3GPP TSG CN Plenary Meeting #26 **NP-040531**
8th – 10th December 2004 Athens, Greece.

Source: TSG CN WG4

Title: Corrections on IMS2 Sh-interface

Agenda item: 9.1

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level N4-040	Phase	Subject	Cat	Ver_C
29.328	102	2	1559	Rel-6	Only One Error Required for the AS Permissions Table Checking Procedure	F	6.3.0
29.328	103		1464	Rel-6	Default Handling of Error Cases	F	6.3.0
29.328	101	1	1611	Rel-6	Sh-Pull Data Download	F	6.3.0
29.328	097	2	1700	Rel-6	Removal of Notification of the Authentication Pending State upon Registration	F	6.3.0

3GPP TSG-CN WG4 Meeting #25 ***N4-041464***

Seoul, KOREA. 15th to 19th November 2004.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.328** **CR** **103** ⌘ **rev** **-** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Default Handling of Error Cases
Source:	⌘	CN4
Work item code:	⌘	IMS2-CCR
Date:	⌘	20/10/2004
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:

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 current specification of the Sh procedures does not describe all the possible error cases and the appropriate behaviour of the HSS when it is not able to handle the request for error cases not described.
Summary of change:	⌘	A text describing the default handling of error cases is added. If the HSS is not able to proceed the received request for other reasons than thoses already described, it shall return the Result-Code 'DIAMETER_UNABLE_TO_COMPLY' to the AS and shall stop processing the request.
Consequences if not approved:	⌘	Incomplete specification leading to misoperations during IMS procedures on the Sh interface.

Clauses affected:	⌘	6.1.1.1, 6.1.2.1, 6.1.3.1

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 Modification ***

6.1.1.1 Detailed behaviour

The conditions for the inclusion of Requested-Domain as an additional key to the requested data are described in table 7.6.1. If repository data is requested, Service-Indication shall be present in the request. If initial filter criteria are requested, the Server-Name AVP shall contain the SIP URL of the AS that initiates the request; requests for initial filter criteria are limited to those initial filter criteria which are relevant to the requesting AS.

Upon reception of the Sh-Pull request, the HSS shall, in the following order:

1. Check that the AS sending the request (identified by the Origin-Host AVP) has Sh-Pull permission in the AS Permissions List (See 6.2). If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED in the Sh-Pull Response.

2. Check that the user for whom data is asked exists in HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Pull Response.

3. Check that the requested user data is allowed to be read by the AS.

   - If the data referenced in the request is not allowed to be read, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_READ in the Sh-Pull Response.

4. Check whether or not the data that is requested to be downloaded by the AS is currently being updated by another entity. If there is an update of the data in progress, the HSS shall delay the Sh-Pull-Resp message until the update has been completed and shall include in the Sh-Pull-Resp message the updated data requested.

If there is an error in any of the above steps then the HSS shall stop processing and shall return the error code specified in the respective step (see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7] for an explanation of the error codes).

If the HSS cannot fulfil the received request for reasons not stated in the above steps, e.g. due to database error, it shall stop processing the request and set Result-Code to DIAMETER_UNABLE_TO_COMPLY.

Otherwise, the requested operation shall take place and the HSS shall return the Result-Code AVP set to DIAMETER_SUCCESS and the requested data identified by User-Identity and Data-Reference in the Sh-Pull Response message.~~.~~

*** Second Modification ***

6.1.2.1 Detailed behaviour

Within the Sh-Update Request, the keys to determine the updated data are part of the information element Data (See 7.6). When data in the repository is updated (i.e. added, modified or removed) Service-Indication and Sequence-Number are also sent as part of the information element Data.

Newly added transparent data shall be associated with a Sequence Number of 0 in the Sh-Update Request. Sequence Number value 0 is reserved exclusively for indication of newly added transparent data.
Modified and removed transparent data shall be associated within the Sh-Update Request with a Sequence Number of n+1 where n is the original Sequence Number associated with the transparent data before modification or removal. If n equals 65535, then the next modification or deletion of that transparent data shall be associated with a Sequence Number of 1.

