

Source: CN3
Title: CRs to Rel-6 on Work Item "QoS1" (Gq interface)
Agenda item: 9.20
Document for: APPROVAL

Introduction:

This document contains 3 CRs to Rel-6 on Work Item "QoS1" that have been agreed by TSG CN WG3, and are forwarded to TSG CN Plenary for approval.

WG_tdoc	Spec	CR	R	Cat	Title	Rel	C_Ver	Work Item
N3-050053	29.209	011		F	Correction to Specific-Action AVP terminology	Rel-6	6.1.0	QoS1
N3-050202	29.207	150	3	F	Clarification on charging identifier(s) exchange.	Rel-6	6,2,0	QoS1
N3-050203	29.209	012	3	F	Clarification on charging identifier(s) exchange.	Rel-6	6,1,0	QoS1

CHANGE REQUEST

29.209 CR 011 # 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 to Specific-Action AVP terminology		
Source:	# Nortel		
Work item code:	# QoS1	Date:	# 18/02/2005
Category:	# F	Release:	# Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 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:	# In a previous meeting Gq-Specific-Action AVP (Tdoc 890) was rename to Specific-Action AVP. This has not be done sistematically to the whole document
Summary of change:	# Specific-Action AVP used all over the document
Consequences if not approved:	# Inconsistent AVP name

Clauses affected:	# 6.3.1, 6.3.3, 6.5.14,						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	#	X	#	
Y	N						
#	X						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Test specifications	#	X	#			
#	X						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> O&M Specifications	#	X	#			
#	X						
Other comments:	#						

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

***** FIRST MODIFIED CLAUSE *****

6.3.1 AA-Request (AAR) command

The AAR command, indicated by the Command-Code field set to 265 and the 'R' bit set in the Command Flags field, is sent by an AF to the PDF in order to request the authorization for the bearer usage for the AF session.

Message Format:

```
<AA-Request> ::= < Diameter Header: 265, REQ, PXY >
  < Session-Id >
  { Auth-Application-Id }
  { Origin-Host }
  { Origin-Realm }
  { Destination-Realm }
  * [ Media-Component-Description ]
  * [ Flow-Grouping ]
  [ AF-Charging-Identifier ]
  [ SIP-Forking-Indication ]
  * [ Gq-Specific-Action ]
  * [ Proxy-Info ]
  * [ Route-Record ]
  * [ AVP ]
```

***** END OF MODIFIED CLAUSE *****

***** NEXT MODIFIED CLAUSE *****

6.3.3 Re-Auth-Request (RAR) command

The RAR command, indicated by the Command-Code field set to 258 and the 'R' bit set in the Command Flags field, is sent by the PDF to the AF in order to indicate a [Gq](#) specific action.

As an option, the AF may send an AAR command to the PDF to update the service information when receiving an RAA command. However, application-specific authentication and/or authorization messages are not mandated for the Gq application in response to an RAR command.

The values INDICATION_OF_LOSS_OF_BEARER, INDICATION_OF_RECOVERY_OF_BEARER and INDICATION_OF_RELEASE_OF_BEARER of the [Gq](#)-Specific-Action AVP shall not be combined with each other in an Re-Auth-Request.

Message Format:

```
<RA-Request> ::= < Diameter Header: 258, REQ, PXY >
  < Session-Id >
  { Origin-Host }
  { Origin-Realm }
  { Destination-Realm }
  { Destination-Host }
  { Auth-Application-Id }
  * { Gq-Specific-Action }
  * [ Access-Network-Charging-Identifier ]
  [ Access-Network-Charging-Address ]
  * [ Flows ]
  [ Abort-Cause ]
  [ Origin-State-Id ]
  * [ Proxy-Info ]
  * [ Route-Record ]
  * [ AVP ]
```

***** END OF MODIFIED CLAUSE *****

***** NEXT MODIFIED CLAUSE *****

6.5.14 Specific-Action AVP

The Specific-Action AVP (AVP code 513) is of type Enumerated.

Within a PDF initiated Re-Authorization Request, the ~~Gq~~ Specific-Action AVP determines the type of the action.

