3GPP TSG CT Meeting #28 **CP-0500039**
1st – 3rd June 2005. Quebec, CANADA.

Source: **CT3**

Title: **CRs to Rel-6 on Work Item "QoS1" (Gq interface)**

Agenda item: **9.20**

Document for: **APPROVAL**

Introduction:

This document contains 5 CRs to Rel-6 on Work Item "QoS1" that have been agreed by TSG CT WG3, and are forwarded to TSG CT Plenary for approval.

WG_tdoc	Spec	CR	R	Cat	Title	Rel	C_Ver	Work Item
C3-050367	29.208	098	2	F	Various Corrections	Rel-6	6.2.0	QoS1
C3-050402	29.209	014	3	F	Various Corrections	Rel-6	6.2.0	QoS1
C3-050291	29.209	015		F	Correction to missing AVP code values	Rel-6	6.2.0	QoS1
C3-050312	29.209	016		F	Correction of references	Rel-6	6.2.0	QoS1
C3-050357	29.207	151		F	Corrections to Flow identifiers for Forking	Rel-6	6.3.0	QoS1

3GPP TSG-CT WG3 Meeting #36
Cancun, Mexico. 25th - 29th April 2005.

Tdoc ⌘C3-050291

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.209** **CR** **015** ⌘**rev** **-** ⌘ Current version: **6.2.0** ⌘

*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 to missing AVP code values
Source:	⌘	Nortel Networks
Work item code:	⌘	QoS1
Date:	⌘	29/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Some AVP code values has not been assigned correctly
Summary of change:	⌘	Completion of the missing AVP values
Consequences if not approved:	⌘	Missing AVP code values

Clauses affected:	⌘	6.5.3, 6.5.9, 6.5.18, 6.5.20			
		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.

********** FISRT MODIFIED SECTION **********

6.5.3 Access-Network-Charging-Identifier AVP

The Access-Network-Charging-Identifier AVP (AVP code 502) is of type Grouped, and contains a charging identifier (e.g. GCID) within the Access-Network-Charging-Identifier-Value AVP along with information about the flows transported within the corresponding bearer within the Flows AVP. If no Flows AVP is provided, the Access-Network-Charging-Identifier-Value applies for all flows within the AF session.

The Access-Network-Charging-Identifier AVP can be sent from the PDF to the AF. The AF may use this information for charging correlation with session layer.

AVP Format:

```
Access-Network-Charging-Identifier ::= < AVP Header: 502x >
                    { Access-Network-Charging-Identifier-Value}
                    *[ Flows ]
```

********** END OF MODIFIED SECTION **********

********** NEXT MODIFIED SECTION **********

6.5.9 Flow-Grouping AVP

The Flow-Grouping AVP (AVP code 508) is of type Grouped, and it indicates that no other IP Flows shall be transported together with the listed IP Flows in the same PDP context(s).

If Flow-Grouping AVP(s) have been provided in earlier service information, but are not provided in subsequent service information, the old flow grouping remains valid.

If Flow-Grouping AVP(s) have been provided in earlier service information, and new Flow-Grouping AVP(s) are provided, the new flow grouping information replaces the previous information. Previous flow grouping information is invalidated even if the new Flow-Grouping AVP(s) affect other IP flows.

A Flow-Grouping AVP containing no Flows AVP may be used to invalidate flow grouping information provided in earlier service information. A Flow-Grouping AVP containing no Flows AVP shall not be supplied together with other Flow-Grouping AVP(s).

If earlier service information has already been provided, flow grouping information in subsequent service information shall not restrict the flow grouping further for IP flows already described in the previous service information. However, new IP flows described for the first time in the subsequent service information may be added to existing flow groups or in new flow groups.

AVP Format:

```
    Flow-Grouping ::= < AVP Header: 508x >
            *[Flows]
```

********** END OF MODIFIED SECTION **********

********** NEXT MODIFIED SECTION **********

6.5.18 Media-Component-Description AVP

The Media-Component-Description AVP (AVP code 517) is of type Grouped, and it contains service information for a single media component within an AF session. It may be based on the SDI exchanged between the AF and the AF client in the UE. The information may be used by the server to determine authorized QoS and IP flow classifiers for bearer authorization and charging rule selection.

Within one Diameter message, a single IP flow shall not be described by more than one Media-Component-Description AVP.

Bandwidth information and Flow-Status information provided within the Media-Component-Description AVP applies to all those IP flows within the media component, for which no corresponding information is being provided within Media-Sub-Component AVP(s).

If a Media-Component-Description AVP is not supplied, or if optional AVP(s) within a Media-Component-Description AVP are omitted, but corresponding information has been provided in previous Diameter messages, the previous information for the corresponding IP flow(s) remains valid.

All IP flows within a Media-Component-Description AVP are permanently disabled by supplying a Flow Status AVP with value "REMOVED". The server may delete corresponding filters and state information.