Upon reception of the Sh-Update request, the HSS shall, in the following order:

1. Check that the AS sending the request (identified by the Origin-Host AVP) has Sh-Update permission in the AS Permissions List (See 6.2). If the AS does not have Sh-Update permission, Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED in the Sh-Update Response.

2. Check that the user for whom data is asked to be updated exists in the HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Update Response.

3. Check that the user data that is requested to be updated by the AS, is allowed to be updated. If the data is not allowed to be updated, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_MODIFIED in the Sh-Update Response.

4. Check whether or not the data that is requested to be updated by the AS, as identified by the Service-Indication, is currently being updated by another entity. If there is an update of the data in progress, Experimental-Result Code shall be set to DIAMETER_PRIOR_UPDATE_IN_PROGRESS in the Sh-Update Response.

5. Check whether or not there is any repository data stored at the HSS already for the specified Service-Indication and the associated user.

   - If repository data identified by the Service-Indication is stored at the HSS for the specified user, check the following premises:

     1. Sequence_Number_in_Sh_Update is not equal to 0

     2. (Sequence_Number_in_Sh_Update - 1) is equal to (Sequence_Number_In_HSS modulo 65535)

     - If either of the above premises is false then Experimental-Result-Code shall be set to DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC in the Sh-Update Response.

     - If both of the above premises are true, then check whether or not Service Data is received within the Sh-Update Req.

       - If Service Data is included in the Sh-Update Req, check whether or not the size of the data is greater than that which the HSS is prepared to accept.

         - If there is more data than the HSS is prepared to accept then Experimental-Result-Code shall be set to DIAMETER_ERROR_TOO_MUCH_DATA and the new data shall be discarded.

         - If the HSS is prepared to accept the data, then the repository data stored at the HSS shall be updated with the repository data sent in the Sh-Update Req and the Sequence Number associated with that repository data shall be updated with that sent in the Sh-Update Req. This triggers the sending of Sh-Notif messages to any other ASs that are subscribed to Notifications for updates to the service data for that user (see 6.1.4).

       - If Service Data is not received, the data stored in the repository at the HSS shall be removed, and as a consequence the Service Indication and the Sequence Number associated with the removed data shall also be removed. This triggers the sending of Sh-Notif messages to any other ASs that are subscribed to Notifications for updates to the service data for that user (see 6.1.4). After sending Sh-Notif messages, the subscriptions to Notifications for the removed Repository Data shall be deleted.

   - If repository data identified by the Service-Indication is not stored for the user i.e. the Sh-Update Req intends to create a new repository data, check whether or not the Sequence Number in the Sh-Update Req is 0.

     - If the sequence number is not set to 0, Experimental-Result Code shall be set to DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC

     - If the sequence number is set to 0 check whether Service Data is included within the Sh-Update Req.

       - If Service Data is not included in the Sh-Update Req, then Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED and the operation shall be ignored by the HSS.

       - If Service Data is included in the Sh-Update Req, check whether or not the size of the data is greater than that which the HSS is prepared to accept. If there is more data than the HSS is prepared to accept then Experimental-Result-Code shall be set to DIAMETER_ERROR_TOO_MUCH_DATA and the new data shall be discarded.

       - If the HSS is prepared to accept the data included in the Sh-Update Req, then the data shall be stored inwithin the data repository in the HSS.

If there is an error in any of the above steps then the HSS shall stop processing and shall return the error code specified in the respective step (see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7] for an explanation of the error codes).

If the HSS cannot fulfil the received request for reasons not stated in the above steps, e.g. due to database error, it shall stop processing the request and set Result-Code to DIAMETER_UNABLE_TO_COMPLY.

Otherwise, the requested operation shall take place and the HSS shall return the Result-Code AVP set to DIAMETER_SUCCESS.

NOTE: When an AS receives DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC the AS may attempt to resolve the inconsitency between the version of the repository data that it holds and that stored at the HSS. It may execute a Sh-Pull to retrieve the current version of the data from the HSS or it tmay wait to receive a subsequent Sh-Notif message from the HSS for the affected repository data.