Within an initial AA request the AF may use the Specific-Action AVP to request specific actions from the server at the bearer events and to limit the contact to such bearer events where specific action is required. If the Specific-Action AVP is omitted within the initial AA request, no notification of any of the events defined below is requested.

The following values are defined:

SERVICE_INFORMATION_REQUEST (0)

Within a RAR, this value shall be used when the server requests the service information from the AF for the bearer event. In the AAR, this value indicates that the AF requests the server to demand service information at each bearer authorization.

CHARGING_CORRELATION_EXCHANGE (1)

Within a RAR, this value shall be used when the server reports the access network charging identifier to the AF. The Access-Network-Charging-Identifier AVP shall be included within the request. In the AAR, this value indicates that the AF requests the server to provide an access network charging identifier to the AF at each bearer establishment/modification, when a new access network charging identifier becomes available.

INDICATION_OF_LOSS_OF_BEARER (2)

Within a RAR, this value shall be used when the server reports a loss of a bearer (e.g. in the case of GPRS PDP context bandwidth modification to 0 kbit) to the AF. In the AAR, this value indicates that the AF requests the server to provide a notification at the loss of a bearer.

INDICATION_OF_RECOVERY_OF_BEARER (3)

Within a RAR, this value shall be used when the server reports a recovery of a bearer (e.g. in the case of GPRS, PDP context bandwidth modification from 0 kbit to another value) to the AF. In the AAR, this value indicates that the AF requests the server to provide a notification at the recovery of a bearer.

INDICATION_OF_RELEASE_OF_BEARER (4)

Within a RAR, this value shall be used when the server reports the release of a bearer (e.g. PDP context removal for GPRS) to the AF. In the AAR, this value indicates that the AF requests the server to provide a notification at the removal of a bearer.

***** END OF MODIFIED CLAUSE *****

CHANGE REQUEST

№ **29.207 CR 150** № 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:	№ Clarification on charging identifier(s) exchange.		
Source:	№ Vodafone		
Work item code:	№ QoS1	Date:	№ 15/02/2005
Category:	№ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Release:	№ Rel-6 Use <u>one</u> 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:	№ Security issue for the operator.		
Summary of change:	№ In order to perform charging correlation, when the PDF receives the GCID together with the GGSN address from the GGSN, it shall forward this information to the AF. If the AF is in an outside network the operator might not want to provide the GGSN IP address for security reason.		
Consequences if not approved:	№ There could be a security risk for the operator.		

Clauses affected:	№ 4.3.2.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications № Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	№										

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***** Modified Section *****

4.3.2 PDF

4.3.2.1 Service-based local policy decision point

The PDF functions as a Policy Decision Point for the service-based local policy control. The PDF makes policy decisions based on session and media related information obtained from the AF via the Gq interface. The PDF shall exchange the decision information with the GGSN via the Go interface.

The following policy decision point functionalities for SBLP are identified:

- Authorisation function:

The PDF shall be able to provide an authorisation decision upon receiving a bearer authorisation request from the GGSN. The PDF shall authorise the request according to the stored session and media related information received from the AF.

The PDF shall use the binding information to determine the AF session(s) and the set of IP flows. Multiple sets of binding information and multiple AF sessions may be involved, if flows from separate AF sessions are multiplexed in the same PDP context. Based on the IP flows, the PDF shall determine the authorised QoS, packet filters, and gate status to be applied. The authorised QoS specifies the maximum allowed QoS class, and the data rate for the set of IP flows identified in the binding information.

The PDF shall be able to provide updates to the authorisation decision, if receiving modified service information from the AF which changes the QoS and packet classifiers for PDP contexts which are already established.

- Revoke function:

The PDF may revoke the authorisation of resources at any time. Revoke Authorisation for GPRS and IP resources is communicated by the PDF to the GGSN.

- Approval of QoS Commit / Removal of QoS Commit:

The PDF may allow or deny the usage of the PDP context for the selected IP flow(s) by controlling the correlated gate(s).

The "Approval of QoS Commit" command may either be part of the authorisation decision, or the PDF may provide a separate decision with the "Approval of QoS Commit" command to open the gate.

