Source: **TSG CN WG3**

Title: **CRs to Rel-6 on Work Item "TEI"**

Agenda item: **9.21**

Document for: **APPROVAL**

Introduction:

This document contains 1 CRs to Rel-6 on Work Item "TEI" 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
N3-040412	27.060	089	2	B	Multiple IMS sessions using the same PDP context	Rel-6	5.6.0
N3-040303	29.207	129		B	Multiple IMS sessions using the same PDP context	Rel-6	5.7.0
N3-040304	29.208	069		B	Multiple IMS sessions using the same PDP context	Rel-6	5.7.0

CR-Form-v7

CHANGE REQUEST

| ⌘ | **29.207** CR | **129** | ⌘**rev** | **-** | ⌘ | Current version: | **5.7.0** | ⌘ |

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

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

Title:	⌘	Multiple IMS sessions using the same PDP context
Source:	⌘	TSG_CN WG3

Work item code:⌘	TEI-6		**Date:** ⌘	27/04/2004

Category:	⌘	**B**		**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:
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:	⌘	TSG-SA2 has added in stage 2 specifications the multiplexing of flows from different IMS sessions in the same PDP context. Stage 3 specifications shall be aligned with stage 2.
Summary of change:	⌘	A limitation to multiplex different sessions in the same PDP context has been temoved. Handling of binding information for multiplexed sessions has been added. The content of the authorization decision for a multiplexed PDP context has been defined.
Consequences if not approved:	⌘	The related stage 3 description of a new feature is missing.

Clauses affected:	⌘	4.1, 4.3.2, 5.1.4 and 5.2.1

		Y	**N**			
Other specs affected:	⌘	**X**		Other core specifications	⌘	27.060, 29.208
			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.

4   Go interface

4.1   Overview

The Go interface allows service-based local policy information to be "pushed" to or requested by the Policy Enforcement Point (PEP) in the GGSN from a Policy Decision Function (PDF). As defined in the stage 2 specifications 3GPP TS 23.207 [3], this information is used by the GGSN for:

-   GPRS bearer authorisation;

-   Charging correlation;

-   Policy based "gating" function in GGSN;

The Go interface uses IP flow based policies.

The Common Open Policy Service (COPS) protocol has been developed as a protocol for use between a policy server and a network device, as described in RFC 2748 [7].

In addition, COPS for Provisioning extensions have been developed as described in RFC 3084 [8] with RFC 3159 [9] describing a structure for specifying policy information that can then be transmitted to a network device for the purpose of configuring policy at that device. The model underlying this structure is one of well-defined provisioning classes and instances of these classes residing in a virtual information store called the Policy Information Base (PIB).

The Go interface shall conform to the IETF COPS (RFC 2748 [7]) and the extensions of COPS-PR (RFC 3084 [8]). For the purpose of exchanging the required specific Go information, a 3GPP Go COPS-PR Policy Information Base (PIB) is defined in the present document.

COPS Usage for Policy Provisioning (COPS-PR) is independent of the type of policy being provisioned (QoS, Security, etc.). In the present document, COPS-PR is used to communicate service-based local policy information between PDF and GGSN. COPS-PR can be extended to provide per-flow policy control along with a 3GPP Go Policy Information Base (PIB). The 3GPP Go PIB may inherit part of the data object definitions from other PIBs and MIBs defined in the IETF.

Signalling flows related to the Go interface are specified in 3GPP TS 29.208 [18].

The minimum functionalities that the Go interface shall cover are introduced below.

1. Media Authorisation request from GGSN:

   The GGSN receives the binding information during the activation of a (Secondary) PDP context or during the modification of an existing PDP context that has been previously authorized by the PDF. To authorise the PDP context activation, the GGSN shall send a media authorisation request to the PDF. To authorise the PDP context modification, the GGSN shall send a media authorisation request to the PDF when the requested QoS exceeds the authorised QoS or new binding information is received.

   This authorisation request shall include the following information:

   -   Binding information:

       The binding information is used by the GGSN to identify the correct PDF and subsequently request service-based local policy information from the PDF. The GGSN may receive one or more sets of the binding information during an activation or modification of a PDP context. Each set of binding information consists of:

       -   One Authorisation token;

       -   One or more Flow identifiers within the session.

