3GPP TSG CN Plenary Meeting #25 **NP-040394**
8th – 10th August 2004 Palm Springs, US.

Source: TSG CN WG4

Title: Corrections on IMS Rel-5 Sh-Interface

Agenda item: 8.1

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level N4-04	Phase	Subject	Cat	Ver_C
29.329	042		0781	Rel-5	Incorrect Data-Reference AVP in Subscriber Notification Answer Command	F	5.6.0
29.329	043		0782	Rel-6	Incorrect Data-Reference AVP in Subscriber Notification Answer Command	A	6.1.0
29.329	040	1	0841	Rel-5	Public-Identity is unspecified for the Sh interface	F	5.6.0
29.329	041	1	0842	Rel-6	Public-Identity is unspecified for the Sh interface	A	6.1.0
29.329	044	1	0843	Rel-5	Single Public_Identity required in Grouped User-Identity AVP	F	5.6.0
29.329	045	1	0844	Rel-6	Single Public_Identity required in Grouped User-Identity AVP	A	6.1.0
29.229	060		1071	Rel-5	Correction of the Application-Id code	F	5.7.0
29.229	061		1072	Rel-6	Correction of the Application-Id code	A	6.1.0
29.329	048		1073	Rel-5	Correction of the Application-Id code	F	5.6.0
29.329	049		1074	Rel-6	Correction of the Application-Id code	A	6.1.0

3GPP TSG CN WG4 Meeting #23bis
Helsinki, FINLAND, 21st – 23rd JUNE 2004

N4-040781

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **042** ⌘ **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 ☒

Title:	⌘	Incorrect Data-Reference AVP in Subscriber Notification Answer Command
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	28/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Incorrect Data-Reference AVP in Subscriber Notification Answer Command
Summary of change:	⌘	This is an essential correction. The Data-Reference AVP is removed from the Subscriber Notification Answer Command
Consequences if not approved:	⌘	Optional AVP is present but unclear how it is used.

Clauses affected:	⌘	6.1.6

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.

6.1.6 Subscribe-Notifications-Answer (SNA) Command

The Subscribe-Notifications-Answer command, indicated by the Command-Code field set to 308 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Subscribe-Notifications-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Subscribe-Notifications-Answer > ::= < Diameter Header: 308, 167772152 >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
[Result-Code]
[Experimental-Result]
{ Origin-Host }
{ Origin-Realm }
~~*[Data-Reference]~~
*[AVP]
*[Proxy-Info]
*[Route-Record]

3GPP TSG CN WG4 Meeting #23bis
Helsinki, FINLAND, 21st – 23rd JUNE 2004

N4-040782

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **043** ⌘ **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 ☒

Title:	⌘	Incorrect Data-Reference AVP in Subscriber Notification Answer Command
Source:	⌘	Lucent Technologies
Work item code:	⌘	CN4
Date:	⌘	28/05/2004
Category:	⌘	**A**
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:	⌘	Incorrect Data-Reference AVP in Subscriber Notification Answer Command
Summary of change:	⌘	This is an essential correction. The Data-Reference AVP is removed from the Subscriber Notification Answer Command
Consequences if not approved:	⌘	Optional AVP is present but unclear how it is used.

Clauses affected:	⌘	6.1.6

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

Other comments:	⌘	

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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.

6.1.6 Subscribe-Notifications-Answer (SNA) Command

The Subscribe-Notifications-Answer command, indicated by the Command-Code field set to 308 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Subscribe-Notifications-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Subscribe-Notifications-Answer > ::= < Diameter Header: 308, 167772152 >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
[Result-Code]
[Experimental-Result]
{ Origin-Host }
{ Origin-Realm }
~~*[Data-Reference]~~
*[AVP]
*[Proxy-Info]
*[Route-Record]

3GPP TSG CN WG4 Meeting #23bis
Helsinki, FINLAND, 21st – 23rd JUNE 2004

N4-040841

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **040** ⌘ **rev** **1** ⌘ 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 ☒

Title:	⌘	Public-Identity is unspecified for the Sh interface
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	18/06/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The Public-Identity AVP is currently unspecified for the Sh interface
Summary of change:	⌘	This is an essential correction. A reference is provided to 29.229 for this parameter where it is explicitly stated that the canonical form shall be used when the HSS is accessed.
Consequences if not approved:	⌘	Unspecified identity on the Sh interface could lead to interworking problems. SIP URI parameters may be passed causing identity resolution to fail at the HSS leading to loss of service.