*** Third Modification ***

6.1.3.1 Detailed behaviour

The HSS shall take note of the subscription request on the data identified by User-Identity and Data-Reference. If notifications on changes of repository data are requested, Service-Indication shall be present in the request. If notifications on changes of filter criteria are requested, the Server-Name AVP shall be used as key to the filter criteria. The Server-Name AVP shall contain the SIP URL of the AS sending the request.

Upon reception of the Sh-Subs-Notif request, the HSS shall, in the following order (if there is an error in any of the following steps the HSS shall stop processing and return the corresponding error code, see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7]):

1. Check that the user for whom notifications are asked exists in HSS. If not, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Subs-Notif Response.

2. Check that the AS sending the request (identified by the Origin-Host AVP) has Sh-Subs-Notif permission in the AS Permissions List (See 6.2). If the AS does not have Sh-Subs-Notif permission, Experimental-Result Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED in the Sh-Subs-Notif Response.

3. Check that Notifications are allowed for the requested user (see table 7.6). If the Notifications of changes in the data referenced in the request are not allowed, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_NOTIFIED in the Sh-Subs-Notif Response.

If the HSS cannot fulfil the received request for reasons not stated in the above steps, e.g. due to database error, it shall stop processing the request and set Result-Code to DIAMETER_UNABLE_TO_COMPLY.

3GPP TSG-CN WG4 Meeting #25 ***N4-041559***

Seoul, KOREA. 15th to 19th November 2004. **(Revision of 1515)**

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.328** **CR** **102** ⌘ **rev** **2** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Only One Error Required for the AS Permissions Table Checking Procedure
Source:	⌘	CN4
Work item code:	⌘	IMS2-CCR
Date:	⌘	17/11/2004
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:
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:	⌘	At CN4#22 in Atlanta, February 2004, a CR was approved (043) to change the AS Permission List and its use. Prior to this CR, there was an Sh permission per AS. Additionally there was a table of Data Reference vs Sh operation. For each cell there was a permission globally on the HSS. This was revised so that each table applied for a given AS. The procedures were originally written so that one error was given for an AS that did not have access and another failure was given when the table cell did not indicate the operation was allowed for a Data Reference and Command combination. Now these have been combined, there is not a valid reason to have two error messages. Furthermore, the checking is not sequential anymore it is combined.
Summary of change:	⌘	This CR removes the first check and moves the permission checks for AS/Data-Reference/Command before the check for valid PUID.
Consequences if not approved:	⌘	Inappropriate detailed behaviour of the commands: Sh-Pull, Sh-Update and Sh-Subs-Notif.

Clauses affected:	⌘	6.1.1.1, 6.1.2.1, 6.1.3.1

Other specs affected:	⌘	Y	N		⌘
			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 containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

First Change

6.1.1.1 Detailed behaviour

The conditions for the inclusion of Requested-Domain as an additional key to the requested data are described in table 7.6.1. If repository data is requested, Service-Indication shall be present in the request. If initial filter criteria are requested, the Server-Name AVP shall contain the SIP URL of the AS that initiates the request; requests for initial filter criteria are limited to those initial filter criteria which are relevant to the requesting AS.

Upon reception of the Sh-Pull request, the HSS shall, in the following order:

~~1. Check that the AS sending the request (identified by the Origin-Host AVP) has Sh-Pull permission in the AS Permissions List (See 6.2). If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED in the Sh-Pull Response.~~

~~2. Check that the user for whom data is asked exists in HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Pull Response.~~

1~~3~~. In the AS permission list (s~~S~~ee section 6.2) ~~C~~check that the requested user data is allowed to be read (Sh-Pull) by thise AS by checking the combination of the identity of the AS sending the request (identified by the Origin-Host AVP) and the supplied Data-Reference.

~~—~~If the data referenced in the request is not allowed to be read, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_READ in the Sh-Pull Response.

2. Check that the user for whom data is asked exists in HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Pull Response.

