3GPP TSG CN Plenary Meeting #21   **NP-030338**
17th - 19th September 2003. Frankfurt, Germany.

Source:	TSG CN WG3
Title:	CRs on Rel-5 Work Item E2EQoS.
Agenda item:	8.5
Document for:	APPROVAL

Introduction:

This document contains **4** CRs on **Rel-5 Work Item E2EQoS,** including the corresponding mirror CRs (as required).

These CRs have been agreed by TSG CN WG3 and are forwarded to TSG CN Plenary meeting for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N3-030664	Handling of SIP 200 OK with inactive media	29.208	047	4	F	Rel-5	5.4.0
N3-030583	Handling of SIP CANCEL Request	29.208	045	1	F	Rel-5	5.4.0
N3-030655	Clarification on the use of the inactive attribute at the beginning of the call	29.208	036	2	F	Rel-5	5.4.0
N3-030628	Examples of deriving the Maximum Authorized parameters from the SDP parameters	29.208	041	2	F	Rel-5	5.4.0

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CHANGE REQUEST

⌘	**29.208** CR **045**	⌘rev	**1**	⌘	Current version:	**5.4.0**	⌘

*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 **X**

Title: ⌘	**Handling of SIP CANCEL Request**	
Source: ⌘	TSG_CN WG3 [Siemens]	
Work item code:⌘	E2EQoS	***Date:*** ⌘ 18/08/2003
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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:
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: ⌘	Handling of SIP CANCEL Request is not specified
Summary of change:⌘	CANCEL Request causes PDF to remove the authorisation for the media component(s) of this session
Consequences if not approved: ⌘	Lack in Documentation. Allowing PDP Contexts to remain open after CANCEL opens up doors for fraud.

Clauses affected: ⌘	6.3.1

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

Other comments: ⌘	

6.3.1   Mobile initiated session release / Network initiated session release

Figure 6.3.1 presents the "Revoke Authorization for UMTS and IP Resources" at upon Mobile initiated session release / Network initiated session release to both the Mobile Originating (MO) side and the Mobile Terminating (MT) side. The session release may be signalled by a SIP BYE message, by a SIP CANCEL request, or any SIP 3xx redirect response, or any 4xx, 5xx, or 6xx SIP final error response.

