

**Source:** TSG SA WG2  
**Title:** CRs on 23.207 (End to End QoS)  
**Agenda Item:** 7.2.3

The following Change Request has been approved by TSG SA WG2 and is requested to be approved by TSG SA plenary #23.

Note: the source of all these CRs is now S2, even if the name of the originating company(ies) is still reflected on the cover page of all the attached CRs.

S2 doc #	Title	Spec	CR #	cat	Version in	REL	WI	S2 meeting	Clauses affected
<a href="#">S2-040999</a>	Update Authorization Procedure	23.207	<b>072r1</b>	F	5.8.0	5	E2EQoS	S2 #38	New clause 6.3.8
<a href="#">S2-040996</a>	Update of Authorization on Gq	23.207	<b>074r1</b>	B	6.1.1	6	QoS1	S2 #38	New clause 6.3.8
<a href="#">S2-040802</a>	Mapping amendment to PDF procedures	23.207	<b>068r1</b>	B	6.1.1	6	QoS1	S2 #38	6.1.3
<a href="#">S2-040803</a>	Mapping amendment to AF procedures	23.207	<b>069r2</b>	B	6.1.1	6	QoS1	S2 #38	6.1.4
<a href="#">S2-040951</a>	SBLP implications of bundling different IMS sessions to the same PDP Context	23.207	<b>073r1</b>	B	6.1.1	6	QoS1, IMS2	S2 #38	5.2.3, 5.2.4, 6.1.2, 6.1.3, 6.1.4
<a href="#">S2-040997</a>	Service information	23.207	<b>075r1</b>	B	6.1.1	6	QoS1	S2 #38	5.3a.2

CR-Form-v7

## CHANGE REQUEST

⌘ **23.207** CR **068** ⌘ rev **1** ⌘ Current version: **6.1.1** ⌘

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

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Mapping amendment to PDF procedures		
<b>Source:</b>	⌘ SA2 (Nokia)		
<b>Work item code:</b>	⌘ QoS1	<b>Date:</b>	⌘ 16/02/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ As part of the QoS authorization, the PDF receives service information and gate filters from AF over the Gq interface, and converts them to Authorized QoS information sent to the GGSN over the Go interface. For clarity, it would be good to describe this mapping shortly in the TS 23.207.
<b>Summary of change:</b>	⌘ A sentence clarifying that the PDF does mapping from the service information and gate filters (sent over Gq) to Authorized QoS information (sent over Go).
<b>Consequences if not approved:</b>	⌘ Possibility for different interpretations regarding what type of mapping takes place in the PDF.

<b>Clauses affected:</b>	⌘ 6.1.3						
<b>Other specs Affected:</b>	<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 checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
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<b>Other comments:</b>	⌘						

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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.

### 6.1.3 Procedures in the PDF

In case of applying Service based local policy:

The QoS procedures in the PDF are related to service based local policy control.

The authorize QoS resources procedure can be invoked between the PDF and the AF at AF session establishment and/or at bearer establishment. When the AF requests one or more Authorization-Token(s) from the PDF, it indicates whether or not the PDF should contact the AF at UE resource reservation. The Authorization-Token(s) is/are generated by the PDF and sent to the AF.

When the PDF received service information from the AF, the PDF shall authorize the QoS resources, and stores the SBLP for the AF session based on the service information received from the AF.

–Upon receiving the bearer authorization request from the GGSN, the PDF shall authorize the request according to the stored SBLP for the session.

As part of the authorization, the PDF shall perform the mapping from the service information conveyed over the Gq interface to the Authorized QoS sent over the Go interface.

The PDF makes a final decision to enable the allocated QoS resource for the authorized IP flows. This may be triggered by an instruction from the AF. QoS resources may also be enabled at the time they are authorised by the PDF.

When the PDF receives updated service information, the AF sends an update for service information to the PDF. The PDF shall be able to decide if new QoS authorization is needed. A new authorization shall be required when the resources requested by the UE for a flow exceeds previous authorization, or a new flow is added, or when elements of the packet classifier(s) for authorized flow changed.

The PDF shall revoke the resource authorization based on request from the AF.