Clauses affected:	⌘	6.3, 6.3.xx

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

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

				AVP Flag rules				
Attribute Name	**AVP Code**	**Section defined**	**Value Type**	**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
Server-Name	3	6.3.9	UTF8String	M, V				N
Public-Identity	2	6.3.10	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 Modifed Section

6.3.9 Server-Name AVP

The Server-Name contains a SIP-URL used to identify an AS. See 3GPP TS 29.229 [6] for further description of this AVP.

6.3.xx Public-Identity AVP

The Public-Identity AVP contains a Public User Identity. See 3GPP TS 29.229 [6] for the definition of this AVP.

3GPP TSG CN WG4 Meeting #23bis
Helsinki, FINLAND, 21st – 23rd JUNE 2004

N4-040842

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **041** ⌘**rev** **1** ⌘ 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 ☒

Title:	⌘	Public-Identity is unspecified for the Sh interface
Source:	⌘	CN4
Work item code:	⌘	IMS_CCR
Date:	⌘	18/06/2004
Category:	⌘	**A**
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:	⌘	The Public-Identity AVP is currently unspecified for the Sh interface
Summary of change:	⌘	This is an essential correction. A reference is provided to 29.229 for this parameter where it is explicitly stated that the canonical form shall be used when the HSS is accessed.
Consequences if not approved:	⌘	Unspecified identity on the Sh interface could lead to interworking problems. SIP URI parameters may be passed causing identity resolution to fail at the HSS leading to loss of service.

Clauses affected:	⌘	6.3, 6.3.xx

	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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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.

6.3 AVPs

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				AVP Flag rules				
Attribute Name	**AVP Code**	**Section defined**	**Value Type**	**Must**	**May**	**Should not**	**Must not**	**May Encr.**
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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
Server-Name	3	6.3.9	UTF8String	M, V				N
Public-Identity	2	6.3.10	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 Modifed Section

6.3.9 Server-Name AVP

The Server-Name contains a SIP-URL used to identify an AS. See 3GPP TS 29.229 [6] for further description of this AVP.

6.3.xx Public-Identity AVP

The Public-Identity AVP contains a Public User Identity. See 3GPP TS 29.229 [6] for the definition of this AVP.

3GPP TSG CN WG4 Meeting #23bis **N4-040843**
Helsinki, FINLAND, 21st – 23rd JUNE 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **044** ⌘ **rev** **1** ⌘ 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 ☒

Title:	⌘	Single Public_Identity required in Grouped User-Identity AVP			
Source:	⌘	CN4			
Work item code:	⌘	IMS-CCR	***Date:*** ⌘	18/06/2004	
Category:	⌘	**F**	***Release:*** ⌘	Rel-5	
		Use one of the following categories:		*Use one of the following releases:*	
		F *(correction)*		*2*	*(GSM Phase 2)*
		A *(corresponds to a correction in an earlier release)*		*R96*	*(Release 1996)*
		B *(addition of feature),*		*R97*	*(Release 1997)*
		C *(functional modification of feature)*		*R98*	*(Release 1998)*
		D *(editorial modification)*		*R99*	*(Release 1999)*
		Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Rel-4*	*(Release 4)*
				Rel-5	*(Release 5)*
				Rel-6	*(Release 6)*

Reason for change:	⌘	This is an essential correction. Multiple Public-Identities are not required in the User-Identity AVP. This AVP is currently used in the User Data Request, Profile Update Request, Subscribe Notifications Request and Push Notifications Request commands. There could possibly be a use for this facility, if the Public-Identity was returned for a DataRef=10 in the UDA response. This would then contain all the known Public Identities for a given Public User Identity's Private User Identity (Release 5). This is not the case, as the response to a PUR is a PUA containing an XML file in the User-Data AVP. Consequently there is no value in having an AS list multiple Public User Identities (corresponding to a common Private User Identity) in a request message. There is no need for servicing multiple Public User Identity requests for data in one message, as the timing of the data availability among different users may not make this efficient. Additionally, the User Data is not tailored to indicate the Public User Identity and the corresponding data for multiple users. Similarly this is true for multiple MSISDNs.
Summary of change:	⌘	Either a single Public-Identity or MSISDN can be placed in the User-Identity AVP
Consequences if not approved:	⌘	Being able to provide multiple Public-Identities in the User-Identity AVP does not make sense for commands e.g. PUR, leading to an unworkable specification and non-compliance to 29.328. If not approved, then additional error cases, e.g. data available for one user but the other timed out, harder for subscriptions, are necessary. Also the XML

	description for data containing multiple users would need to be enhanced.

Clauses affected:	⌘	6.3.1			
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.

6.3.1 User-Identity AVP

The User-Identity AVP (AVP Code 100) is of type Grouped. This AVP contains either a ~~user's~~ Public-Identity AVP or an MSISDN AVP.