**Figure 6.3.1: Revoke authorization for GPRS and IP resources -
Mobile initiated session release / Network initiated session release
to both Mobile Originating (MO) and Mobile termination side**
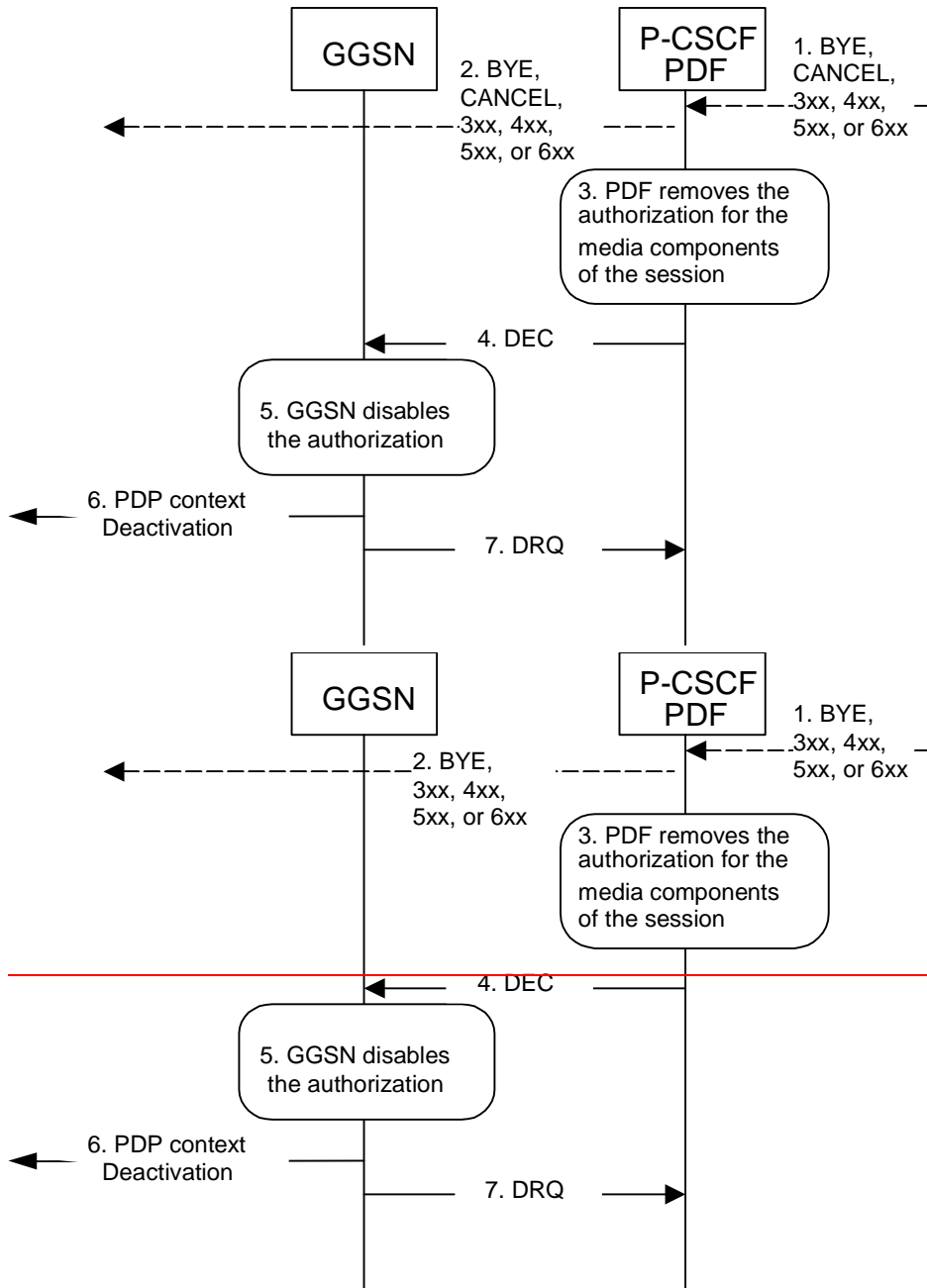
1. A SIP BYE message, a SIP CANCEL request, a SIP 3xx redirect response, or any 4xx, 5xx, or 6xx SIP final error response is received by the P-CSCF.
2. P-CSCF forwards the BYE message, or the SIP 3xx redirect response, the SIP CANCEL request, or any 4xx, 5xx, or 6xx SIP final error response.
3. PDF removes the authorisation for the media component(s) of this session, which it authorized previously.
4. PDF sends COPS DEC message(s) to the GGSN including client handle(s), which identifies the PDP context(s) to be deactivated.
5. GGSN receives the COPS DEC message, and disables the use of the authorized QoS resources.
6. GGSN initiates deactivation of the PDP context(s) used for the IP multimedia session, in case the UE has not done it before.
7. GGSN sends COPS DRQ message(s) back to the PDF.

3GPP TSG-CN WG3 Meeting #29
Sophia Antipolis, France. 25th - 29th August 2003.

N3-030628

CR-Form-v7

CHANGE REQUEST

⌘	**29.208 CR 041**	⌘**rev** **2** ⌘	Current version:	**5.4.0** ⌘

*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: ⌘	Examples of deriving the maximum authorized parameters.	
Source: ⌘	TSG_CN WG3 [Ericsson]	
Work item code: ⌘	E2eQoS	***Date:*** ⌘ 24/08/2003
Category: ⌘ **F**		***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	The rules and dynamics for deriving the Maximum Authorized QoS are complex. The purpose with this contribution is to make it easier to understand these rules. An informative annex is proposed with examples showing how the derivations are done from values of the SDP parameters to the corresponding values of the Maximum Authorized QoS parameters per flow identifiers and the Maximum Authorized QoS parameters per PDP context.
Summary of change: ⌘	An informative Annex X has been added which gives examples of how to derive the Maximum Authorized Qos parameters from the SDP parameters.
Consequences if not approved: ⌘	Because the rules and dynamics for deriving the Maximum Authorized QoS are complex there is a risk of misunderstanding and hence erroneous implementations.

Clauses affected: ⌘	A new informative Annex X.

	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.