## CHANGE REQUEST

⌘ **23.207 CR 069** ⌘ rev **2** ⌘ Current version: **6.1.1** ⌘

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**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Mapping amendment to AF procedures		
<b>Source:</b>	⌘ SA2 (Nokia)		
<b>Work item code:</b>	⌘ QoS1	<b>Date:</b>	⌘ 16/02/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The AF receives the application related media descriptions (e.g. SDP media components) and performs protocol mapping on them in order to pass them to the PDF as service information and gate filters. For clarity, it would be good to describe this shortly in the TS 23.207.  Note, that the AF needs to provide the PDF with the gate filters (and not "raw" SDP parameters) as the AF controls the gate with these gate filters.		
<b>Summary of change:</b>	⌘ A sentence clarifying that the AF does protocol mapping from application media descriptions to Gq interface service information and gate filters.		
<b>Consequences if not approved:</b>	⌘ Possibility for different interpretations regarding what type of mapping takes place in the AF.		

<b>Clauses affected:</b>	⌘ 6.1.4										
<b>Other specs Affected:</b>	<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> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	⌘	X	⌘	X	⌘	X	Other core specifications Test specifications O&M Specifications	⌘
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<b>Other comments:</b>	⌘										

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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.

## 6.1.4 Procedures in the AF

The authorize QoS resources procedure is triggered by the AF when it receives an AF session signalling message initiating a new AF session. Upon the authorize QoS procedure:

- The AF shall request one authorization token for a session, or multiple authorisation tokens to be used for future AF sessions, from the PDF in the initial authorisation request.
- If the AF indicates to the PDF that it wishes to be contacted upon bearer resource reservation, the service information shall be passed during the Gq interaction upon bearer resource reservation. Alternatively, if the initial AF session signalling message contains session description information, such as the end-point addresses, bandwidth requirements and the characteristics of the media exchange, the AF shall forward this information to the PDF as part of the service information at the same time with the authorisation token request.
- [The AF generates the information \(e.g. service information\) conveyed over the Gq interface from the application specific media description \(e.g. SDP media description\).](#)
- The PDF shall use the service information for the QoS policy set up for the session. During a session change, the AF shall send an update for service information to the PDF based on the new session description information exchanged within AF session signalling.

The AF orders the PDF to enable or disable a media to pass through the access network. The AF shall be able to send an instruction for the PDF to wait for the Approval of QoS Commit procedure to enable the media as part of the authorization of the bearer establishment for the media. The AF may use Removal of QoS commit procedure to disable the media e.g. when a media component of a session is put on hold.

At session release, the AF shall send an instruction to the PDF to revoke the resource authorization.

## CHANGE REQUEST

⌘ **23.207 CR 072** ⌘ rev **1** ⌘ Current version: **5.8.0** ⌘

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

<b>Title:</b>	⌘ Update Authorization Procedure		
<b>Source:</b>	⌘ SA2 (Nokia)		
<b>Work item code:</b>	⌘ E2EQoS	<b>Date:</b>	⌘ 16/02/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ The procedure for updating Authorization is not described in TS 23.207, however, stage-3 details of this procedure have been defined in TS 29.208. Hence, there is a clear mis-alignment between stage-2 and stage-3.
<b>Summary of change:</b>	⌘ A new flow has been added to describe the procedure for updating authorization.
<b>Consequences if not approved:</b>	⌘ Stage-2 and stage-3 would remain mis-aligned.

<b>Clauses affected:</b>	⌘ New clause 6.3.8										
<b>Other specs affected:</b>	<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> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N	⌘	X	⌘	X	⌘	X		
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<b>Other comments:</b>	⌘										

### How to create CRs using this form:

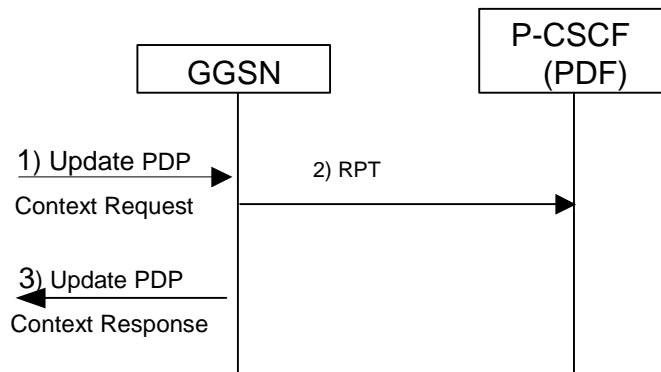
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant t