AVP format:

```
Media-Component-Description ::= < AVP Header: 517? >
                                { Media-Component-Number } ; Ordinal number of the media comp.
                               *[ Media-Sub-Component ]        ; Set of flows for one flow identifier
                                [ AF-Application-Identifier ]
                                [ Media-Type ]

                                [ Max-Requested-Bandwidth-UL ]
                                [ Max-Requested-Bandwidth-DL ]
                                [ Flow-Status ]
                                [ RS-Bandwidth ]
                                [ RR-Bandwidth ]
```

********** END OF MODIFIED SECTION **********

********** NEXT MODIFIED SECTION **********

6.5.20 Media-Sub-Component AVP

The Media-Sub-Component AVP (AVP code 519) is of type Grouped, and it contains the requested QoS and filters for the set of IP flows identified by their common Flow-Identifier. The Flow-Identifier is defined in 3GPP TS 29.207 [4].

Possible Bandwidth information and Flow-Status information provided within the Media-Sub-Component AVP takes precedence over information within the encapsulating Media Component Description AVP. If a Media-Sub-Component- AVP is not supplied, or if optional AVP(s) within a Media-Sub-Component AVP are omitted, but corresponding information has been provided in previous Diameter messages, the previous information for the corresponding IP flow(s) remains valid, unless new information is provided within the encapsulating Media-Component-Description AVP. If Flow-Description AVP(s) are supplied, they replace all previous Flow-Description AVP(s), even if a new Flow-Description AVP has the opposite direction as the previous Flow-Description AVP.

All IP flows within a Media-Sub-Component- AVP are permanently disabled by supplying a Flow Status AVP with value "REMOVED". The server may delete corresponding filters and state information.

AVP format:

```
Media-Sub-Component ::= < AVP Header: 519 ?>
                        { Flow-Number }      ; Ordinal number of the IP flow
```

```
 0*2[ Flow-Description ]        ; UL and/or DL
    [ Flow-Status ]
    [ Flow-Usage ]
    [ Max-Requested-Bandwidth-UL ]
    [ Max-Requested-Bandwidth-DL ]
```

********** **END OF MODIFIED SECTION** **********

3GPP TSG-CT WG3 Meeting #36 ***Tdoc ⌘ C3-050367***

Cancun, Mexico. 25th - 29th April 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.208** **CR** **098** ⌘ **rev** **2** ⌘ Current version: **6.2.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Various Corrections
Source:	⌘	Siemens
Work item code:	⌘	QoS1
Date:	⌘	18/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	1. According to TS 29.209, Clause 5.3.1, source IP addreses may be derived from 64k destination adress prefix, but Table 7.1.0.1 recommends wildcarding. 2. Unclear if AF or Go session is referenced in Table 7.1.1.1 for Maximum Authorized QoS Class derivation. 3. In Table 7.2.1, “bandwidth” is assigned as value, but the contents of the SDP “b=” modifier are referred to as “bandwidth-value”.
Summary of change:	⌘	1. Mapping of Source IP Address in Table 7.1.0.1 is corrected by reference to TS 29.209. 2. AF session is referenced. This is in line with the Rel-5 algorithm. 3. In Table 7.2.1, “bandwidth-value” is assigned as value
Consequences if not approved:	⌘	1. Contradiction between TS 29.208 and 29.209 for source address handling 2. Unpredictable Max QoS Class derivation results not in line with UE behavior. A correct QoS class requested by UE may not be authorised. 3. Unpredictable bandwidth derivation results at UE.

Clauses affected:	⌘	7.1.1, 7.2.1

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

Other comments:	⌘	

7.1.0 SDP parameters to service information mapping in AF

The mapping described in this clause is mandatory for the P-CSCF and should also be applied by other AFs if the SDI is SDP.

When a session is initiated or modified the P-CSCF shall use the mapping rules in table 7.1.0.1 for each SDP media component to derive a Media-Component-Description AVP from the SDP Parameters. Furthermore, the P-CSCF shall map information about the grouping of media lines into resource reservation flows into the Flow-Grouping AVP as specified in table 7.1.0.3.

Table 7.1.0.1: Rules for derivation of service information within Media-Component-Description AVP from SDP media component

service information per Media-Component-Description AVP (NOTE 1; Note 7)	Derivation from SDP Parameters (see NOTE 2)
Media-Component-Number	ordinal number of the position of the "m=" line in the SDP
AF-Application-Identifier	The AF-Application-Identifier AVP may be supplied or omitted, depending on the application. For IMS, if the AF-Application-Identifier AVP is supplied, its value should not demand application specific bandwidth or QoS class handling. However, if an IMS application is capable of handling a QoS downgrading, the AF-Application-Identifier AVP may be used to demand application specific bandwidth or QoS class handling.
Media-Type	The Media Type AVP shall be included with the same value as supplied for the media type in the "m=" line.