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Start of amendedment

</div>

Annex X (informative): Examples of deriving the Maximum Authorized parameters from the SDP parameters

A.1   Example 1

The relevant SDP parameters (i.e. from which the Maximum Authorized IP QoS and Maximum UMTS QoS Parameters are derived) in the downlink direction are assigned the following values:

Table X.1.1: Values of the relevant SDP parameters in example 1.

```
v=0
o=ecsreid 3262464865 3262464868 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM01
i=Two unidirectional audio and 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
b=AS:128
b=RR:2300
b=RS:3000
a=sendonly
m=audio 49170 RTP/AVP 0
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
b=AS:64
a=sendonly
m=application  32416 udp wb
c=IN IP6 2001:0646:000A:03A7:0250:DAFF:FE0E:C6F2
b=AS:32
a=landscape
a=sendrecv
```

The IP flows of the session are identified by 5 flow identifiers (see 3GPP TS 29.207 [7] for the definition of a flow identifier):

- Flow identifier <1,1> identifies the video media IP flows downlink and flow identifier <1,2> identifies the RTCP IP flows uplink and downlink associated with the video media IP flows.

- Flow identifier <2,1> identifies the audio media IP flows downlink and flow identifier <2,2> identifies the RTCP IP flows uplink and downlink associated with the audio media IP flows.

- Flow identifier <3,1> identifies the application media IP flows uplink and downlink.

In the PDF, the Maximum Authorized IP QoS parameters per flow identifier are assigned the values, according to table 7.1.1.1, as shown in table X.1.2:

Table X.1.2: The values of the Maximum Authorized IP QoS parameters per flow identifier as calculated by the PDF.

	Flow Identifier				
	<1,1>	<1,2>	<2,1>	<2,2>	<3,1>
Max_DR_DL (kbps)	128	5.3	64	3.2	32
Max_DR_UL (kbps)	0	5.3	0	3.2	32
MaxClass	B	B	B	B	A

In the UE, the Maximum Authorized UMTS QoS parameters per flow identifier are assigned the values, according to table 7.2.2.1, as shown in table X.1.3:

Table X.1.3: The values of the Maximum Authorized UMTS QoS parameters per flow identifier as calculated by the UE.

	Flow Identifier				
	<1,1>	<1,2>	<2,1>	<2,2>	<3,1>
Max_BW_DL (kbps)	128	5.3	64	3.2	32
Max_BW_UL (kbps)	0	5.3	0	3.2	32
MaxTrafficClass	streaming	streaming	streaming	streaming	conversational

Each pack of IP flow(s) described by a media component must all be carried on the same PDP context. If the UE decides to put each media IP flow(s) and its associated RTCP IP flow on dedicated PDP contexts (three PDP contexts are needed!), then the UE will calculate the values of the Maximum Authorized Bandwidths per PDP context and the Maximum Traffic Class per PDP context, according to table 7.2.2.2, as shown in table X.1.4:

Table X.1.4: The values of the Maximum Authorized UMTS QoS parameters per PDP Context as calculated by the UE.

	PDP context #		
	1	2	3
Maximum Authorized Bandwidth DL (kbps)	133.3	67.2	32
Maximum Authorized Bandwidth UL (kbps)	5.3	3.2	32
Maximum Authorized Traffic Class	streaming	streaming	conversational

For each of the three PDP context activation requests the GGSN will assign a Client Handle to the PDP context activation request and send an Authorization Request message to the PDF containing the Binding Information received in the PDP context activation request message. The PDF calculates the values of the Maximum Authorized Data Rate per Client Handle and a Maximum Authorized QoS Class per Client Handle, according to table 7.1.1.2, as shown in table X.1.5:

Table X.1.5: The values of the Maximum Authorized IP QoS parameters per Client Handle as calculated by the PDF.

	Client Handle corresponding to PDP context #		
	1	2	3
Maximum Authorized_Data Rate DL (kbps)	133.3	67.2	32
Maximum Authorized_Data Rate UL (kbps)	5.3	3.2	32
Maximum Authorized_QoS Class	B	B	A

For each of the three Client Handles the PDF sends these Maximum Authorized IP QoS parameters per Client Handle in an Authorization Decision message to the GGSN. The GGSN derives the values of the Maximum Authorized Bandwidths per PDP context and the Maximum Traffic Class per PDP context, according to table 7.1.2, as shown in table X.1.6:

Table X.1.6: The values of the Maximum Authorized UMTS QoS parameters per PDP context as calculated by the GGSN.