### 6.3.7 Indication of PDP Context Modification

The “Indication of PDP Context Modification” procedure is used when a PDP Context is modified such that the maximum bit rate (downlink and uplink) is downgraded to 0 kbit/s or changed from 0 kbit/s to a value that falls within the limits that were authorized at PDP context activation(or last modification). In this case, the GGSN communicates with the PDF as described below. The following figures present the “Indication of PDP Context Modification” procedure.

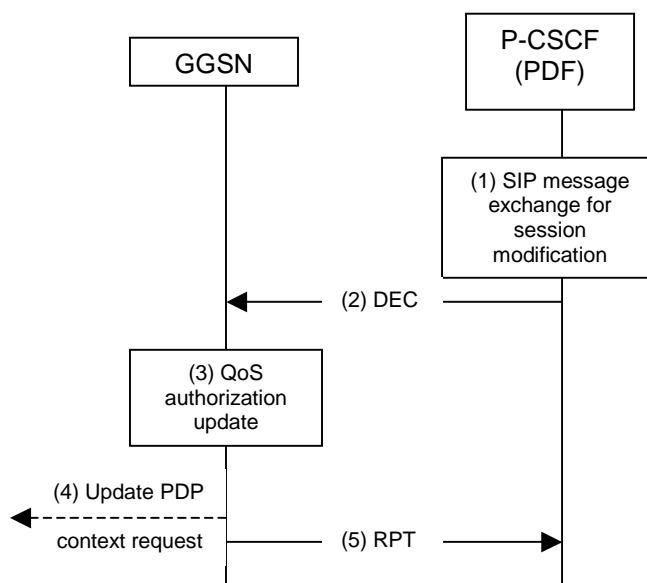


**Figure 15: Indication of PDP Context Modification**

- 1) A request to modify the PDP context related to the media flow is indicated by sending the Update PDP Context Request message to the GGSN.
- 2) The GGSN sends a COPS RPT message to the P-CSCF(PDF) to indicate the state changes of the PDP context.
- 3) The GGSN sends the Update PDP Context Response message to the SGSN to acknowledge the PDP context modification.

### 6.3.8 Update Authorization procedure

When a session is modified, an update for a previous authorization of the session may be sent from the PDF to the GGSN as an unsolicited authorization decision. Figure 16 below presents the “Update Authorization” procedure.



**Figure 16: Update Authorization for the session**

- 1) SIP message exchange for session modification is carried out. In case the session modification requires enhancing the reserved resources, the P-CSCF(PDF) may decide not to send an updated decision authorizing the enhanced QoS to the GGSN, but would rather wait for a new authorization request from the GGSN.
- 2) In case the session modification affects the authorized resources, the PDF sends a COPS DEC message to the GGSN to enforce authorization according to the session modification.
- 3) The GGSN updates the authorization.
- 4) If the existing QoS of the PDP context exceeds the updated authorized QoS and the UE does not modify the PDP context accordingly, the GGSN shall perform a network initiated PDP context modification to reduce the QoS to the authorized level.
- 5) The GGSN sends a COPS RPT message back to the PDF.

CR-Form-v7

## CHANGE REQUEST

# **23.207 CR 073** # rev **1** # Current version: **6.1.1** #

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

**Proposed change affects:** UICC apps#  ME  Radio Access Network  Core Network

<b>Title:</b>	# SBLP implications of bundling different IMS sessions to the same PDP Context		
<b>Source:</b>	# SA2 (Nokia)		
<b>Work item code:</b>	# QoS1 and IMS2	<b>Date:</b>	# 16/02/2004
<b>Category:</b>	# <b>B</b>	<b>Release:</b>	# Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

**Reason for change:** # During the course of Rel5 development some restrictions were introduced regarding carrying media from different IMS sessions in the same PDP Context. These restrictions are now being lifted for Rel6, as the necessary tools to support such bundling of media components are being specified within the flow-based bearer charging work. At the same time, there are some Service Based Local Policy related implications of such a bundling of IMS media componenets. These implications need to be clarified.