Flow-Status	IF port in m-line = 0 THEN
	Flow-Status:= REMOVED;
	ELSE
	IF a=recvonly THEN
	IF <SDP direction> = mobile originated THEN
	Flow-Status := ENABLED_DOWNLINK; (NOTE 4)
	ELSE /* mobile terminated */
	Flow-Status := ENABLED_UPLINK; (NOTE 4)
	ENDIF;
	ELSE
	IF a=sendonly THEN
	IF <SDP direction> = mobile originated THEN
	Flow-Status := ENABLED_UPLINK; (NOTE 4)
	ELSE /* mobile terminated */
	Flow-Status := ENABLED_DOWNLINK; (NOTE 4)
	ENDIF;
	ELSE
	IF a=inactive THEN
	Flow-Status :=DISABLED;
	ELSE /* a=sendrecv or no direction attribute */
	Flow-Status := ENABLED (NOTE 4)
	ENDIF;
	ENDIF;
	ENDIF;
	ENDIF;
	(NOTE 5)

Max-Requested-Bandwidth-UL	IF <SDP direction> = mobile terminated THEN
	IF b=AS:<bandwidth> is present THEN
	Max-Requested-Bandwidth-UL:= <bandwidth> * 1000; /* Unit is bit/s
	ELSE
	Max-Requested-Bandwidth-UL:= <Operator specific setting>,
	or AVP not supplied;
	ENDIF;
	ELSE
	Consider SDP in opposite direction
	ENDIF

Max-Requested-Bandwidth-DL	IF <SDP direction> = mobile originated THEN
	IF b=AS:<bandwidth> is present THEN
	Max-Requested-Bandwidth-DL:= <bandwidth> * 1000; /* Unit is bit/s
	ELSE
	Max-Requested-Bandwidth-DL:= <Operator specific setting>,
	or AVP not supplied;
	ENDIF;
	ELSE
	Consider SDP in opposite direction
	ENDIF

RR-Bandwidth	IF b=RR:<bandwidth> is present THEN
	RR-Bandwidth:= <bandwidth>;
	ELSE
	AVP not supplied
	ENDIF;
	(NOTE 3; NOTE 6)

RS-Bandwidth	IF b=RS:<bandwidth> is present THEN
	RS-Bandwidth:= <bandwidth>;
	ELSE
	AVP not supplied
	ENDIF;
	(NOTE 3: NOTE 6)

Media-Sub-Component	Supply one AVP for each Flow Identifier within the media component. The

	Flow identifiers are derived according to Annex D of 3GPP TS 29.207 [7]. The encoding of the AVP is described in Table 7.1.0.2

NOTE 1: The encoding of the service information is defined in TS 29.209 [12].
NOTE 2: The SDP parameters are described in RFC 2327 [9].
NOTE 3: The 'b=RS:' and 'b=RR:' SDP bandwidth modifiers are defined in RFC 3556 [10].
NOTE 4: As an operator policy to disable forward and/or backward early media, the Flow-Status may be downgraded before a SIP dialogue is established, i.e. until a 200 OK(INVITE) is received. The Value "DISABLED" may be used instead of the Values "ENABLED_UPLINK" or "ENABLED_DOWNLINK". The Values "DISABLED", "ENABLED_UPLINK" or "ENABLED_DOWNLINK" may be used instead of the Value "ENABLED".
NOTE 5: The direction attributes and port number from the SDP answer shall be used to derive the flow status. However, to enable interoperability with SIP clients that do not understand the inactive SDP attribute, if a=inactive was supplied in the SDP offer, this shall be used to derive the flow status.
NOTE 6: Information from the SDP answer is applicable
NOTE 7: The AVPs may be omitted if they have been supplied in previous service information and have not changed, as detailed in TS 29.209 [12].

Table 7.1.0.2: Rules for derivation of Media-Sub-Component AVP from SDP media component

Gq service information per Media-Sub-Component AVP (NOTE 1, NOTE 5)	Derivation from SDP Parameters (see NOTE 2)
Flow-Number	derived according to Annex C of 3GPP TS 29.207 [7]
Flow-Status	AVP not supplied
Max-Requested-Bandwidth-UL	AVP not supplied
Max-Requested-Bandwidth-DL	AVP not supplied

Flow-Description	For uplink and dowlink direction, a Flow-Description AVP shall be provided unless no IP Flows in this direction are described within the media component.
	The SDP direction attribute (NOTE 4) indicates the direction of the media IP flows within the media component as follows:
	IF a=recvonly THEN (NOTE 3)
	IF <SDP direction> = mobile originated THEN
	Provide only downlink Flow-Description AVP
	ELSE /* mobile terminated */
	Provide only uplink Flow-Description AVP
	ENDIF;
	ELSE
	IF a=sendonly THEN (NOTE 3)
	IF <SDP direction> = mobile originated THEN
	Provide only uplink Flow-Description AVP
	ELSE /* mobile terminated */
	Provide only downlink Flow-Description AVP
	ENDIF;
	ELSE /* a=sendrecv or a=inactive or no direction attribute */
	Provide uplink and downlink Flow-Description AVPs
	ENDIF;
	ENDIF;
	For RTCP IP flows uplink and downlink Flow-Description AVPs shall be provided irrespective of the SDP direction attribute.
	
	The uplink destination address shall be copied from the "c=" line of downlink SDP.
	The uplink destination port shall be derived from the "m=" line of downlink SDP.
	The downlink destination address shall be copied from the "c=" line of uplink SDP.
	The downlink destination port shall be derived from the "m=" line of uplink SDP.
	Uplink and downlink source adresses shall either be derived from the prefix of the destination address or ~~should~~ be wildcarded by setting to "any"~~.~~, as specified in TS 29.209 [12]. ~~and source~~ Source ports ~~should~~ shall not be supplied.
	Proto shall be derived from the transport of the "m=" line. For "RTP/AVP" proto is 17(UDP).