	PDP context #		
	1	2	3
Maximum Authorized_Bandwidth DL (kbps)	133.3	67.2	32
Maximum Authorized_Bandwidth UL (kbps)	5.3	3.2	32
Maximum Authorized_Traffic Class	streaming	streaming	conversational

A.2 Example 2

The relevant SDP parameters in the downlink direction are assigned the following values:

Table X.2.1: Values of the relevant SDP parameters in example 2.

```
v=0
o=ecsreid 3262464321 3262464325 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM02
i=Two unidirectional audio streams 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
b=AS:64
b=RR:2000
b=RS:1000
a=sendonly
```

The IP flows of the session are identified by 4 flow identifiers (see 3GPP TS 29.207 [7] for the definition of a flow identifier):

- Flow identifier <1,1> identifies the audio media IP flows downlink and flow identifier <1,2> identifies the RTCP IP flows uplink and downlink associated with these audio media IP flows.

- Flow identifier <1,3> identifies the other audio media IP flows downlink and flow identifier <1,4> identifies the RTCP IP flows uplink and downlink associated with these audio media IP flows.

The PDF calculates the values of the Maximum Authorized IP QoS parameters per flow identifier, according to table 7.1.1.1, as shown in table X.2.2:

Table X.2.2: The values of the Maximum Authorized IP QoS parameters per flow identifier as calculated by the PDF.

	Flow Identifier			
	<1,1>	<1,2>	<1,3>	<1,4>
Max_DR_DL (kbps)	64	3.0	64	3.0
Max_DR_UL (kbps)	0	3.0	0	3.0
MaxClass	B	B	B	B

The UE calculates the values of the Maximum Authorized UMTS QoS parameters per flow identifier, according to table 7.2.2.1, as shown in table X.2.3:

Table X.2.3: The values of the Maximum Authorized UMTS QoS parameters per flow identifier as calculated by the UE.

	Flow Identifier			
	<1,1>	<1,2>	<1,3>	<1,4>
Max_BW_DL (kbps)	64	3.0	64	3.0
Max_BW_UL (kbps)	0	3.0	0	3.0
MaxTrafficClass	streaming	streaming	streaming	streaming

As all IP flows are described by the same media component the UE must let all IP flows be carried on one PDP context. The UE will calculate the values of the Maximum Authorized Bandwidths per PDP Context and the Maximum Traffic Class per PDP Context, according to table 7.2.2.2, as shown in table X.2.4:

Table X.2.4: The values of the Maximum Authorized UMTS QoS parameters per PDP Context as calculated by the UE.

	PDP context #
	1
Maximum Authorized Bandwidth DL (kbps)	134.0
Maximum Authorized Bandwidth UL (kbps)	6.0
Maximum Authorized Traffic Class	streaming

The PDF calculates the values of the Maximum Authorized Data Rate per Client Handle and the Maximum Authorized QoS Class per Client Handle, according to table 7.1.1.2, as shown in table X.2.5:

Table X.2.5: The values of the Maximum Authorized IP QoS parameters per Client Handle as calculated by the PDF.

	Client Handle corresponding to PDP context #
	1
Maximum Authorized_Data Rate DL　(kbps)	134.0
Maximum Authorized_Data Rate UL　(kbps)	6.0
Maximum Authorized_QoS Class	B

The GGSN derives the values of the Maximum Authorized Bandwidths per PDP context and the Traffic Class per PDP context, according to table 7.1.2, as shown in table X.2.6:

Table X.2.6: The values of the Maximum Authorized UMTS QoS parameters per PDP context as calculated by the GGSN.

	PDP context #
	1
Maximum Authorized_Bandwidth DL　(kbps)	134.0
Maximum Authorized_Bandwidth UL　(kbps)	6.0
Maximum Authorized_Traffic Class	streaming

End of modification

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CHANGE REQUEST

⌘	**29.208 CR 036**	⌘rev **2** ⌘	Current version: **5.4.0** ⌘

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*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 **X**

Title: ⌘	Clarification on the procedures for placing media on hold	
Source: ⌘	TSG_CN WG3 [Nortel Networks, Ericsson, Siemens]	
Work item code:⌘	E2EQoS-IW	***Date:*** ⌘ 25/08/2003
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	In TS 29.207 and TS 29.208, nothing precludes placing media on hold during session establishment, this meaning that the gate will remain closed at the authorization time. The media starts in an "on hold" mode. Although TS 29.207 and TS 29.208 implicitly allow for the media to be placed on hold during session establishment, this is not explicitly said anywhere.