**Summary of change:** # It is proposed that:

- 1) Different AF sessions using the same PDP context shall use the same PDF.
- 2) The PDF shall send aggregate decisions (i.e. decisions for all IP flows related to the client handle) to the GGSN, i.e. when one session is modified the PDF shall send an authorization decision comprising all flows carried by the related PDP context.
- 3) The UE shall send the sets of binding information of all IP flows of the PDP context upon updating the PDP context for some of the flows, e.g. adding or removing an IP flow or a session.

Additionally, some left over text related to PDF/AF split has been cleaned up.

**Consequences if not approved:** #

**Clauses affected:** # 5.2.3, 5.2.4, 6.1.2, 6.1.3, 6.1.4

# **Y N**

<b>Other specs Affected:</b>	⌘	<input checked="" type="checkbox"/>	Other core specifications	⌘	29.207, 29.208, 24.229
		<input checked="" type="checkbox"/>	Test specifications		
		<input checked="" type="checkbox"/>	O&M Specifications		
<b>Other comments:</b>	⌘				

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\*\*\* FIRST CHANGE \*\*\*

### 5.2.3 PDF

This clause provides functional descriptions of capabilities in PDF. The PDF makes policy decisions based on policy set-up information obtained from the AF via the Gq interface.

~~Editor's note: Once the functional split between the AF and the PDF is further clarified, the P-CSCF(PDF)-related text shall be accordingly revised, and the AF-related text is to be moved to section 5.2.4.~~

#### Service-based Local Policy Decision Point

- Authorize QoS resources (bandwidth, etc.) for the AF session. The PDF shall use the policy set-up information received from the AF to calculate the proper authorization. The authorization shall be expressed in terms of the IP resources to be authorized. The authorization shall include limits on QoS for the set of IP flows and restrictions on individual IP flows (e.g. destination address and port).
- ~~For bi-directional media flows, the P-CSCF(PDF), according to operator policy, may assume that the 64-bit IPv6 address prefix of the source address for downstream packets is the same as the prefix of the destination address for upstream packets of the same media flow. The implementation of this P-CSCF(PDF) assumption would be determined by operator policy in order to reduce the possibilities of bearer misuse.~~ In the filters supplied by the PDF for bi-directional flows, the source address prefix for downstream packets may be identified as the same as the destination address prefix for the upstream. Similarly, the source address prefix for the upstream packets may be identified as the same as the destination address prefix for the downstream.
- In case of IMS, the P-CSCF(PDF) shall be able to enforce the behaviour of the UE with respect to the assignment of IMS media components to the same PDP Context or to separate PDP Contexts. This behaviour of the UE is controlled by the AF (i.e. the P-CSCF) using the indications described in Section E.2.2.1 of [4]. In case the UE violates this indication, and attempts to carry multiple IMS media components in a single PDP context despite of an indication that mandated separate PDP contexts, the P-CSCF/PDF shall take care that such a PDP context would be rejected by the GGSN. To do so, the P-CSCF/PDF uses the Go interface.
- The P-CSCF(PDF) shall be able to decide if new QoS authorization (bandwidth, etc.) is needed due to the a mid-call media or codec change. A new authorization shall be required when the resources requested by the UE for a flow exceeds previous authorization, or a new flow is added, or when elements of the packet classifier(s) for authorized flows change.
- The PDF functions as a Policy Decision Point for the service-based local policy control.
- The PDF shall exchange the authorization information with the GGSN via the Go interface.
- PDF provides final policy decisions controlling the allocated QoS resources for the authorized media stream. The decision shall be transferred from the PDF to the GGSN.
- At AF session release, the PDF shall revoke the QoS resource authorization for the AF session.

#### Binding Mechanism Handling

- The PDF generates an authorization token for each AF session on request from the AF. The authorization token includes a fully qualified domain name of the PDF. The authorization token shall be unique across all PDP contexts associated with an APN. The authorization token conforms to the IETF specification on SIP Extensions for Media Authorization.

