSS name mapping.
Consequences if not approved: ⌘	Misalignment with TS 23.228, 23.002 and 23.218

Clauses affected: ⌘	1, 3.2, 6

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

Other comments: ⌘	

How to create CRs using this form:
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Below is a brief summary:

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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 containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

1 Scope

This 3GPP Technical Specification (TS) specifies:

1.   ~~the~~ The interactions between the HSS (Home Subscriber Server) and the SIP AS (Application Server) and between the HSS and the OSA SCS (Service Capability Server). This interface is referred to as the Sh reference point.

2.   The interactions between the SIP AS and the SLF (Subscription Locator Function) and between the OSA SCS and the SLF. This interface is referred to as the Dh reference point.

The IP Multimedia (IM) Core Network Subsystem stage 2 is specified in 3GPP TS 23.228 [1] and the signalling flows for the IP multimedia call control based on SIP and SDP are specified in 3GPP TS 24.228 [2].

The IP Multimedia (IM) Session Handling with the IP Multimedia (IM) call model is specified in 3GPP TS 23.218 [4].

This document addresses the signalling flows and message contents for the protocol at the Sh and Dh interface.

This document also addresses how the functionality of Ph interface is accomplished.

The Presence Service Stage 2 description (architecture and functional solution) is specified in 3GPP TS 23.141 [18].

*** Next modified section **

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AS	Application Server
CSCF	Call Session Control Function
C	Conditional
HSS	Home Subscriber Server
IE	Information Element
IP	Internet Protocol
IM	IP Multimedia
IMS	IP Multimedia Subsystem
M	Mandatory
O	Optional
SIP	Session Initiation Protocol
SLF	Subscription Locator Function
S-CSCF	Serving CSCF

*** Next modified section **

6 Procedure Descriptions

6.X User identity to HSS resolution

The User identity to HSS resolution mechanism enables the AS to find the address of the HSS that holds the subscriber data for a given public user identity when multiple and separately addressable HSSs have been deployed by the network operator. The resolution mechanism is not required in networks that utilise a single HSS or when an AS is configured to use pre-defined HSS.

The resolution mechanism described in 3GPP TS 23.228 [8] is based on the Subscription Locator Function (SLF). The AS accesses the subscription locator via the Dh interface. The Dh interface is always used in conjunction with the Sh interface. The Dh interface is based on Diameter. Its functionality is implemented by means of the routing mechanism provided by an enhanced Diameter redirect agent, which is able to extract the public user identity from the received requests.

To get the HSS address the AS sends to the SLF the Sh requests aimed for the HSS. On receipt of the HSS address from the SLF, the AS shall send the Sh requests to the HSS. The AS may store the HSS address and use it in further requests associated to the same public user identity.

In networks where the use of the user identity to HSS resolution mechanism is required and the AS is not configured to use predefined HSS, each AS shall be configured with the address/name of the SLF implementing this resolution mechanism.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **29.229** CR **035** | ⌘ **rev** | **-** | ⌘ | Current version: | **5.6.0** | ⌘ |

*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:	⌘	Error for no identification in SAR command

Source:	⌘	CN4

Work item code:	⌘	TEI		**Date:** ⌘	17/02/2004

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:** | ⌘ | In Cx interface protocol definition, the Diameter Base Protocol error 'DIAMETER_UNABLE_TO_COMPLY' is reused as a 'catch-all' error for any problems not identifid in the detailed description.

One error situation where no error is currently defined, but the ABNF is not broken is where a SAR is sent for registration with no identification included in the message, since both User name and Public Identity are marked as Optional in the ABNF. Therefore, an Experimental-Result-Code needs to be defined to convey this error. |
|---|---|---|

Summary of change:	⌘	A new Experimental Result Code is defined - DIAMETER_MISSING_USER_ID

Consequences if not approved:	⌘	There is no error defined for the situation where public and private id are missing from the SAR message.

Clauses affected:	⌘	6.2.2.x (new)

		Y	**N**			
Other specs affected:	⌘	X		Other core specifications	⌘	29.228 CR 081
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

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6.2.2 Permanent Failures

Errors that fall within the Permanent Failures category are used to inform the peer that the request failed, and should not be attempted again.