In SIP/SDP, setting a media stream on hold is not always done by setting it in "inactive" state, but it depends on the previous conditions of the stream:
- If the stream was in "sendrecv" mode, the stream is placed on hold by setting it in "sendonly" state.
- If the stream was in "recvonly" mode, the stream is placed on hold by setting it in "inactive" state.
These procedures are normatively described in RFC 3264

Also, by explicitly making such clarification we avoid misinterpretations and therefore backwards compatibility problems with the preferred interworking solution flows in R6 |
Summary of change:⌘	In 6.1 it is clarified that media may be placed on hold both during session establishment and at a later stage. 6.1, 6.2 and 6.2.1 are corrected to reflect how media are placed on hold according to RFC 3264.
Consequences if not approved: ⌘	Misalignment with RFC 3264 reparding the procedures for placing media on hold. Not explicitly stated when media may be placed on hold.
Clauses affected: ⌘	6.1, 6.2, 6.2.1

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

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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

********** FIRST MODIFIED SECTION ***********

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 24.228: "Signalling flows for the IP multimedia call control based on SIP and SDP; Stage 3".

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

[4]   3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[5]   3GPP TS 26.234: "End-to-end transparent streaming service; Protocols and codecs".

[6]   3GPP TS 26.236: "Packet switched conversational multimedia applications; Transport protocols".

[7]   3GPP TS 29.207: "Policy control over Go interface".

[8]   3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".

[xx]   IETF RFC 3264: "An Offer/Answer Model with the Session Description Protocol (SDP)"

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

6 Other flows over Go interface

6.1 Approval of QoS commit

Through Approval of QoS Commit the PDF makes a final decision to enable the allocated QoS resource for the authorized media stream(s) if the QoS resources are not enabled at the time they are authorized by the PDF or if the authorized media stream previously placed on hold is resumed, i.e. the media stream that was ~~previously inactive~~ placed on hold at the time of the resource authorization or at a later stage is reactivated (with SDP direction sendrecv, sendonly, recvonly or none direction).

The Approval of QoS Commit procedure is triggered by the P-CSCF receiving a 200 OK message.
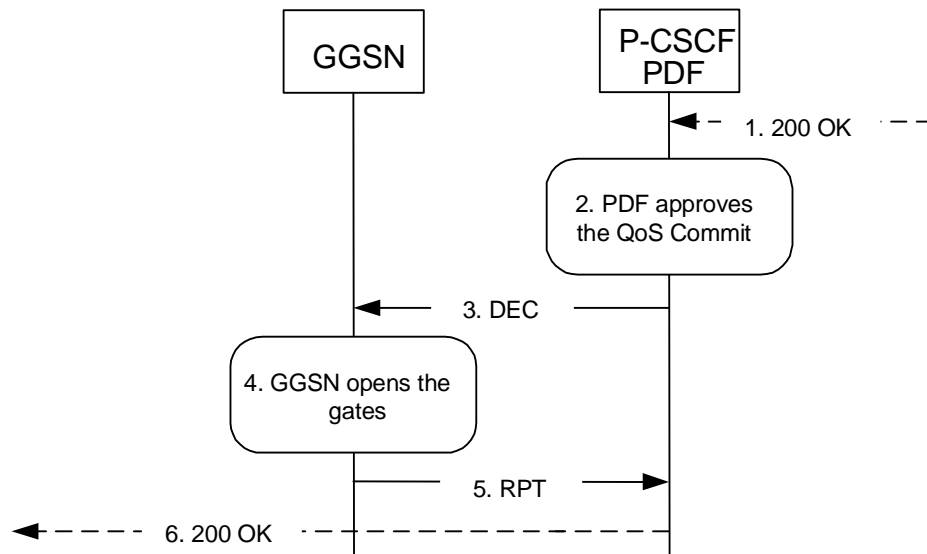
1.   P-CSCF receives the 200 OK message.
2.   PDF approves the QoS Commit.
3.   PDF sends COPS DEC message(s) to the GGSN to open the 'gates' e.g. enable the use of the authorised QoS resources.
4.   GGSN receives the COPS DEC message(s) and opens the 'gates' e.g. enables the use of the authorised QoS resources.
5.   GGSN sends COPS RPT message(s) back to the PDF.
6.   P-CSCF forwards the 200 OK message.