AVP format

User-Identity ::= <AVP header: 100 10415>

~~*~~[Public-Identity]

~~*~~[MSISDN]

*[AVP]

3GPP TSG CN WG4 Meeting #23bis **N4-040844**
Helsinki, FINLAND, 21st – 23rd JUNE 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **045** ⌘ **rev** **1** ⌘ 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 ☒

Title:	⌘	Single Public_Identity required in Grouped User-Identity AVP
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	18/06/2004
Category:	⌘	**A**
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:	⌘	This is an essential correction. Multiple Public-Identities are not required in the User-Identity AVP. This AVP is currently used in the User Data Request, Profile Update Request, Subscribe Notifications Request and Push Notifications Request commands. There could possibly be a use for this facility, if the Public-Identity was returned for a DataRef=10 in the UDA response. This would then contain all the known Public Identities for a given Public User Identity's Private User Identity (Release 5). This is not the case, as the response to a PUR is a PUA containing an XML file in the User-Data AVP. Consequently there is no value in having an AS list multiple Public User Identities (corresponding to a common Private User Identity) in a request message. There is no need for servicing multiple Public User Identity requests for data in one message, as the timing of the data availability among different users may not make this efficient. Additionally, the User Data is not tailored to indicate the Public User Identity and the corresponding data for multiple users. Similarly this is true for multiple MSISDNs.
Summary of change:	⌘	Either a single Public-Identity or MSISDN can be placed in the User-Identity AVP
Consequences if not approved:	⌘	Being able to provide multiple Public-Identities in the User-Identity AVP does not make sense for commands e.g. PUR, leading to an unworkable specification and non-compliance to 29.328. If not approved, then additional error cases, e.g. data available for one user but the other timed out, harder for subscriptions, are necessary. Also the XML

	description for data containing multiple users would need to be enhanced.

Clauses affected:	⌘	6.3.1			
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.

6.3.1 User-Identity AVP

The User-Identity AVP (AVP Code 100) is of type Grouped. This AVP contains either a ~~user's~~ Public-Identity AVP or an MSISDN AVP.

AVP format

User-Identity ::= <AVP header: 100 10415>

~~*~~[Public-Identity]

~~*~~[MSISDN]

*[AVP]

3GPP TSG CN WG4 Meeting #24 ***N4-041071***
Sophia Antipolis, France, 16-20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.229** **CR** **060** ⌘ **rev** **-** ⌘ Current version: **5.7.0** ⌘

*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:	⌘	Correction of the Application-Id code
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	29/06/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	**Essential Correction.** IANA wronly assigned an Application-Id to Cx interface. Now IANA has assigned a new number, Cx specification has to be modified accordingly.
Summary of change:	⌘	The new Application-Id has replaced the wrong Application-Id
Consequences if not approved:	⌘	Wrongly Application-Id for Cx, not consistent with the IANA assigned number

Clauses affected:	⌘	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:
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 change

6 Diameter application for Cx interface

This clause specifies a Diameter application that allows a Diameter Multimedia server and a Diameter Multimedia client:

- to exchange location information
- to authorize a user to access the IMS
- to exchange authentication information
- to download and handle changes in the user data stored in the server

The Cx interface protocol is defined as an IETF vendor specific Diameter application, where the vendor is 3GPP. The vendor identifier assigned by IANA to 3GPP (http://www.iana.org/assignments/enterprise-numbers) is 10415.

The Diameter application identifier assigned to the Cx/Dx interface application is ~~16777215~~16777216 (allocated by IANA).

6.1 Command-Code values

This section defines Command-Code values for this Diameter application.

Every command is defined by means of the ABNF syntax IETF RFC 2234 [7], according to the rules in IETF RFC 3588 [6]. Whenever the definition and use of an AVP is not specified in this document, what is stated in IETF RFC 3588 [6] shall apply.

The command codes for the Cx/Dx interface application are taken from the range allocated by IANA in IETF RFC 3589 [12] as assigned in this specification. For these commands, the Application-ID field shall be set to ~~16777215~~16777216 (application identifier of the Cx/Dx interface application, allocated by IANA).

The following Command Codes are defined in this specification:

Table 6.1.1: Command-Code values

Command-Name	Abbreviation	Code	Section
User-Authorization-Request	UAR	300	6.1.1
User-Authorization-Answer	UAA	300	6.1.2
Server-Assignment-Request	SAR	301	6.1.3
Server-Assignment-Answer	SAA	301	6.1.4
Location-Info-Request	LIR	302	6.1.5
Location-Info-Answer	LIA	302	6.1.6
Multimedia-Auth-Request	MAR	303	6.1.7
Multimedia-Auth-Answer	MAA	303	6.1.8
Registration-Termination-Request	RTR	304	6.1.9
Registration-Termination-	RTA	304	6.1.10

Answer			
Push-Profile-Request	PPR	305	6.1.11
Push-Profile-Answer	PPA	305	6.1.12

6.1.1 User-Authorization-Request (UAR) Command

The User-Authorization-Request (UAR) command, indicated by the Command-Code field set to 300 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request the authorization of the registration of a multimedia user.