3~~4~~. Check whether or not the data that is requested to be downloaded by the AS is currently being updated by another entity. If there is an update of the data in progress, the HSS shall delay the Sh-Pull-Resp message until the update has been completed and shall include in the Sh-Pull-Resp message the updated data requested.

If there is an error in any of the above steps then the HSS shall stop processing and shall return the error code specified in the respective step (see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7] for an explanation of the error codes). Otherwise, the requested operation shall take place and the HSS shall return the Result-Code AVP set to DIAMETER_SUCCESS and the requested data identified by User-Identity and Data-Reference in the Sh-Pull Response message..

Next Change

6.1.2.1 Detailed behaviour

Within the Sh-Update Request, the keys to determine the updated data are part of the information element Data (See 7.6). When data in the repository is updated (i.e. added, modified or removed) Service-Indication and Sequence-Number are also sent as part of the information element Data.

Newly added transparent data shall be associated with a Sequence Number of 0 in the Sh-Update Request. Sequence Number value 0 is reserved exclusively for indication of newly added transparent data.
Modified and removed transparent data shall be associated within the Sh-Update Request with a Sequence Number of n+1 where n is the original Sequence Number associated with the transparent data before modification or removal. If n equals 65535, then the next modification or deletion of that transparent data shall be associated with a Sequence Number of 1.

Upon reception of the Sh-Update request, the HSS shall, in the following order:

~~1. Check that the AS sending the request (identified by the Origin-Host AVP) has Sh-Update permission in the AS Permissions List (See 6.2). If the AS does not have Sh-Update permission, Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED in the Sh-Update Response.~~

~~2. Check that the user for whom data is asked to be updated exists in the HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Update Response.~~

1~~3~~. In the AS permission list (s~~S~~ee section 6.2) ~~C~~check that the user data that is requested to be updated (Sh-Update) by this~~e~~ AS, ~~-~~is allowed to be updated by checking the combination of the identity of the AS sending the request (identified by the Origin-Host AVP) and the supplied Data-Reference.

- If the data is not allowed to be updated, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_MODIFIED in the Sh-Update Response.

2. Check that the user for whom the data is asked to be updated exists in the HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Update Response.

3~~4~~. Check whether or not the data that is requested to be updated by the AS, as identified by the Service-Indication, is currently being updated by another entity. If there is an update of the data in progress, Experimental-Result Code shall be set to DIAMETER_PRIOR_UPDATE_IN_PROGRESS in the Sh-Update Response.

4~~5~~. Check whether or not there is any repository data stored at the HSS already for the specified Service-Indication and the associated user.

- If repository data identified by the Service-Indication is stored at the HSS for the specified user, check the following premises:

  1. Sequence_Number_in_Sh_Update is not equal to 0

  2. (Sequence_Number_in_Sh_Update - 1) is equal to (Sequence_Number_In_HSS modulo 65535)

  - If either of the above premises is false then Experimental-Result-Code shall be set to DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC in the Sh-Update Response.

  - If both of the above premises are true, then check whether or not Service Data is received within the Sh-Update Req.

    - If Service Data is included in the Sh-Update Req, check whether or not the size of the data is greater than that which the HSS is prepared to accept.

      - If there is more data than the HSS is prepared to accept then Experimental-Result-Code shall be set to DIAMETER_ERROR_TOO_MUCH_DATA and the new data shall be discarded.

      - If the HSS is prepared to accept the data, then the repository data stored at the HSS shall be updated with the repository data sent in the Sh-Update Req and the Sequence Number associated with that repository data shall be updated with that sent in the Sh-Update Req. This triggers the sending of Sh-Notif messages to any other ASs that are subscribed to Notifications for updates to the service data for that user (see 6.1.4).

    - If Service Data is not received, the data stored in the repository at the HSS shall be removed, and as a consequence the Service Indication and the Sequence Number associated with the removed data shall also be removed. This triggers the sending of Sh-Notif messages to any other ASs that are subscribed to Notifications for updates to the service data for that user (see 6.1.4). After sending Sh-Notif messages, the subscriptions to Notifications for the removed Repository Data shall be deleted.