Flow-Usage	The Flow-Usage AVP shall be supplied with value "RTCP" if the IP flow(s) described in the Media-Sub-Component AVP are used to transport RTCP. Otherwise the Flow-Usage AVP shall not be supplied. RFC 2327 [9] specifies how RTCP flows are described within SDP.

NOTE 1: The encoding of the service information is defined in TS 29.209 [12].
NOTE 2: The SDP parameters are described in RFC 2327 [9].
NOTE 3: If the SDP direction attribute for the media component negotiated in a previous offer-answer exchange was sendrecv, or if no direction attribute was provided, and the new SDP direction attribute sendonly or recvonly is negotiated in a subsequent SDP offer-answer exchange, uplink and downlink Flow-Description AVPs shall be supplied.
NOTE 4: The direction attributes from the SDP answer shall be used to derive the flow description. However, to enable interoperability with SIP clients that do not understand the inactive SDP attribute, if a=inactive was supplied in the SDP offer, this shall be used.
NOTE 5: The AVPs may be omitted if they have been supplied in previous service information and have not changed, as detailed in TS 29.209 [12].

Table 7.1.0.3: Rules for mapping SDP information about the grouping of media lines into resource reservation flows into the Flow Grouping AVP

Flow-Grouping AVP (NOTE1)	Derivation from SDP Parameters (see NOTE 2)

Flow Grouping	For each SDP "a=group:SRF" SDP line, a Flow Grouping AVP shall be generated. (NOTE 3)
Flows	For each identification tag within "a=group:SRF" SDP line, a Flows AVP containing a Media-Component-Number AVP identifying the corresponding m-line shall be generated. (NOTE 3) No Flow-Number AVP shall be supplied within the Flows AVP.
NOTE 1: The encoding of the service information is defined in TS 29.209 [12]. NOTE 2: The SDP parameters are described in RFC 2327 [9]. NOTE 3: The SDP "group" attribute is defined in RFC 3388 [13]. The "SRF" semantics attribute within this grouping framework is defined in RFC 3524 [14].	

7.1.1 Gq service information to Authorized IP QoS parameters mapping in PDF

The QoS authorization is to be based on the parameters Maximum Authorized QoS Class and Maximum Authorized Data Rate UL/DL.

When a session is initiated or modified the PDF shall use the mapping rules in table 7.1.1.1 to derive the Authorized IP QoS parameters Maximum Authorized Data Rate DL/UL and the Maximum Authorized QoS Class from the service information. In the case of forking, the various forked responses may have different QoS requirements for the IP flows of the same media component. Each Authorized IP QoS Parameter shall be set to the highest value requested for the IP flow(s) of that media component by any of the active forked responses. These values are derived by the rules in table 7.1.1.1

Table 7.1.1.1: Rules for derivation of the Maximum Authorized Data Rates and Maximum Authorized QoS Class per flow identifier in the PDF

Authorized IP QoS Parameter per flow identifier	Derivation from service information (see note 4)

Maximum Authorized Data Rate DL (Max_DR_DL) and UL (Max_DR_UL) per flow identifier	IF AF-Application-Identifier AVP demands application specific data rate handling THEN
	
	Max_DR_UL:= as defined by application specific algorithm;
	Max_DR_DL:= as defined by application specific algorithm;
	
	ELSE
	
	IF not RTCP flow(s) according to Flow-Usage AVP THEN
	IF Flow-Status = REMOVED THEN
	Max_DR_UL:= 0;
	Max_DR_DL:= 0;
	ELSE
	IF uplink Flow Desription AVP is supplied THEN
	IF Max-Requested-Bandwidth-UL is present THEN
	Max_DR_UL:= Max-Requested-Bandwidth-UL ;
	ELSE
	Max_DR_UL:= as set by the operator;
	ENDIF
	ELSE
	Max_DR_UL:= 0;
	ENDIF;
	IF downlink Flow Desription AVPs is supplied THEN
	IF Max-Requested-Bandwidth-DL is present THEN
	Max_DR_DL:= Max-Requested-Bandwidth-DL;
	ELSE
	Max_DR_DL:= as set by the operator;
	ENDIF
	ELSE
	Max_DR_DL:= 0;
	ENDIF;
	ENDIF;
	ENDIF;
	ELSE /* RTCP IP flow(s) */
	IF RS-Bandwidth is present and
	RR-Bandwidth is present THEN
	Max_DR_UL:= (RS-Bandwidth + RR-Bandwidth);
	Max_DR_DL:= (RS-Bandwidth + RR-Bandwidth);
	ELSE
	IF Max-Requested-Bandwidth-UL is present THEN
	IF RS-Bandwidth is present and
	RR-Bandwidth is not present THEN
	Max_DR_UL:= MAX[0.05 * Max-Requested-Bandwidth-UL,
	RS-Bandwidth];
	ENDIF;
	IF RS-Bandwidth is not present and
	RR-Bandwidth is present THEN
	Max_DR_UL:= MAX[0.05 * Max-Requested-Bandwidth UL,
	RR-Bandwidth];
	ENDIF;
	IF RS-Bandwidth and RR-Bandwidth is not present THEN
	Max_DR_UL:= 0.05 * Max-Requested-Bandwidth_UL ;
	ENDIF;
	ELSE
	Max_DR_UL:= as set by the operator;
	ENDIF;
	IF Max-Requested-Bandwidth-DL is present THEN
	IF RS-Bandwidth is present and
	RR-Bandwidth is not present THEN
	Max_DR_DL:= MAX[0.05 * Max-Requested-Bandwidth-DL,
	RS-Bandwidth];
	ENDIF;
	IF RS-Bandwidth is not present and
	RR-Bandwidth is present THEN
	Max_DR_DL:= MAX[0.05 * Max-Requested-Bandwidth-DL,
	RR-Bandwidth];
	ENDIF;
	IF RS-Bandwidth and RR-Bandwidth is not present THEN
	Max_DR_DL:= 0.05 * Max-Requested-Bandwidth-DL;
	ENDIF;