Message Format

< User-Authorization-Request> ::= < Diameter Header: 300, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
{ User-Name }
{ Public-Identity }
{ Visited-Network-Identifier }
[User-Authorization-Type]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.2 User-Authorization-Answer (UAA) Command

The User-Authorization-Answer (UAA) command, indicated by the Command-Code field set to 300 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the User-Authorization-Request command. The Result-Code AVP or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

< User-Authorization-Answer> ::= < Diameter Header: 300, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Server-Name]
[Server-Capabilities]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.3 Server-Assignment-Request (SAR) Command

The Server-Assignment-Request (SAR) command, indicated by the Command-Code field set to 301 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request it to store the name of the server that is currently serving the user.

Message Format

<Server-Assignment-Request> ::= < Diameter Header: 301, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
[User-Name]
***[Public-Identity]**
{ Server-Name }
{ Server-Assignment-Type }
{ User-Data-Request-Type }
{ User-Data-Already-Available }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.4 Server-Assignment-Answer (SAA) Command

The Server-Assignment-Answer (SAA) command, indicated by the Command-Code field set to 301 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the Server-Assignment-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6]. If Result-Code or Experimental-Result does not inform about an error, the User-Data AVP shall contain the information that the S-CSCF needs to give service to the user.

Message Format

<Server-Assignment-Answer> ::= < Diameter Header: 301, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[User-Name]
[User-Data]
[Charging-Information]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.5 Location-Info-Request (LIR) Command

The Location-Info-Request (LIR) command, indicated by the Command-Code field set to 302 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request name of the server that is currently serving the user.

Message Format

<Location-Info-Request> ::= < Diameter Header: 302, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
{ Public-Identity }

*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.6 Location-Info-Answer (LIA) Command

The Location-Info-Answer (LIA) command, indicated by the Command-Code field set to 302 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the Location-Info-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

<Location-Info-Answer> ::= < Diameter Header: 302, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Server-Name]
[Server-Capabilities]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.7 Multimedia-Auth-Request (MAR) Command

The Multimedia-Auth-Request (MAR) command, indicated by the Command-Code field set to 303 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request security information.

Message Format

< Multimedia-Auth-Request > ::= < Diameter Header: 303, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Realm }
[Destination-Host]
{ User-Name }
{ Public-Identity }
[SIP-Auth-Data-Item]
[SIP-Number-Auth-Items]
{ Server-Name }
* [AVP]
* [Proxy-Info]
* [Route-Record]

6.1.8 Multimedia-Auth-Answer (MAA) Command

The Multimedia-Auth-Answer (MAA) command, indicated by the Command-Code field set to 303 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the Multimedia-Auth-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

< Multimedia-Auth-Answer > ::= < Diameter Header: 303, ~~16777215~~16777216 >
< Session-Id >

{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[User-Name]
[Public-Identity]
[SIP-Number-Auth-Items]
***[SIP-Auth-Data-Item]**
* [AVP]
* [Proxy-Info]
* [Route-Record]

6.1.9 Registration-Termination-Request (RTR) Command

The Registration-Termination-Request (RTR) command, indicated by the Command-Code field set to 304 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia server to a Diameter Multimedia client in order to request the de-registration of a user.

Message Format

<Registration-Termination-Request> ::= < Diameter Header: 304, ~~167772151~~16777216, REQ >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Name }
***[Public-Identity]**
{ DeRegistration-Reason }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.10 Registration-Termination-Answer (RTA) Command

The Registration-Termination-Answer (RTA) command, indicated by the Command-Code field set to 304 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Registration-Termination-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

<Registration-Termination-Answer> ::= < Diameter Header: 304, ~~167772151~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.11 Push-Profile-Request (PPR) Command

The Push-Profile-Request (PPR) command, indicated by the Command-Code field set to 305 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia server to a Diameter Multimedia client in order to update the

subscription data of a multimedia user in the Diameter Multimedia client whenever a modification has occurred in the subscription data that constitutes the data used by the client.

Message Format

< Push-Profile-Request > ::= < Diameter Header: 305, ~~16777215~~16777216, REQ >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Name }
[User-Data]
[Charging-Information]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.12 Push-Profile-Answer (PPA) Command

The Push-Profile-Answer (PPA) command, indicated by the Command-Code field set to 305 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Push-Profile-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

< Push-Profile-Answer > ::=< Diameter Header: 305, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

Second change

6.4.4 Application-ID value

IANA has allocated the value 16777216~~167772151~~ for the 3GPP Cx interface application.