**\*\*\* NEXT SET OF CHANGES \*\*\***

## 5.2.4 Application Function (AF)

The Application Function (AF) is an element offering applications that require the control of IP bearer resources (e.g. UMTS PS domain/GPRS domain resources). One example of an Application Function is the P-CSCF.

Service Based Local Policy related functions

- The AF shall use Gq interface to exchange service based policy set-up information with the PDF. [This applies both during session establishment, as well as upon a mid-session modification effecting the media \(e.g. addition of a new media in mid-session\).](#)
- The AF shall indicate to the PDF whether or not the PDF should contact the AF at UE resource reservation.
- [For bi-directional media flows, the AF, according to operator policy, may assume that the 64-bit IPv6 address prefix of the source address for downstream packets is the same as the prefix of the destination address for upstream packets of the same media flow. The implementation of this AF assumption would be determined by operator policy in order to reduce the possibilities of bearer misuse.](#)

Binding Mechanism Handling

- The AF requests authorization token(s) from the PDF. The following are possible:
  1. The PDF authorizes QoS resources usage for that application for a particular session and user. The authorization token is only valid for the duration of the session for the specific user.
  2. The AF requests multiple authorization tokens. The PDF provides the requested number of authorization tokens. Each of these tokens may later be allocated to a session, and then used for subsequent QoS resource usage authorization procedures for the duration of the session for the specific user.
- [For AF sessions to and from the same UE, the AF\(s\) shall request authorization tokens from the same PDF.](#)

[Note: As a consequence, the GGSN will contact the same PDF for SBLP authorization for all AF sessions using the same PDP context.](#)

The AF sends the authorization token to the UE in AF session signaling.

**\*\*\* NEXT SET OF CHANGES \*\*\***

## 6.1.2 Procedures in the UE

The QoS procedures in the UE are triggered by the application layer (e.g., SIP/SDP) QoS requirements. The exact QoS procedures in the UE depend on the UE QoS capabilities.

For UEs that support only UMTS QoS mechanism, the application QoS requirements will trigger a PDP Context Activation procedure with the corresponding UMTS QoS parameters. For UEs that support both IP (e.g., IP BS Manager) and UMTS QoS mechanism, the application QoS requirements are mapped down to the IP layer QoS parameters. The IP layer parameters are further mapped down to the PDP context parameters in the UE. For UEs that support RSVP, the application QoS requirements are mapped down to create an RSVP session. The UE shall establish a PDP context suitable for support of the RSVP session.

In addition in the case of IMS, the following procedures apply: if the UE received the Media Authorization Token in the SIP signalling, the UE shall include the Media Authorization Token in the PDP Context Activation request for the PDP Context(s) that are activated to carry the media flows of the IMS session. [In case the UE carries media flows from different AF sessions in the same PDP Context, the UE shall include the Media Authorization Tokens of all these AF sessions in the PDP Context Activation/Modification request.](#)

Note: This also implies that if the UE initiates a new AF session and intends to carry media of this AF session in an already activated PDP context that carries media from other AF session(s), then the UE initiates a PDP Context Modification request and includes all authorization tokens of all AF sessions that use this PDP Context in this request.

For UEs that support RSVP, if the UE received the Media Authorization Token in AF session signalling, the UE shall include the Media Authorization Token in both the PDP Context Activation request for the PDP Context(s) that are activated to carry the media flows of the AF session, and the RSVP messages if the PDP Context/RSVP is associated to the session.

At the AF session release, the UE shall release all QoS resources allocated for the AF session.

NOTE: Service Based Local Policy may restrict the destination of packets to the addresses/ports included in the AF session signalling. Mechanisms such as MIPv6 Route Optimisation which send packets to other addresses/ports may therefore not operate correctly.

### 6.1.3 Procedures in the PDF

In case of applying Service based local policy:

The QoS procedures in the PDF are related to service based local policy control.

The authorize QoS resources procedure can be invoked between the PDF and the AF at AF session establishment and/or at bearer establishment. When the AF requests one or more Authorization-Token(s) from the PDF, it indicates whether or not the PDF should contact the AF at UE resource reservation. The Authorization-Token(s) is/are generated by the PDF and sent to the AF.