	ELSE
	Max_DR_DL:= as set by the operator;
	ENDIF;
	ENDIF;
	ENDIF;
	
	ENDIF

Maximum Authorized QoS Class [MaxClass] per flow identifier (see notes 1, 2 and 3)	IF AF-Application-Identifier AVP demands application specific QoS Class handling THEN
	MaxClass:= as defined by application specific algorithm;
	ELSE
	IF Media-Type is present THEN
	IF (only uplink Flow Desription AVPs are supplied for all IP flows of the AF session, which have media type "audio" or "video" and no flow usage "RTCP", or
	only downlink Flow Desription AVPs are supplied for all IP flows of the AF session, which have media type "audio" or "video" and no flow usage "RTCP") THEN
	MaxClassDerivation:=B; /*streaming*/
	ELSE
	MaxClassDerivation:=A; /*conversational*/
	ENDIF;
	
	CASE Media-Type OF
	"audio": MaxClass:= MaxClassDerivation
	"video": MaxClass:= MaxClassDerivation
	"application": MaxClass:=A; /*conversational*/
	"data": MaxClass:=E; /*interactive with priority 3*/
	"control": MaxClass:=C; /*interactive with priority 1*/
	/*new media type*/
	OTHERWISE: MaxClass:=F; /*background*/
	END;
	ELSE
	MaxClass:= as defined by by operator;
	ENDIF;
	ENDIF;

NOTE 1: The Maximum Authorized QoS Class for a RTCP IP flow is the same as for the corresponding RTP media IP flow. NOTE 2: When audio or video IP flow (s) are removed from a session, the parameter MaxClassDerivation shall keep the originally assigned value. NOTE 3: When audio or video IP flow(s) are added to a session, the PDF shall derive the parameter MaxClassDerivation taking into account the already existing media IP flow(s) within the session. NOTE 4: The encoding of the service information is defined in TS 29.209 [12]. If AVPs are omitted within a Media-Component-Description AVP or Media-Sub-Component AVP of the service information, the corresponding information from previous service information shall be used, as specified in TS 29.209 [12].	

Next modified Clause

7.2.1 SDP to UMTS QoS parameter mapping in UE

If SDP Parameters are available, then before activating or modifying a PDP Context the UE should check if the SDP Parameters give guidance for setting the requested UMTS QoS Parameters. The UE should use the mapping rule in table 7.2.1 to derive the Maximum and Guaranteed Bitrate DL/UL from the SDP Parameters.

Table 7.2.1: Recommended rules for derivation of the requested Maximum and Guaranteed Bitrate DL/UL per media component in the UE

UMTS QoS Parameter per media component	Derivation from SDP Parameters

Maximum Bitrate DL/UL and Guaranteed Bitrate DL/UL per media component	/* Check if the media use codec(s) */
	IF [(<media> = ("audio" or "video")) and (<transport> = "RTP/AVP")] THEN
	
	/* Check if Streaming */
	IF a= ("sendonly" or "recvonly") THEN
	Maximum Bitrate DL/UL and Guaranteed Bitrate DL/UL per media component as specified in reference [5] ;
	/* Conversational as default !*/
	ELSE
	Maximum Bitrate DL/UL and Guaranteed Bitrate DL/UL per media component as specified in reference [6] ;
	ENDIF ;
	
	/* Check for presence of bandwidth attribute for each media component */
	ELSEIF b=AS:<bandwidth-value> is present THEN
	IF media stream only downlink THEN
	Maximum Bitrate DL = Guaranteed Bitrate DL =<bandwidth-value >;
	ELSEIF mediastream only uplink THEN
	Maximum Bitrate UL = Guaranteed Bitrate UL =<bandwidth-value >;
	ELSEIF mediastreams both downlink and uplink THEN
	Maximum Bitrate DL = Guaranteed Bitrate DL =<bandwidth-value >;
	Maximum Bitrate UL = Guaranteed Bitrate UL =<bandwidth-value >;
	ENDIF;
	ELSE
	
	/* SDP does not give any guidance ! */
	Maximum Bitrate DL/UL and Guaranteed Bitrate DL/UL per media component as specified by the UE manufacturer;
	ENDIF ;