3GPP TSG CN WG4 Meeting #24 ***N4-041072***
Sophia Antipolis, France, 16-20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.229** **CR** **061** ⌘ **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 ☒

Title:	⌘	Correction of the Application-Id code
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	06/08/2004
Category:	⌘	**A**
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:	⌘	IANA wronly assigned an Application-Id to Cx interface. Now IANA has assigned a new number, Cx specification has to be modified accordingly.
Summary of change:	⌘	The new Application-Id has replaced the wrong Applciation-Id
Consequences if not approved:	⌘	Wronly Application-Id for Cx, not consistent with the IANA assigned number

Clauses affected:	⌘	6			
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 change

6 Diameter application for Cx interface

This clause specifies a Diameter application that allows a Diameter Multimedia server and a Diameter Multimedia client:

- to exchange location information
- to authorize a user to access the IMS
- to exchange authentication information
- to download and handle changes in the user data stored in the server

The Cx interface protocol is defined as an IETF vendor specific Diameter application, where the vendor is 3GPP. The vendor identifier assigned by IANA to 3GPP (http://www.iana.org/assignments/enterprise-numbers) is 10415.

The Diameter application identifier assigned to the Cx/Dx interface application is ~~16777215~~16777216 (allocated by IANA).

6.1 Command-Code values

This section defines Command-Code values for this Diameter application.

Every command is defined by means of the ABNF syntax IETF RFC 2234 [7], according to the rules in IETF RFC 3588 [6]. Whenever the definition and use of an AVP is not specified in this document, what is stated in IETF RFC 3588 [6] shall apply.

The command codes for the Cx/Dx interface application are taken from the range allocated by IANA in IETF RFC 3589 [12] as assigned in this specification. For these commands, the Application-ID field shall be set to ~~16777215~~16777216 (application identifier of the Cx/Dx interface application, allocated by IANA).

The following Command Codes are defined in this specification:

Table 6.1.1: Command-Code values

Command-Name	Abbreviation	Code	Section
User-Authorization-Request	UAR	300	6.1.1
User-Authorization-Answer	UAA	300	6.1.2
Server-Assignment-Request	SAR	301	6.1.3
Server-Assignment-Answer	SAA	301	6.1.4
Location-Info-Request	LIR	302	6.1.5
Location-Info-Answer	LIA	302	6.1.6
Multimedia-Auth-Request	MAR	303	6.1.7
Multimedia-Auth-Answer	MAA	303	6.1.8
Registration-Termination-Request	RTR	304	6.1.9
Registration-Termination-	RTA	304	6.1.10

Answer			
Push-Profile-Request	PPR	305	6.1.11
Push-Profile-Answer	PPA	305	6.1.12

6.1.1 User-Authorization-Request (UAR) Command

The User-Authorization-Request (UAR) command, indicated by the Command-Code field set to 300 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request the authorization of the registration of a multimedia user.

Message Format

< User-Authorization-Request> ::= < Diameter Header: 300, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
{ User-Name }
{ Public-Identity }
{ Visited-Network-Identifier }
[User-Authorization-Type]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.2 User-Authorization-Answer (UAA) Command

The User-Authorization-Answer (UAA) command, indicated by the Command-Code field set to 300 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the User-Authorization-Request command. The Result-Code AVP or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

< User-Authorization-Answer> ::= < Diameter Header: 300, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Server-Name]
[Server-Capabilities]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.3 Server-Assignment-Request (SAR) Command

The Server-Assignment-Request (SAR) command, indicated by the Command-Code field set to 301 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request it to store the name of the server that is currently serving the user.

Message Format

<Server-Assignment-Request> ::= < Diameter Header: 301, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
[User-Name]
***[Public-Identity]**
{ Server-Name }
{ Server-Assignment-Type }
{ User-Data-Request-Type }
{ User-Data-Already-Available }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.4 Server-Assignment-Answer (SAA) Command

The Server-Assignment-Answer (SAA) command, indicated by the Command-Code field set to 301 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the Server-Assignment-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6]. If Result-Code or Experimental-Result does not inform about an error, the User-Data AVP shall contain the information that the S-CSCF needs to give service to the user.

Message Format

<Server-Assignment-Answer> ::= < Diameter Header: 301, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[User-Name]
[User-Data]
[Charging-Information]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.5 Location-Info-Request (LIR) Command

The Location-Info-Request (LIR) command, indicated by the Command-Code field set to 302 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request name of the server that is currently serving the user.