- If repository data identified by the Service-Indication is not stored for the user i.e. the Sh-Update Req intends to create a new repository data, check whether or not the Sequence Number in the Sh-Update Req is 0.

  - If the sequence number is not set to 0, Experimental-Result Code shall be set to DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC

  - If the sequence number is set to 0 check whether Service Data is included within the Sh-Update Req.

- If Service Data is not included in the Sh-Update Req, then Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED and the operation shall be ignored by the HSS.

- If Service Data is included in the Sh-Update Req, check whether or not the size of the data is greater than that which the HSS is prepared to accept. If there is more data than the HSS is prepared to accept then Experimental-Result-Code shall be set to DIAMETER_ERROR_TOO_MUCH_DATA and the new data shall be discarded.

- If the HSS is prepared to accept the data included in the Sh-Update Req, then the data shall be stored inwithin the data repository in the HSS.

If there is an error in any of the above steps then the HSS shall stop processing and shall return the error code specified in the respective step (see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7] for an explanation of the error codes). Otherwise, the requested operation shall take place and the HSS shall return the Result-Code AVP set to DIAMETER_SUCCESS.

NOTE: When an AS receives DIAMETER_ERROR_TRANSPARENT_DATA_OUT_OF_SYNC the AS may attempt to resolve the inconsitency between the version of the repository data that it holds and that stored at the HSS. It may execute a Sh-Pull to retrieve the current version of the data from the HSS or it tmay wait to receive a subsequent Sh-Notif message from the HSS for the affected repository data.

Last Change

6.1.3.1 Detailed behaviour

The HSS shall take note of the subscription request on the data identified by User-Identity and Data-Reference. If notifications on changes of repository data are requested, Service-Indication shall be present in the request. If notifications on changes of filter criteria are requested, the Server-Name AVP shall be used as key to the filter criteria. The Server-Name AVP shall contain the SIP URL of the AS sending the request.

Upon reception of the Sh-Subs-Notif request, the HSS shall, in the following order (if there is an error in any of the following steps the HSS shall stop processing and return the corresponding error code, see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7]):

~~1. Check that the user for whom notifications are asked exists in HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Subs-Notif Response.~~

1~~2~~. In the AS permission list (s~~S~~ee section 6.2) ~~C~~the HSS shall check that the AS~~requested user data~~ is allowed to subscribe to ~~to be notified~~notifications (Sh-Subs-Notif) ~~to this AS~~ for the requested user data by checking the combination of the identity of ~~that~~ the AS sending the request (identified by the Origin-Host AVP) and the supplied Data-Reference.~~has Sh-Subs-Notif permission in the AS Permissions List (See 6.2).~~

- If thi~~s~~e AS does not have Sh-Subs-Notif permission for the data referenced, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_NOTIFIED ~~DIAMETER_ERROR_OPERATION_NOT_ALLOWED~~ in the Sh-Subs-Notif Response.

2. Check that the user for whom notifications are asked exists in HSS. If not, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Subs-Notif Response.

~~3. Check that Notifications are allowed for the requested user (see table 7.6). If the Notifications of changes in the data referenced in the request are not allowed, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_NOTIFIED in the Sh-Subs-Notif Response.~~

3GPP TSG-CN WG4 Meeting #25 ***N4-041611***

Seoul, Korea - 15th to 19th November 2004. **Revised from N4-041280**

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.328** **CR** **101** ⌘ **rev** **1** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Sh-Pull Data Download
Source:	⌘	CN4
Work item code:	⌘	IMS2-CCR
Date:	⌘	15/11/2004
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),*
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Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	The detailed behaviour of Sh-Pull specifies that if the data requested is currently being updated by another entity, the HSS should delay the Sh-Pull Response until the update has been completed. This paragraph states that new data would be returned when a conflict arises. This implies an implementation requirement. For many commercial databases backups of the data are used for these conflict conditions and as we are talking about microseconds of CPU time for these operations we suggest modification of this wording to provide the oringinal intention of the requirement, that corrupt data should not be returned when simultaneous read and write operations occur on granular data within the database.
Summary of change:	⌘	The detailed behaviour is changed to say that if this situation arises the returned data is not corrupted.
Consequences if not approved:	⌘	Implementation requirements are specified which would cause delay in conflict conditions in a database. These implementation type of requirements should not be specified in standards. The crucial point is that the database is designed to be able to deal with them and not provide back corrupt data.