3GPP TSG-CT WG3 Meeting #36 ***Tdoc ⌘ C3-050357***

Cancun, Mexico. 25th - 29th April 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.207** **CR** **151** ⌘ **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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Corrections to Flow identifiers for Forking
Source:	⌘	Siemens
Work item code:	⌘	QoS1
Date:	⌘	21/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	For SDP, the order of uplink and downlink port numbers within a media component is usually the same. However, the order may differ if a=rtcp is used. However, a unique flow identifier needs to be assigned to a bidirectional combination of corresponding IP flows also in this case. To solve this issue, a change has been agreed in Rel-6 that uplink port numbers are given the higher priority. However, in case of forked responses to a MO SIP call where a=rtcp is used, uplink RTCP ports may be higher than RTP ports in some forked responses and lower in others. The SBLP handling of forking requires that the same flow identifiers are used for all forked responses. In contrast, the downlink port numbers do not differ due to forked responses, as they are contained in the offer.
Summary of change:	⌘	SDP port numbers are assigned in the order of downlink rather tha uplink port numbers.
Consequences if not approved:	⌘	SBLP does not work for MO calls with forked responses, if the SDP attribute “a=rtcp” is used.

Clauses affected:	⌘	Annex C

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

Other comments:	⌘	In Rel-5, a=rtcp was not supported and no distinction was made between uplink and downlink port numbers. Thus, the CR does not affect the backward compatibility with Rel-5 terminals.

Annex C (normative): Flow identifiers: Format definition and examples

C.1 Format of a flow identifier

A flow identifier is expressed as a 2-tuple as follows:

<The ordinal number of the position of the media component description in the SDI , The ordinal number of the IP flow(s) within the media component description assigned in the order of increasing ~~uplink~~ downlink port numbers as detailed below >

where both are numbered starting from 1. The encoding of the flow identifier is as indicated in 3GPP TS 24.008 [12].

If UE and AF share an algorithm for a given application, which guarantees that UE and AF assign the same ordinal number to each media component, the ordinal numbers of the IP Flows within a media component shall be assigned according to the following rules:

- All IP flow(s) or bidirectional combinations of two IP flow(s) within the media component, for which an down~~up~~link destination port number is available, shall be assigned ordinal numbers in the order of down~~up~~link destination port numbers.
- All IP flows, where no down~~up~~link destination port number is available, shall be assigned the next higher ordinal numbers in the order of up~~down~~link destination port numbers.

The ordinal number of a media component shall not be changed when the session description information is modified.

For SDP, the flow identifier shall be assigned in the following way:

The ordinal number of the position of the "m=" line in the SDP	The ordinal number of the IP flow(s) within the “m=” line assigned in the order of increasing down~~up~~link destination port numbers, if down~~up~~link destination port numbers are available. For up~~down~~link or inactive unicast media IP flows, an down~~up~~link destination port number is nevertheless available, if SDP offer-answer according to RFC 3264 is used. The ordinal number of the IP flow(s) within the “m=” line assigned in the order of increasing ~~downlink~~ uplink destination port numbers, if no down~~up~~link destination port numbers are available.

If no SDI with fixed and unique positions for media components is exchanged between UE and AF, the UE and AF may assign the ordinal numbers of the media components in another application-dependent algorithm which guarantees that UE and AF assign the same ordinal number to each media component.

If UE and AF do not share an algorithm for a given application, which guarantees that UE and AF assign the same ordinal number to each media component, the ordinal number of the media component shall be set to zero and the ordinal number of the IP flows shall be assigned according to the following rules:

1. If ordinal numbers for several IP flows are assigned at the same time, all uplink IP flows shall be assigned lower ordinal number than all downlink IP flows.

2. If ordinal numbers for several IP flows are assigned at the same time, all uplink and all downlink IP flows shall separately be assigned ordinal numbers according to increasing internet protocol number assigned by IANA (e.g. 8 for TCP and 17 for UDP)

3. If ordinal numbers for several IP flows are assigned at the same time, for each internet protocol with a port concept, all uplink and all downlink IP flows of this internet protocol shall separately be assigned ordinal numbers according to increasing port numbers.

4. If IP flows are removed from an existing session, the previously assigned binding info shall remain unmodified for the remaining IP flows.

5. If IP flows are added to an existing session, the previously assigned binding info shall remain unmodified and the new IP flows shall be assigned ordinal numbers following the rules 1. to 3., starting with the first previously unused ordinal number. The numbers freed in step 4. shall not be reused.

C.2 Example 1

An UE, as the offerer, sends a SDP session description, as shown in table C.2.1, to an application server (only relevant SDP parameters are shown):

Table C.2.1: The values of the SDP parameters sent by the UE in example 1.

```
v=0
o=ecsreid 3262464865 3262464868 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM01
i=One unidirectional audio media and one unidirectional video media and one bidirectional application
media
t=3262377600 3262809600
m=video 50230 RTP/AVP 31
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=recvonly
m=audio 50330 RTP/AVP 0
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=sendonly
m=application 50430 udp wb
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=sendrecv
```

and receives the SDP parameters, as shown in table C.2.2, from the application server:

Table C.2.2: The values of the SDP parameters sent by the application server in example 1.

```
v=0
o=ecsreid 3262464865 3262464868 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM01
i=One unidirectional audio media and one unidirectional video media and one bidirectional application
media
t=3262377600 3262809600
m=video 51372 RTP/AVP 31
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
a=sendonly
m=audio 49170 RTP/AVP 0
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
a=recvonly
m=application 32416 udp wb
```

```
c=IN IP6 2001:0646:000A:03A7:0250:DAFF:FE0E:C6F2
a=sendrecv
```

From this offer–answer exchange of SDP parameters the UE and the PDF each creates a list of flow identifiers comprising the IP flows as shown in table C.2.3:

Table C.2.3: Flow identifiers in example 1.