Message Format

<Location-Info-Request> ::= < Diameter Header: 302, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
{ Public-Identity }

*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.6 Location-Info-Answer (LIA) Command

The Location-Info-Answer (LIA) command, indicated by the Command-Code field set to 302 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the Location-Info-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

<Location-Info-Answer> ::= < Diameter Header: 302, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Server-Name]
[Server-Capabilities]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.7 Multimedia-Auth-Request (MAR) Command

The Multimedia-Auth-Request (MAR) command, indicated by the Command-Code field set to 303 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia client to a Diameter Multimedia server in order to request security information.

Message Format

< Multimedia-Auth-Request > ::= < Diameter Header: 303, ~~16777215~~16777216, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Realm }
[Destination-Host]
{ User-Name }
{ Public-Identity }
[SIP-Auth-Data-Item]
[SIP-Number-Auth-Items]
{ Server-Name }
* [AVP]
* [Proxy-Info]
* [Route-Record]

6.1.8 Multimedia-Auth-Answer (MAA) Command

The Multimedia-Auth-Answer (MAA) command, indicated by the Command-Code field set to 303 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the Multimedia-Auth-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

< Multimedia-Auth-Answer > ::= < Diameter Header: 303, ~~16777215~~16777216 >
< Session-Id >

{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[User-Name]
[Public-Identity]
[SIP-Number-Auth-Items]
***[SIP-Auth-Data-Item]**
* [AVP]
* [Proxy-Info]
* [Route-Record]

6.1.9 Registration-Termination-Request (RTR) Command

The Registration-Termination-Request (RTR) command, indicated by the Command-Code field set to 304 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia server to a Diameter Multimedia client in order to request the de-registration of a user.

Message Format

<Registration-Termination-Request> ::= < Diameter Header: 304, ~~167772151~~16777216, REQ >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Name }
***[Public-Identity]**
{ DeRegistration-Reason }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.10 Registration-Termination-Answer (RTA) Command

The Registration-Termination-Answer (RTA) command, indicated by the Command-Code field set to 304 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Registration-Termination-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

<Registration-Termination-Answer> ::= < Diameter Header: 304, ~~167772151~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.11 Push-Profile-Request (PPR) Command

The Push-Profile-Request (PPR) command, indicated by the Command-Code field set to 305 and the 'R' bit set in the Command Flags field, is sent by a Diameter Multimedia server to a Diameter Multimedia client in order to update the

subscription data of a multimedia user in the Diameter Multimedia client whenever a modification has occurred in the subscription data that constitutes the data used by the client.

Message Format

< Push-Profile-Request > ::= < Diameter Header: 305, ~~16777215~~16777216, REQ >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Name }
[User-Data]
[Charging-Information]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.12 Push-Profile-Answer (PPA) Command

The Push-Profile-Answer (PPA) command, indicated by the Command-Code field set to 305 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Push-Profile-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in IETF RFC 3588 [6].

Message Format

< Push-Profile-Answer > ::=< Diameter Header: 305, ~~16777215~~16777216 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

Second change

6.4.4 Application-ID value

IANA has allocated the value 16777216~~167772151~~ for the 3GPP Cx interface application.

3GPP TSG CN WG4 Meeting #24 ***N4-041073***
Sophia Antipolis, France, 16-20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **048** ⌘ **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 ☒

Title:	⌘	Correction of the Application-Id code
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	29/06/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	**Essential Correction.** IANA wronly assigned an Application-Id to Sh interface. Now IANA has assigned a new number, Sh specification has to be modified accordingly.
Summary of change:	⌘	The new Application-Id has replaced the wrong Application-Id
Consequences if not approved:	⌘	Wrongly Application-Id for Sh, not consistent with the IANA assigned number

Clauses affected:	⌘	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:
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 change

6 Diameter application for Sh interface

This clause specifies a Diameter application that allows a Diameter server and a Diameter client:

- to download and update transparent and non-transparent user data
- to request and send notifications on changes on user data

The Sh interface protocol is defined as an IETF vendor specific Diameter application, where the vendor is 3GPP. The vendor identifier assigned by IANA to 3GPP (http://www.iana.org/assignments/enterprise-numbers) is 10415.

The Diameter application identifier assigned to the Sh interface application is ~~16777215~~16777217 (allocated by IANA).

6.1 Command-Code values

This section defines Command-Code values for this Diameter application.

Every command is defined by means of the ABNF syntax (as defined in RFC 2234 [5]), according to the rules in IETF RFC 3588 [4]. Whenever the definition and use of an AVP is not specified in this document, what is stated in IETF RFC 3588 [4] or 3GPP TS 29.229 [6] shall apply.