The "Removal of QoS Commit" command is a separate decision to close the gate(s) e.g. when a media IP flow(s) is put on hold.

- Actions due to Indication of bearer release:

When the GGSN informs the PDF of bearer deactivation, the PDF shall remove the corresponding authorisation request state. Additionally, the PDF shall inform the AF about this deletion event.

- Actions due to Indication of bearer modification:

When the PDF receives an indication of bearer modification of the maximum bitrate to or from 0 kbits/s, the PDF shall inform the AF about this modification event.

- Generation of authorisation token:

The PDF generates an authorisation token for the AF session as specified in 3GPP TS 29.209 [23].

- Mapping service information to "Authorized QoS" parameters:

To perform proper authorisation, the PDF shall map the necessary service information containing session and media related information to "Authorized QoS" parameters.

- Charging identifiers exchange:

The PDF shall send the AF charging information (e.g. ICID if the AF is P-CSCF) , if provided by the AF, as part of the initial authorisation decision(s) for all the bearer authorization request(s) that correspond to the respective AF session.

When the PDF receives the GCID together with the GGSN address from the GGSN, it shall forward this information to the AF to ensure charging correlation. [This information should not be forwarded over an inter-operator interface.](#)

CHANGE REQUEST

№ **29.209 CR 012** № rev **3** № 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:	№ Clarification on charging identifier(s) exchange.		
Source:	№ Vodafone		
Work item code:	№ QoS1	Date:	№ 15/02/2005
Category:	№ F	Release:	№ Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 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:	№ Security issue for the operator.
Summary of change:	№ Currently according to clause 5.1.2 the PDF shall send in a RAR message an access network charging identifier (e.g.GCID) and an access network charging address (e.g.GGSN IP address) to the AF for charging correlation. If the AF is in an outside network the operator might not want to provide the GGSN IP address for security reason.
Consequences if not approved:	№ There could be a security risk for the operator.

Clauses affected:	№ 5.1.2						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	№
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<input checked="" type="checkbox"/>	Test specifications	№					
<input checked="" type="checkbox"/>	O&M Specifications	№					
Other comments:	№						

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***** MODIFIED CLAUSE *****

5.1.2 Resource reservation

When receiving a bearer authorization request from the Go interface, the PDF shall authorize the request according to the stored SBLP for the session, if available.

For a bearer authorization request with a new authorization token the PDF shall behave as described within the present paragraph: If the SBLP is not available for the session, or if the AF has instructed the PDF to do so, the PDF shall send the Re-Auth_Request message with the SERVICE_INFORMATION_REQUEST indication in the Specific-Action AVP to the AF to request the service information. When receiving the Media-Component-Description AVP(s) in the Re-Auth-Answer message, the PDF shall authorize the required QoS resources and shall store the SBLP for the session. If SBLP is available for the session but authorization for unknown flow identifiers is being requested, and the AF has not instructed the PDF to contact it at bearer authorization, the PDF shall deny the authorization without contacting the AF.

For a bearer authorization request for an authorization token already authorized by the PDF, the PDF shall behave as described within the present paragraph: If the request contains binding information for media with no corresponding SBLP available at the PDF, or if the PDF has already authorized the same binding information and not obtained updated service information since then, or if the AF has instructed the PDF to do so, the PDF shall send a Re-Auth-Request message with the SERVICE_INFORMATION_REQUEST indication in the Specific-Action AVP to the AF to request updated service information. When receiving the Media-Component-Description AVP(s) in the Re-Auth-Answer message the PDF shall authorize the required QoS resources and shall store the SBLP for the session.

After the bearer authorization the PDF shall send possible new access network charging identifier(s) (e.g. GCID), received from the GGSN during the bearer authorization to the AF for charging correlation purposes, and an access network charging-address (e.g. GGSN IP Address), if the AF has instructed the PDF to do so. The PDF does this by sending the Re-Auth_Request message with the CHARGING_CORRELATION_EXCHANGE indication in the Specific-Action AVP to the AF. [The access network charging identifier\(s\) and the access network charging-address should not be sent over an inter-operator interface.](#)