**Figure 6.1: Approval of QoS Commit to both the Mobile Originating (MO) side
and the Mobile Terminating (MT) side**

6.2   Removal of QoS commit

The "Removal of QoS commit" procedure is used e.g. when a media component of a session is put on hold. (e.g. in case of a media re-negotiation or call hold). The PDF decision of "Removal of QoS commit " shall be sent as a separate decision to the GGSN corresponding to the previous "Authorize QoS Resources" request.

6.2.1   Removal of QoS commit at ~~Session~~ Media on Hold

Media is placed on hold as specified in RFC 3264 [xx].

If a bidectional media component is placed on hold by making it unidirectional, the QoS Commit shall only be removed in the deactivated direction.

Figure 6.2.1 presents the "Removal of QoS commit" procedure at ~~session~~ media on hold to both the Mobile Originating (MO) side and the Mobile Terminating (MT) side.
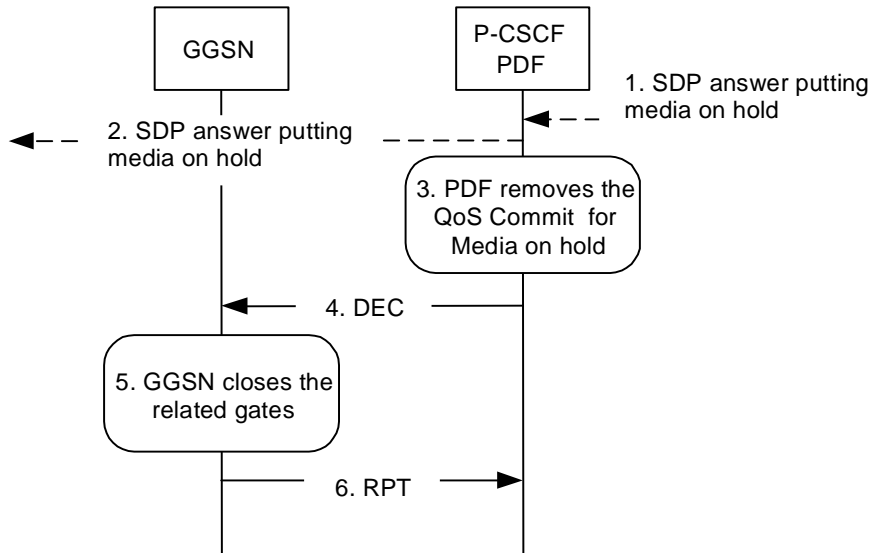
1.   P-CSCF receives an SDP answer putting media on hold within a SIP message i.e. the media is set to
       "inactive".
2.   P-CSCF forwards an SDP answer putting media on hold within a SIP message.
3.   PDF removes the QoS commit for the media on hold.
4.   PDF sends COPS DEC message(s) to the GGSN to close the related 'gates'.
5.   GGSN receives the COPS DEC message(s), closes the 'gates'.
6.   GGSN sends COPS RPT message(s) back to the PDF.

**Figure 6.2.1: Removal of QoS commit at Session Media on Hold to both the Mobile Originating (MO)
side
and the Mobile Terminating (MT) side**

***********   END OF MODIFICATIONS ************

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CHANGE REQUEST

⌘	**29.208** CR **047**	⌘**rev**	**4**	⌘	Current version:	**5.4.0**	⌘

*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 **X**

Title: ⌘	**Handling of SIP 200 OK with inactive media**	
Source: ⌘	Siemens	
Work item code: ⌘	E2EQoS	***Date:*** ⌘ 18/08/2003
Category: ⌘ **F**		***Release:*** ⌘ Rel-5

Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
F *(correction)*	2 *(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	R96 *(Release 1996)*
B *(addition of feature),*	R97 *(Release 1997)*
C *(functional modification of feature)*	R98 *(Release 1998)*
D *(editorial modification)*	R99 *(Release 1999)*
Detailed explanations of the above categories can	Rel-4 *(Release 4)*
be found in 3GPP TR 21.900.	Rel-5 *(Release 5)*
	Rel-6 *(Release 6)*

Reason for change: ⌘	According to Section 6.2.1, QoS Commit shall be removed for an SDP answer putting media on hold (which may be transported in a 200 OK). However, Section 6.1 says that Approval of QoS Commit is applicable for any 200 OK. Thus, the 200 OK may trigger an Approval and Removal of QoS Commit at the same time.