…

6.2.2.x DIAMETER_MISSING_USER_ID (5xxx)

The HSS informs the S-CSCF that the message did not contain a Private-Id and/or a Public-Id and so the message could not be processed.

CR-Form-v7

CHANGE REQUEST

⌘ **29.328 CR 043** ⌘**rev 1** ⌘ Current version: **6.0.0** ⌘

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: ⌘	Clarification of the AS Permissions List and its relevance to table 7.6.1	
Source: ⌘	CN4	
Work item code:⌘	TEI6	**Date:** ⌘ 13/01/2003
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:
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   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: ⌘	In 6.2 there is no description of the intention of the AS Permissions list with relevance to the table last column in table 7.6.1. Without this clear linkage, table 7.6.1 could be considered to be incomplete as the last column is ambiguous – it appears that the column describes all commands that the Data References may appear in (which would then include Sh-Notif for some Data References) whereas the intention is that the column includes the set of AS permissions that may be stored in the AS Permissions List at the HSS for each data reference.
Summary of change:⌘	Description of AS Permissions list in section 6.2 is expanded. Table 7.6.1 is modified.
Consequences if not approved: ⌘	AS permissions list remains ambiguous, and table 7.6.1 could be interpretted incorrectly.

Clauses affected: ⌘	6.2, 7.6	

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

Other comments: ⌘	

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.

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6.2   AS permissions list

In table 7.6.1, the contents of the Data-AVP are described. Some of the individual elements carried within Data-AVP may be requested by the AS from the HSS using the Sh-Pull command (see section 6.1.1) or may be updated at the HSS by the AS using the Sh-Update command (see section 6.1.2). The AS may also request that the HSS notifies the ~~HSS~~AS of changes to specific elements within the Data-AVP using the Sh-Subs-Notif command (see section 6.1.3). The HSS will only allow these operations to take place if the element of the Data-AVP is permitted to be included in the specific command requested by the AS, as indicated in table 7.6.1.

To manage whether an AS may request each element of Data-AVP with a specific command, t~~T~~he HSS shall maintain a list of AS permissions (the 'AS Permissions List'). AS permissions are identified by AS identity and Data Reference with ~~(See Table 7.6.1). t~~The possible permissions associated with each Data Reference being~~are~~ Sh-Pull, Sh-Update, Sh-Subs-Notif or any combination of these permissions (see table 7.6.1 for details of which permissions are allowed for each Data Reference). The permissions apply to all users served by the HSS, they are not user specific. When an AS requests Sh-Pull, Sh-Update or Sh-Subs-Notif the HSS shall check permissions and return an error result if the AS does not have the required permission.

****** Next Changed Section ******

7.6   Data

This information element contains an XML document conformant to the XML schema defined in Annex D.

Annex C specifies the UML logical model of the data downloaded via the Sh interface.

Table 7. 6.1 defines the reference values, access key and recommended AS permissions (as described in section 6.2)~~access rights~~ for the data accessible via the Sh interface. It is a matter of operator policy to further restrict the ~~access~~ AS permission rights defined in table 7.6.1.

Table 7.6.1: Data accessible via Sh interface

Data Ref.	XML tag	Defined in	Access key	~~May be included in the operations:~~Operations AS may be permitted to use
0	RepositoryData	7.6.1	User-Identity + Data-Reference + Service-Indication	Sh-Pull, Sh-Update, Sh-Subs-Notif
10	PublicIdentifiers	7.6.2	User-Identity + Data-Reference	Sh-Pull
11	IMSUserState	7.6.3		Sh-Pull, Sh-Subs-Notif
12	S-CSCFName	7.6.4		Sh-Pull, Sh-Subs-Notif
13	InitialFilterCriteria	7.6.5	User-Identity + Data-Reference + Server-Name	Sh-Pull, Sh-Subs-Notif
14	LocationInformation	7.6.6	User-Identity + Data-Reference+ Requested-Domain	Sh-Pull
15	UserState	7.6.7		Sh-Pull
16	Charging information	7.6.8		Sh-Pull

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** CR **032** ⌘rev **3** ⌘ Current version: **5.4.1** ⌘

*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: ⌘	Introduction of 'Identity-Set' AVP	
Source: ⌘	CN4	
Work item code:⌘	TEI6	***Date:*** ⌘ 30/01/2004
Category: ⌘	**C**	***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: ⌘	To allow the AS to identify the set of IMS Public Identities that it wishes to download. To define MSISDN as a Data type.
Summary of change:⌘	'Identity-Set' AVP is defined and included in the ABNF of the UDR command. MSISDN is added as a Data type
Consequences if not approved: ⌘	AS is unable to identify the set of IMS Public identities that it wishes to download.