Clauses affected:	⌘				
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.

6.1.1.1 Detailed behaviour

The conditions for the inclusion of Requested-Domain as an additional key to the requested data are described in table 7.6.1. If repository data is requested, Service-Indication shall be present in the request. If initial filter criteria are requested, the Server-Name AVP shall contain the SIP URL of the AS that initiates the request; requests for initial filter criteria are limited to those initial filter criteria which are relevant to the requesting AS.

Upon reception of the Sh-Pull request, the HSS shall, in the following order:

1. Check that the AS sending the request (identified by the Origin-Host AVP) has Sh-Pull permission in the AS Permissions List (See 6.2). If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_OPERATION_NOT_ALLOWED in the Sh-Pull Response.

2. Check that the user for whom data is asked exists in HSS. If not, Experimental-Result-Code shall be set to DIAMETER_ERROR_USER_UNKNOWN in the Sh-Pull Response.

3. Check that the requested user data is allowed to be read by the AS.

   - If the data referenced in the request is not allowed to be read, Experimental-Result Code shall be set to DIAMETER_ERROR_USER_DATA_CANNOT_BE_READ in the Sh-Pull Response.

4. Check whether or not the data that is requested to be downloaded by the AS is currently being updated by another entity. If there is an update of the data in progress, the HSS may~~shall~~ delay the Sh-Pull-Resp message until the update has been completed and shall include in the Sh-Pull-Resp message the updated data requested. The HSS shall ensure that the data returned is not corrupted by this conflict.

If there is an error in any of the above steps then the HSS shall stop processing and shall return the error code specified in the respective step (see 3GPP TS 29.329 [5] and 3GPP TS 29.229 [7] for an explanation of the error codes). Otherwise, the requested operation shall take place and the HSS shall return the Result-Code AVP set to DIAMETER_SUCCESS and the requested data identified by User-Identity and Data-Reference in the Sh-Pull Response message.

3GPP TSG-CN WG4 Meeting #25 ***N4-041700***

Seoul, KOREA. 15th to 19th November 2004. **Revised from N4-041600**

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.328** **CR** **097** ⌘ **rev** **2** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Removal of Notification of the Authentication Pending State upon Registration
Source:	⌘	CN4
Work item code:	⌘	IMS2-CCR
Date:	⌘	19/11/2004
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:

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:	⌘	Authentication pending is a very short transient state (it could be just milliseconds). When an IMS user is in an authentication pending transient state, this user still has one of the 3 registration states i.e. REGISTERED, NOT_REGISTERED, or REGISTERED_UNREG_SERVICES. It is not really necessary for an AS to know an IMS user is authentication pending. During an IMS user's registration, the user's authentication pending state changes 2 times (from not_pending to pending and back again to not_pending). So notification of the user's authentication state changes will generate a lot of network traffic to Application Servers to little effect.
Summary of change:	⌘	A sentence is added to the Notification section to say since authentication pending is a transient state of normally very short duration, notification of an IMS user's authentication state change shall not be sent to Application Servers.
Consequences if not approved:	⌘	Multiple notifications of state changes are sent to Application Servers generating a lot of unnecessary traffic. This will make the Sh interface inefficient.

Clauses affected:	⌘	6.1.4.1

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

Other comments: ⌘	

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6.1.4.1 Detailed behaviour

The keys to the updated data are part of the information element User-Data (See Annex C). When data repository is updated Service-Indication is also part of the information element User-Data.

Since authentication pending is a transient state of normally very short duration, notification of an IMS user's state change, to and from the authentication pending state shall not be sent to Application Servers, when the previous state before authentication pending and next state after authentication pending are the same. If the states are different before the authentication pending state is entered and after the authentication pending state is left then notification is sent to the AS of this new state.