When the PDF received service information from the AF, the PDF shall authorize the QoS resources, and stores the SBLP for the AF session based on the service information received from the AF.

–Upon receiving the bearer authorization request from the GGSN, the PDF shall authorize the request according to the stored SBLP for the session. The PDF shall send aggregate decisions (i.e. decisions for all media flows pertaining to the same authorization request) to the GGSN, i.e. when one session is modified, the PDF shall send an authorization decision comprising all media flows carried by the PDP context that is being authorized.

The PDF makes a final decision to enable the allocated QoS resource for the authorized IP flows. This may be triggered by an instruction from the AF. QoS resources may also be enabled at the time they are authorised by the PDF.

When the PDF receives updated service information, the AF sends an update for service information to the PDF, the PDF shall be able to decide if new QoS authorization is needed. A new authorization shall be required when the resources requested by the UE for a flow exceeds previous authorization, or a new flow is added, or when elements of the packet classifier(s) for authorized flow changed.

The PDF shall revoke the resource authorization based on request from the AF.

### 6.1.4 Procedures in the AF

The authorize QoS resources procedure is triggered by the AF when it receives an AF session signalling message initiating a new AF session. Upon the authorize QoS procedure:

- The AF shall request one authorization token for a session, or multiple authorisation tokens to be used for future AF sessions, from the PDF in the initial authorisation request. For AF sessions to and from the same UE, the AF(s) shall request authorization tokens from the same PDF.

Note: This also implies that if different AF sessions of a user are controlled by different AFs, then all these AFs will request authorization tokens from the same PDF. Hence, the bearer authorization of the PDP Context(s) carrying the media of these AF sessions will be performed by the same PDF.

- If the AF indicates to the PDF that it wishes to be contacted upon bearer resource reservation, the service information shall be passed during the Gq interaction upon bearer resource reservation. Alternatively, if the initial AF session signalling message contains session description information, such as the end-point addresses, bandwidth requirements and the characteristics of the media exchange, the AF shall forward this information to the PDF as part of the service information at the same time with the authorisation token request.

- The PDF shall use the service information for the QoS policy set up for the session. During a session change, the AF shall send an update for service information to the PDF based on the new session description information exchanged within AF session signalling.

The AF orders the PDF to enable or disable a media to pass through the access network. The AF shall be able to send an instruction for the PDF to wait for the Approval of QoS Commit procedure to enable the media as part of the authorization of the bearer establishment for the media. The AF may use Removal of QoS commit procedure to disable the media e.g. when a media component of a session is put on hold.

At session release, the AF shall send an instruction to the PDF to revoke the resource authorization.

**\*\*\* END OF ALL CHANGES \*\*\***



## CHANGE REQUEST

⌘ **23.207 CR 074** ⌘ rev **1** ⌘ Current version: **6.1.1** ⌘

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

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Update of Authorization on Gq		
<b>Source:</b>	⌘ SA2 (Nokia)		
<b>Work item code:</b>	⌘ QoS1	<b>Date:</b>	⌘ 16/02/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The AF may send new service information to the PDF at anytime at session change. The session change may be any session level occurrence that change or add something into the service information previously sent to the PDF. This scenario has been studied and consolidated in TR 23.917 and is mature enough to be brought to TS 23.207.		
<b>Summary of change:</b>	⌘ New chapter added to describe authorization update scenario.		
<b>Consequences if not approved:</b>	⌘		

<b>Clauses affected:</b>	⌘ New clause 6.3.8									
<b>Other specs affected:</b>	<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;">X</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	⌘ TS 29.207, TS 29.208
Y	N									
X										
	X									
	X									
<b>Other comments:</b>	⌘									