Not all 200 OK messages shall trigger the procedure, e.g. no 200 OK (PRACK) and no 200 OK (UPDATE in early dialogue) |
| ***Summary of change:*** ⌘ | Approval of QoS commit is not applicable for deactivated media IP flows. Approval of QoS Commit shall onle be triggered by 200 OK response to INVITE and UPDATE in confirmed dialogue. |
| ***Consequences if not approved:*** ⌘ | Specification is inconsistent. |

Clauses affected: ⌘	

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

|	
Other comments: ⌘	The suggestion is compatible with the modified Callflow Solution of TR 29.962, which SA2 agreed to use for Rel.6.

6.1　　Approval of QoS commit

Through Approval of QoS Commit the PDF makes a final decision to enable the allocated QoS resource for the authorized media stream(s) if the QoS resources are not enable at the time they are authorized by the PDF or if the authorized media stream previously placed on hold is resumed i.e. the media stream that was previously inactive is reactivated (with SDP direction sendrecv, sendonly, recvonly or none direction).

The Approval of QoS Commit procedure is triggered by the P-CSCF receiving a 200 OK ~~message.~~ response to an INVITE request or a 200 OK response to an UPDATE request within a confirmed dialogue. When receiving those 200 OK responses, the PDF shall take the SDP direction attribute in the latest received SDP (either within the 200 OK or a previous SIP message) into account when deciding, which gates shall be opened:

- For a unidirectional SDP media component, the Approval of QoS Commit procedure shall not be triggered for the possible media IP flows in the opposite direction.

- For an inactive SDP media component, the Approval of QoS Commit procedure shall not be triggered for the media IP flows.

Figure 6.1 is applicable to the Mobile Originating (MO) side and the Mobile Terminating (MT) side.
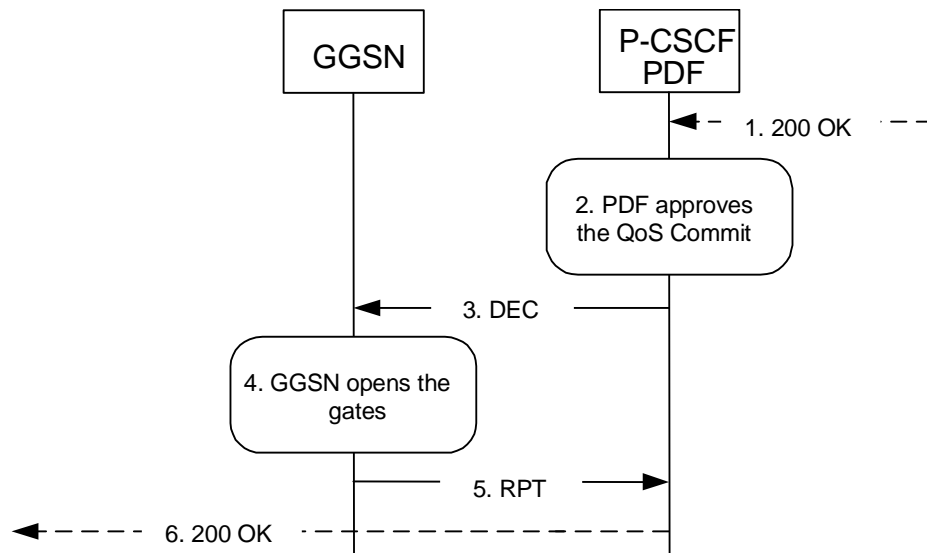
1.　　　P-CSCF receives the 200 OK message complying with the conditions specified in the paragraphs above.
2.　　　PDF approves the QoS Commit.
3.　　　PDF sends COPS DEC message(s) to the GGSN to open the 'gates' e.g. enable the use of the authorised QoS resources.
4.　　　GGSN receives the COPS DEC message(s) and opens the 'gates' e.g. enables the use of the authorised QoS resources.
5.　　　GGSN sends COPS RPT message(s) back to the PDF.
6.　　　P-CSCF forwards the 200 OK message.

**Figure 6.1: Approval of QoS Commit to both the Mobile Originating (MO) side
and the Mobile Terminating (MT) side**