Clauses affected: ⌘	6.1.1, 6.3, 6.3.4, 6.3.x (new)

	Y	N		
Other specs affected: ⌘	**X**		Other core specifications ⌘	29.328 CR 045
		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.

6.1.1 User-Data-Request (UDR) Command

The User-Data-Request (UDR) command, indicated by the Command-Code field set to 306 and the 'R' bit set in the Command Flags field, is sent by a Diameter client to a Diameter server in order to request user data.

Message Format

```
< User-Data -Request> ::=   < Diameter Header: 306, 167772152, REQ, PXY >
                            < Session-Id >
                            { Vendor-Specific-Application-Id }
                            { Auth-Session-State }
                            { Origin-Host }
                            { Origin-Realm }
                            [ Destination-Host ]
                            { Destination-Realm }
                            { User-Identity }
                            [ Server-Name ]
                            [ Service-Indication ]
                            { Data-Reference }
                            [Identity-Set]
                            *[ Requested-Domain ]
                            [ Current-Location ]
                            *[ AVP ]
                            *[ Proxy-Info ]
                            *[ Route-Record ]
```

*****Next Changed Section*****

6.3 AVPs

The following table describes the Diameter AVPs defined for the Sh interface protocol, their AVP Code values, types, possible flag values and whether the AVP may or not be encrypted.

Table 6.3.1: Diameter Multimedia Application AVPs

Attribute Name	AVP Code	Section defined	Value Type	AVP Flag rules				
				Must	May	Should not	Must not	May Encr.
User-Identity	100	6.3.1	Grouped	M, V				N
MSISDN	101	6.3.2	OctetString	M, V				N
User-Data	102	6.3.3	OctetString	M, V				N
Data-Reference	103	6.3.4	Enumerated	M, V				
Service-Indication	104	6.3.5	OctetString	M, V				N
Subs-Req-Type	105	6.3.6	Enumerated	M, V				N
Requested-Domain	106	6.3.7	Enumerated	M, V				N
Current-Location	107	6.3.8	Enumerated	M, V				N
Identity-Set	XXX	6.3.X	Enumerated	V			M	N
Server-Name	3	6.3.9	UTF8String	M, V				N

NOTE 1: The AVP header bit denoted as 'M', indicates whether support of the AVP is required. The AVP header bit denoted as 'V', indicates whether the optional Vendor-ID field is present in the AVP header. For further details, see 3GPP TS 29.229 [6].

NOTE 2: Depending on the concrete command.

******Next Changed Section******

6.3.4   Data-Reference AVP

The Data-Reference AVP (AVP code 103) is of type Enumerated, and indicates the type of the requested user data in the operation UDR and SNR. Its exact values and meaning is defined in 3GPP TS 29.328 [1]. The following values are defined (more details are given in 3GPP TS 29.328 [1]):

RepositoryData (0)

IMSPublicIdentity~~fiers~~ (10)

    This value is used to request the read or notification of changes in the IMS public identities fields

IMSUserState (11)

S-CSCFName (12)

InitialFilterCriteria (13)

    This value is used to request initial filter criteria relevant to the requesting AS

LocationInformation (14)

UserState (15)

ChargingInformation (16)

MSISDN (xx)

******Next Changed Section******

6.3.x   Identity-Set AVP

The Identity-Set AVP (AVP code XXX) is of type Enumerated and indicates the requested set of IMS Public Identities. The Following values are defined:-

ALL_IDENTITIES (0)

REGISTERED_IDENTITIES (1)

IMPLICIT_IDENTITIES (2)