**How to create CRs using this form:**

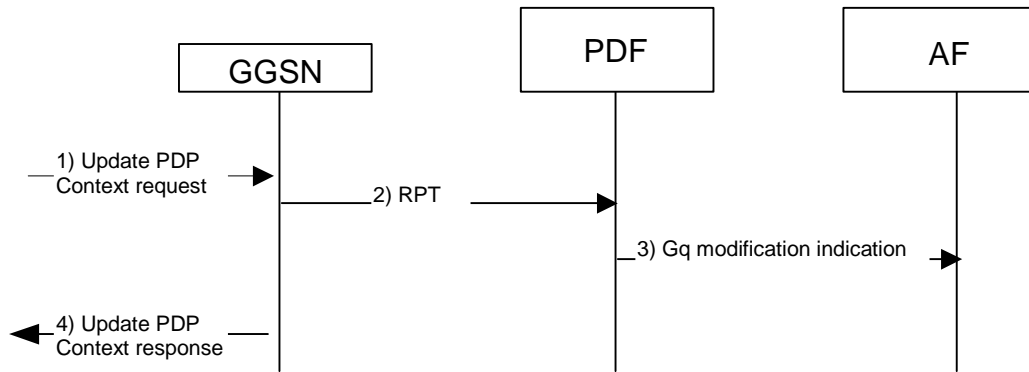
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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 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.

### 6.3.7 Indication of PDP Context Modification

The “Indication of PDP Context Modification” procedure is used when a PDP Context is modified such that the maximum bit rate (downlink and uplink) is downgraded to 0 kbit/s or changed from 0 kbit/s to a value that falls within the limits that were authorized at PDP context activation(or last modification). In this case, the GGSN communicates with the PDF as described below. The following figures present the “Indication of PDP Context Modification” procedure.

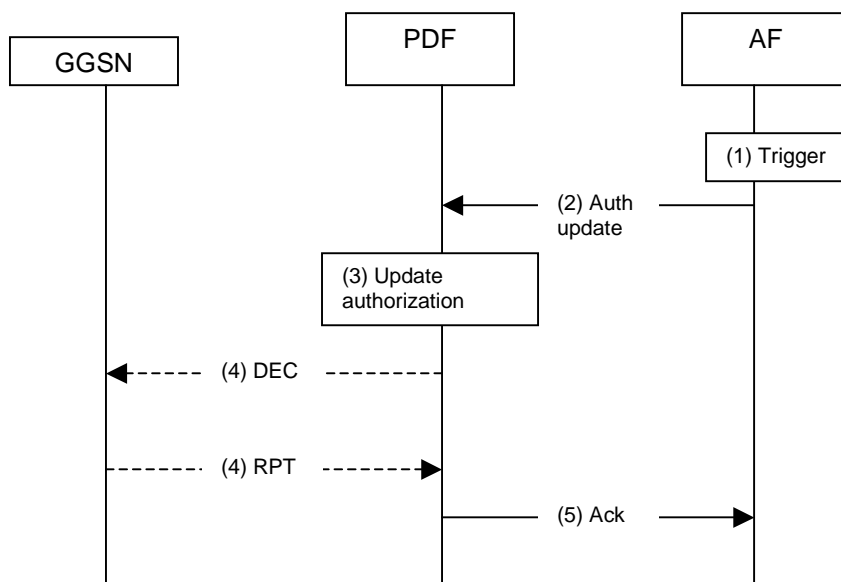


**Figure 15: Indication of PDP Context Modification**

- 1) A request to modify the PDP context related to the media flow is indicated by sending the Update PDP Context Request message to the GGSN.
- 2) The GGSN sends a COPS RPT message to the PDF to indicate the state changes of the PDP context.
- 3) If this state change matches the criteria for which that the AF had requested to be informed, the PDF shall give a bearer modification indication to the Application Function.
- 3) The GGSN sends the Update PDP Context Response message to the SGSN to acknowledge the PDP context modification.

### 6.3.8 Update Authorization procedure

When a session is modified, an update for a previous authorization of the session may be given to the PDF and possibly to the GGSN. Figure 16 below presents the “Update Authorization” procedure.