The command codes for the Sh interface application are taken from the range allocated by IANA in IETF RFC 3589 [7] as assigned in this specification. For these commands, the Application-ID field shall be set to ~~16777215~~16777217 (application identifier of the Sh interface application, allocated by IANA).

The following Command Codes are defined in this specification:

Table 6.1.1: Command-Code values

Command-Name	Abbreviation	Code	Section
User-Data-Request	UDR	306	6.1.1
User-Data-Answer	UDA	306	6.1.2
Profile-Update-Request	PUR	307	6.1.3
Profile-Update-Answer	PUA	307	6.1.4
Subscribe-Notifications-Request	SNR	308	6.1.5
Subscribe-Notifications-Answer	SNA	308	6.1.6
Push-Notification-Request	PNR	309	6.1.7
Push-Notification-Answer	PNA	309	6.1.8

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, ~~16777215~~16777217, 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]

6.1.2 User-Data-Answer (UDA) Command

The User-Data-Answer (UDA) command, indicated by the Command-Code field set to 306 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the User-Data-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< User-Data-Answer > ::= < Diameter Header: 306: ~~16777215~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[User-Data]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.3 Profile-Update-Request (PUR) Command

The Profile-Update-Request (PUR) command, indicated by the Command-Code field set to 307 and the 'R' bit set in the Command Flags field, is sent by a Diameter client to a Diameter server in order to update user data in the server.

Message Format

< Profile-Update-Request > ::= < Diameter Header: 307, ~~16777215~~16777217, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Identity }
{ User-Data }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.4 Profile-Update-Answer (PUA) Command

The Profile-Update-Answer (PUA) command, indicated by the Command-Code field set to 307 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Profile-Update-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Profile-Update-Answer > ::=< Diameter Header: 307, ~~167772152~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.5 Subscribe-Notifications-Request (SNR) Command

The Subscribe-Notifications-Request (SNR) command, indicated by the Command-Code field set to 308 and the 'R' bit set in the Command Flags field, is sent by a Diameter client to a Diameter server in order to request notifications of changes in user data.

Message Format

< Subscribe-Notifications-Request > ::= < Diameter Header: 308, ~~167772152~~16777217, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
{ User-Identity }
[Service-Indication]
[Server-Name]
{ Subs-Req-Type }
{ Data-Reference }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.6 Subscribe-Notifications-Answer (SNA) Command

The Subscribe-Notifications-Answer command, indicated by the Command-Code field set to 308 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Subscribe-Notifications-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Subscribe-Notifications-Answer > ::= < Diameter Header: 308, ~~167772152~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
[Result-Code]
[Experimental-Result]
{ Origin-Host }
{ Origin-Realm }

***[Data-Reference]**
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.7 Push-Notification-Request (PNR) Command

The Push-Notification-Request (PNR) command, indicated by the Command-Code field set to 309 and the 'R' bit set in the Command Flags field, is sent by a Diameter server to a Diameter client in order to notify changes in the user data in the server.

Message Format

< Push-Notification-Request > ::= < Diameter Header: 309, ~~16777215~~16777217, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Identity }
{ User-Data }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.8 Push-Notifications-Answer (PNA) Command

The Push-Notifications-Answer (PNA) command, indicated by the Command-Code field set to 309 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Push-Notification-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Push-Notification-Answer > ::=< Diameter Header: 309, ~~16777215~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

Second change

6.4.4 Application-ID value

IANA has allocated the value 16777217~~16777215~~ for the 3GPP Sh interface application.

3GPP TSG CN WG4 Meeting #24 ***N4-041074***
Sophia Antipolis, France, 16-20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **29.329** **CR** **049** ⌘ **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 ☒

Title:	⌘	Correction of the Application-Id code
Source:	⌘	CN4
Work item code:	⌘	IMS-CCR
Date:	⌘	06/08/2004
Category:	⌘	**A**
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:	⌘	IANA wronly assigned an Application-Id to Sh interface. Now IANA has assigned a new number, Sh specification has to be modified accordingly.
Summary of change:	⌘	The new Application-Id has replaced the wrong Application-Id
Consequences if not approved:	⌘	Wrongly Application-Id for Sh, not consistent with the IANA assigned number

Clauses affected:	⌘	6			
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 change

6 Diameter application for Sh interface

This clause specifies a Diameter application that allows a Diameter server and a Diameter client:

- to download and update transparent and non-transparent user data
- to request and send notifications on changes on user data

The Sh interface protocol is defined as an IETF vendor specific Diameter application, where the vendor is 3GPP. The vendor identifier assigned by IANA to 3GPP (http://www.iana.org/assignments/enterprise-numbers) is 10415.

The Diameter application identifier assigned to the Sh interface application is ~~16777215~~16777217 (allocated by IANA).