Order of 'm='-line	Type of IP flows	Destination IP address / Port number of the IP flows	Flow identifier
1	RTP (Video) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50230	<1,1>
1	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50231	<1,2>
1	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 51373	<1,2>
2	RTP (Audio) UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49170	<2,1>
2	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50331	<2,2>
2	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49171	<2,2>
3	UDP (application) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50430	<3,1>
3	UDP (application) UL	2001:0646:000A:03A7:0250:DAFF:FE0E:C6F2 / 32416	<3,1>

C.3 Example 2

In the general case, multiple ports may be specified with a "number of ports" qualifier as follows, RFC 2327 [17]:

m=<media> <port>/<number of ports> <transport> <fmt list>

An UE, as the offerer, sends a SDP session description, as shown in table C.3.1, to an application server (only relevant SDP parameters are shown):

Table C.3.1: The values of the SDP parameters sent by the UE in example 2.

```
v=0
o=ecsreid 3262464321 3262464325 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM02
i=One unidirectional audio media consisting of two media IP flows described by one media
component
t=3262377600 3262809600
m=audio 50330/2 RTP/AVP 0
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=recvonly
```

and receives the SDP parameters, as shown in table C.3.2, from the application server:

Table C.3.2: The values of the SDP parameters sent by the application server in example 2.

```
v=0
o=ecsreid 3262464321 3262464325 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM02
i=One unidirectional audio media consisting of two media IP flows described by one media
component
t=3262377600 3262809600
m=audio 49170/2 RTP/AVP 0
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
a=sendonly
```

From this offer–answer exchange of SDP parameters the UE and the PDF each creates a list of flow identifiers comprising the IP flows as shown in table C.3.3:

Table C.3.3: Flow identifiers in example 2.

Order of 'm='-line	Type of IP flows	Destination IP address / Port number of the IP flows	Flow identifier
1	RTP (audio) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50330	<1,1>
1	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50231	<1,2>
1	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49171	<1,2>
1	RTP (audio) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50332	<1,3>
1	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50333	<1,4>
1	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49173	<1,4>

3GPP TSG-CT WG3 Meeting #36 ***Tdoc C3-050312***

Cancun, Mexico. 25th - 29th April 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.209** **CR** **016** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*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 references
Source:	⌘	Ericsson
Work item code:	⌘	QoS1
Date:	⌘	29/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Incorrect references to TS23.228 and TS 24.229
Summary of change:	⌘	References to TS23.228 and TS 24.229 corrected
Consequences if not approved:	⌘	Misleading and incomplete reference list

Clauses affected:	⌘	2, A.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

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.002: "Network architecture".

[3] 3GPP TS 23.207: "End-to-end Quality of Service (QoS) concept and architecture".

[4] 3GPP TS 29.207: "Policy control over Go interface".

[5] 3GPP TS 29.208: "End-to-end Quality of Service (QoS) signalling flows".

[6] IETF RFC 3588: "Diameter Base Protocol".

[7] draft-ietf-aaa-diameter-nasreq-17.txt: "Diameter Network Access Server Application".

[8] IETF RFC 2234: "Augmented BNF for syntax specifications: ABNF".

[9] IETF RFC 3520: "Session Authorization Policy Element".

[10] 3GPP TS 33.210: "3G Security; Network Domain Security (NDS); IP network layer security".

[11] IETF RFC 3556: "Session Description Protocol (SDP) Bandwidth Modifiers for RTP Control Protocol (RTCP) Bandwidth".

[12] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[13] 3GPP TS 24.229: "IP Multimedia Call Control Protocol based on SIP and SDP; Stage 3".

Next modification

A.1 Support for SIP forking

The P-CSCF shall be able to handle forking when SBLP is applied. Forking can occur as specified in 3GPP TS 23.228 [124]. The related UE procedures are described in 3GPP TS 24.229 [134].

End of modifications

3GPP TSG-CT WG3 Meeting #36 ***Tdoc ⌘ C3-050402***

Cancun, Mexico. 25th - 29th April 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.209** **CR** **014** ⌘ **rev** **3** ⌘ Current version: **6.2.0** ⌘

*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:	⌘	Various Corrections
Source:	⌘	Siemens
Work item code:	⌘	QoS1
Date:	⌘	18/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change: ⌘ 1. Gq application ID allocated by IANA is available. See TS 29.230 V6.3.0.

2. draft-ietf-mmusic-sdp-new-24 introduced new media types “text” and “message”. “message” is used for messaging.

From this draft:
“8.2.1 Media types ("media")

The set of media types is intended to be small and SHOULD NOT be extended except under rare circumstances. The same rules should apply for media names as for top-level MIME content types, and where possible the same name should be registered for SDP as for MIME. For media other than existing MIME top-level content types, a standards-track RFC MUST be produced for a new top-level content type to be registered, and the registration MUST provide good justification why no existing media name is appropriate (the "Standards Action" policy of RFC 2434 [8].