**Figure 16: Update Authorization for the session**

- 1) The AF is triggered to give updated service information to the PDF (e.g. as a result of the modification of the session at session control level).
- 2) The AF gives the updated service information to the PDF.
- 3) The PDF updates the authorization for the session. In case the session modification requires enhancing the reserved resources, the PDF may decide not to send an updated decision authorizing the enhanced QoS to the GGSN, but would rather wait for a new authorization request from the GGSN.
- 4) In case the session modification affects the authorized resources, the PDF sends a COPS DEC message to the GGSN to enforce authorization according to the session modification. The GGSN updates the authorization. If the QoS of the PDP context exceeds the updated authorized QoS and the UE does not modify the PDP context accordingly, the GGSN shall perform a network initiated PDP context modification to reduce the QoS to the authorized level. The GGSN sends a COPS RPT message back to the PDF.
- 5) The PDF sends an acknowledgement to the AF.

## CHANGE REQUEST

⌘ **23.207 CR 075** ⌘ rev **1** ⌘ Current version: **6.1.1** ⌘

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**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Service information		
<b>Source:</b>	⌘ SA2 (Nokia)		
<b>Work item code:</b>	⌘ QoS1	<b>Date:</b>	⌘ 16/02/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The description of the Gq data exchange was updated in TR 23.917 in the SA2#37; the corresponding update for TS 23.207 is needed as well.		
<b>Summary of change:</b>	⌘ Service information updated		
<b>Consequences if not approved:</b>	⌘		

<b>Clauses affected:</b>	⌘ 5.3a.2										
<b>Other specs affected:</b>	<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> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	⌘	X	⌘	X	⌘	X	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
⌘	X										
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⌘	X										
<b>Other comments:</b>	⌘										

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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.

## 5.3a.2 Information Exchanged via Gq interface

### Service information:

The AF provides the following service information to the PDF to be used as a basis for the service-based local policy decisions.

- a) Description of session: the AF may provide one or more of the following information when describing the session (the set of information that needs to be sent in different cases depends on a service for which the media authorisation is required):

- Application identifier: identifies the particular service that the session belongs to. This information may be used by the PDF to differentiate QoS for different application services. For example application identifier may be used as additional information together with the indication of the type of service information when QoS class for the bearer authorisation in Gq interface is decided. The application identifier may be used also to complete the QoS authorisation with application specific default settings in the PDF if the AF does not provide all or any of the following information.
- Information defining the media stream
  - Media stream Id (to uniquely identify the media stream within the session)
  - Information defining the IP flows of the media stream.
    - direction (bi-directional, uplink / downlink)
    - 5-tuple (source/destination address and port number, protocol Id)
    - indication of the maximum and/or mean bandwidth required
  - An indication of the requested type of service information per service-flow, e.g., conversational voice or video, streaming voice or video

~~— Information defining the media to which QoS must be applied~~

~~— An indication of the requested type of service handling per media, e.g., conversational voice or video, streaming voice or video~~

~~— AF service signaling message direction (originating or terminating side)~~

- b) Definition of whether PDF shall contact the AF at resource reservation during the session.

- c) Install Gating Policy: Definition of whether gating control is used or not in the session. If gating control is not used, the PDF opens the gates in the GGSN at the bearer authorisation.

### Authorisation token:

The PDF generates one or more Authorisation token(s) on request from the AF. The Authorization token contains the fully qualified domain name of the PDF and a reference in the PDF, which allows the PDF to uniquely identify the AF session.

### Charging correlation related information:

The AF and PDF may exchange charging correlation related information. The AF charging identifier (e.g. ICID in case of IMS), if available, shall be transferred from the AF to the PDF, which shall forward it to the GGSN. GPRS charging identifier, if available in the PDF, shall be transferred to the AF.

### Gate control indications:

The AF indicates when a media is to be enabled or disabled to pass through the access network. The indication contains information defining the media and its required status (enabled/disabled). The PDF opens or closes the gate in the GGSN based on this indication. The PDF shall respond with the result of the operation to the AF.

### Bearer reservation indication:

The PDF shall send bearer reservation indication to the AF to indicate that the bearer resources have been reserved, if the AF in the initial authorisation request had requested it.

**Bearer release indication:**

Information available at the PDF on the bearer resource release is forwarded to the AF. The indication may contain information about the reason of the release.

**Revoke authorisation command:**

The AF determines when all authorisations related to an authorization token and all related authorizations need to be removed e.g. due to the AF session release, and shall instruct the PDF to remove the resources previously authorised for the session. The revoke authorisation command may contain information about the reason of the revoking.