6.1 Command-Code values

This section defines Command-Code values for this Diameter application.

Every command is defined by means of the ABNF syntax (as defined in RFC 2234 [5]), according to the rules in IETF RFC 3588 [4]. Whenever the definition and use of an AVP is not specified in this document, what is stated in IETF RFC 3588 [4] or 3GPP TS 29.229 [6] shall apply.

The command codes for the Sh interface application are taken from the range allocated by IANA in IETF RFC 3589 [7] as assigned in this specification. For these commands, the Application-ID field shall be set to ~~16777215~~16777217 (application identifier of the Sh interface application, allocated by IANA).

The following Command Codes are defined in this specification:

Table 6.1.1: Command-Code values

Command-Name	Abbreviation	Code	Section
User-Data-Request	UDR	306	6.1.1
User-Data-Answer	UDA	306	6.1.2
Profile-Update-Request	PUR	307	6.1.3
Profile-Update-Answer	PUA	307	6.1.4
Subscribe-Notifications-Request	SNR	308	6.1.5
Subscribe-Notifications-Answer	SNA	308	6.1.6
Push-Notification-Request	PNR	309	6.1.7
Push-Notification-Answer	PNA	309	6.1.8

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, ~~16777215~~16777217, 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]

6.1.2 User-Data-Answer (UDA) Command

The User-Data-Answer (UDA) command, indicated by the Command-Code field set to 306 and the 'R' bit cleared in the Command Flags field, is sent by a server in response to the User-Data-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< User-Data-Answer > ::= < Diameter Header: 306: ~~16777215~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[User-Data]
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.3 Profile-Update-Request (PUR) Command

The Profile-Update-Request (PUR) command, indicated by the Command-Code field set to 307 and the 'R' bit set in the Command Flags field, is sent by a Diameter client to a Diameter server in order to update user data in the server.

Message Format

< Profile-Update-Request > ::= < Diameter Header: 307, ~~16777215~~16777217, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Identity }
{ User-Data }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.4 Profile-Update-Answer (PUA) Command

The Profile-Update-Answer (PUA) command, indicated by the Command-Code field set to 307 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Profile-Update-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Profile-Update-Answer > ::=< Diameter Header: 307, ~~167772152~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.5 Subscribe-Notifications-Request (SNR) Command

The Subscribe-Notifications-Request (SNR) command, indicated by the Command-Code field set to 308 and the 'R' bit set in the Command Flags field, is sent by a Diameter client to a Diameter server in order to request notifications of changes in user data.

Message Format

< Subscribe-Notifications-Request > ::= < Diameter Header: 308, ~~167772152~~16777217, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
[Destination-Host]
{ Destination-Realm }
{ User-Identity }
[Service-Indication]
[Server-Name]
{ Subs-Req-Type }
{ Data-Reference }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.6 Subscribe-Notifications-Answer (SNA) Command

The Subscribe-Notifications-Answer command, indicated by the Command-Code field set to 308 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Subscribe-Notifications-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Subscribe-Notifications-Answer > ::= < Diameter Header: 308, ~~167772152~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
[Result-Code]
[Experimental-Result]
{ Origin-Host }
{ Origin-Realm }

***[Data-Reference]**
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.7 Push-Notification-Request (PNR) Command

The Push-Notification-Request (PNR) command, indicated by the Command-Code field set to 309 and the 'R' bit set in the Command Flags field, is sent by a Diameter server to a Diameter client in order to notify changes in the user data in the server.

Message Format

< Push-Notification-Request > ::= < Diameter Header: 309, ~~16777215~~16777217, REQ, PXY >
< Session-Id >
{ Vendor-Specific-Application-Id }
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
{ Destination-Host }
{ Destination-Realm }
{ User-Identity }
{ User-Data }
*[AVP]
*[Proxy-Info]
*[Route-Record]

6.1.8 Push-Notifications-Answer (PNA) Command

The Push-Notifications-Answer (PNA) command, indicated by the Command-Code field set to 309 and the 'R' bit cleared in the Command Flags field, is sent by a client in response to the Push-Notification-Request command. The Result-Code or Experimental-Result AVP may contain one of the values defined in section 6.2 in addition to the values defined in 3GPP TS 29.229 [6].

Message Format

< Push-Notification-Answer > ::=< Diameter Header: 309, ~~16777215~~16777217 >
< Session-Id >
{ Vendor-Specific-Application-Id }
[Result-Code]
[Experimental-Result]
{ Auth-Session-State }
{ Origin-Host }
{ Origin-Realm }
*[AVP]
*[Proxy-Info]
*[Route-Record]

Second change

6.4.4 Application-ID value

IANA has allocated the value 16777217~~16777217~~ for the 3GPP Sh interface application.