This memo registers the media types "audio", "video", "text", "application" and "message".

Note: The media types "control" and "data" were listed as valid in the previous version of this specification [6], however their semantics were never fully specified and they are not widely used. These media types have been removed in this specification, although they still remain valid media type capabilities for a SIP user agent

	as defined in RFC 3840 [23]. If these media types are considered useful in future, a Standards Track RFC MUST be produced to document their use. Until that is done, applications SHOULD NOT use these types and SHOULD NOT declare support for them in SIP capabilities declarations (even though they exist in the registry created by RFC 3840)." 3. Wrong RFC referenced as Diameter base.
Summary of change: ⌘	1. Gq application ID allocated by IANA added. 2. New Values "text", "message" and "other "defined for Media-Type AVP. Reference to SDP-new draft added. 3. Reference corrected to RFC 3588
Consequences if not approved: ⌘	1. Incorrect Reference 2. Missing Media Types on Gq session description compared to SDP. 3. Missing application ID and remaining editor´s note.

Clauses affected:	⌘	2, 6.1, 6.1.1, 6.3, 6.5.21			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	According to TS 29.208, the media types "text", "message" and "other " will be mapped to the default background QoS class.			

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.002: "Network architecture".

[3] 3GPP TS 23.207: "End-to-end Quality of Service (QoS) concept and architecture".

[4] 3GPP TS 29.207: "Policy control over Go interface".

[5] 3GPP TS 29.208: "End-to-end Quality of Service (QoS) signalling flows".

[6] IETF RFC 3588: "Diameter Base Protocol".

[7] draft-ietf-aaa-diameter-nasreq-17.txt: "Diameter Network Access Server Application".

[8] IETF RFC 2234: "Augmented BNF for syntax specifications: ABNF".

[9] IETF RFC 3520: "Session Authorization Policy Element".

[10] 3GPP TS 33.210: "3G Security; Network Domain Security (NDS); IP network layer security".

[11] IETF RFC 3556: "Session Description Protocol (SDP) Bandwidth Modifiers for RTP Control Protocol (RTCP) Bandwidth".

[12] draft-ietf-mmusic-sdp-new-24 (February 2005): "SDP: Session Description Protocol".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

Next Modified Clause

6.1 Protocol support

The Diameter Base Protocol as specified in RFC 3588 [6] shall apply except as modified by the defined Gq application specific procedures and AVPs. Unless otherwise specified, the procedures (including error handling and unrecognized information handling) are unmodified.

In addition to the AVPs defined within the clause 6.5, the Diameter AVPs from the Diameter base application (RFC 3588 [6]) are reused within the Diameter messages of the Gq application. The support of AVPs from the Diameter Network Access Server Application (NASREQ) (draft-ietf-aaa-diameter-nasreq-17 [7]) is not required from Diameter implementations that conform to the present document.

Accounting functionality (Accounting Session State Machine, related command codes and AVPs) is not used in the Gq interface.

The Gq application is defined as an IETF vendor specific Diameter application with application ID 16777222, where the vendor is 3GPP. The vendor identifier assigned by IANA to 3GPP (http://www.iana.org/assignments/enterprise-numbers) is 10415.

~~Editor's note: The application id needs to be allocated from IANA.~~ With regard to the Diameter protocol defined over the Gq interface, the PDF acts as a Diameter server, in the sense that it is the network element that handles authorization requests for a particular realm. The AF acts as the Diameter Client, in the sense that is the network element requesting authorization to use bearer path network resources.

The support of Diameter agents between the PDF and the AF, is optional for the IMS, where the Gq is intra operator i.e. GGSN, PDF and P-CSCF are all in the same network.

6.1.1 Advertising application support

The AF and the PDF shall advertise the support of the Gq specific Application by including the value 16777222 of the application identifier in the Auth-Application-Id AVP and the value of the 3GPP (10415) in the Vendor-Id AVP of the Capabilities-Exchange-Request and Capabilities-Exchange-Answer commands. The Capabilities-Exchange-Request and Capabilities-Exchange-Answer commands are specified in the Diameter Base Protocol.

Next Modified Clause

6.3 Gq messages

Existing Diameter command codes from the Diameter base protocol RFC ~~2588~~ 3588 [6] and the NASREQ Diameter application (draft-ietf-aaa-diameter-nasreq-17 [7]) are used with the Gq specific AVPs. A Gq specific Auth-Application id is used together with the command code to identify the Gq messages.

NOTE: The notion of NAS (Network Access Server) is not used here, NASREQ is just used for protocol purposes, not for its functional meaning.

Next Modified Clause

6.5.21 Media-Type AVP

The Media-Type AVP (AVP code 520) is of type Enumerated, and it determines the media type of a session component. The media types indicate the type of media in the same way as the SDP media types with the same names defined in [12]. The following values are defined:

AUDIO (0)

VIDEO (1)

DATA (2)

APPLICATION (3)

CONTROL (4)

TEXT (5)

MESSAGE (6)

OTHER (0xFFFFFFFF)