   ~~It is assumed that only one set of binding information is carried within a PDP context in this Release.~~

2. Media authorisation decision from PDF:

    The media authorisation information sent by the PDF to the GGSN, contains at a minimum the following information:

    -   Decision on the binding information.

    The PDF shall respond with an authorisation decision for the binding information. The authorisation decision shall identify that the binding information is validated with an ongoing SIP session. Additionally, the PDF shall verify if the IP flows of the multiple media components are correctly assigned to the PDP Context. If validated, the PDF shall also communicate the following media authorisation details to the GGSN:

    -   "Authorised QoS".

        This information is used by the GGSN to authorise the media resources according to the service-based local policy and the requested bearer QoS.

        The "Authorised QoS" signalled over the Go interface is based on the SDP requirements signalled and agreed previously within SIP signalling for this session.

        The "Authorised QoS" specifies the maximum QoS that is authorised for a PDP context for that specific binding information. In case of an aggregation of multiple media components within one PDP context, the combination of the "Authorised QoS" information of the individual IP flows of the media components is provided as the "Authorised QoS" for the bearer.

        The "Authorised QoS" contains the following information:

        -   QoS class:

            The QoS class information represents the highest class that can be used for the media component. It is derived from the SDP media description. The QoS class within the "Authorized QoS" information for the bearer is determined from the QoS class values of the individual IP flows of these media components identified in the binding information.

        -   Data rate:

            The Data rate information is derived from the SDP bandwidth parameters. The Data rate shall include all the overhead coming from the IP-layer and the layers above, e.g. UDP, RTP or RTCP. If multiple codecs are agreed to be used in a session, the authorized data rate is set according to the codec requiring the highest bandwidth, meaning that terminals may under use the authorized data rate when choosing to use another agreed codec. The Data rate within the "Authorized QoS" information for the bearer is determined from the data rate values of the individual IP flows identified in the binding information.

    -   Packet Classifier.

        The packet classifier for media components is based on the IP-address and port number information in the SDP and shall allow for all IP flows associated with the SDP media component description.

3. Charging correlation:

    The PDF shall send the ICID (see 3GPP TS 24.229 [14]) provided by the P-CSCF as part of the authorisation decision. The GGSN shall send the GCID (see 3GPP TS 29.060 [20]) of the PDP Context and the GGSN address to the PDF as part of the authorisation report.

4. Approval of QoS Commit / Removal of QoS Commit / Revoke Authorisation for GPRS and IP resources:

    The PDF controls media components and may revoke resources at any time. Approval of QoS Commit / Removal of QoS Commit / Revoke Authorisation for GPRS and IP resources is communicated by the PDF to the GGSN.

5. Indication of PDP Context Release / Modification to/from 0 kbit/s:

    The GGSN informs the PDF of bearer changes related to the authorised resources for the IMS session in the following cases:

- Loss of radio contact (modification to/from 0 kbit/s for conversational and streaming class);

- Deactivation of PDP context.

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 P-CSCF. 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 P-CSCF.

    The PDF shall use the binding information to determine the IMS session(s) and the set of IP flows. Multiple sets of binding information and multiple IMS sessions may be involved, if flows from separate 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 at session modifications which change 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 P-CSCF 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 P-CSCF about this modification event.

- Generation of authorisation token:

    During the session set-up the PDF generates an authorisation token for the IMS session.

- Mapping SDP parameters to "Authorized QoS" parameters:

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

- Charging identifiers exchange:

  The PDF shall send the ICID provided by the P-CSCF as part of the initial authorisation decision of all the bearer authorization requests that correspond to the respective SIP session.

  When the PDF receives the GCID together with the GGSN address from the GGSN, it shall forward this information to the P-CSCF to ensure charging correlation.

4.3.2.2 Initialisation and maintenance

The PDF shall comply to the procedures described in RFC 2748 [7] for the initialisation and maintenance of the COPS protocol over the Go interface.

4.3.2.3 Binding mechanism handling

The binding information is used by the GGSN to identify the correct PDF and subsequently request service-based local policy information from the PDF. Each set of binding information consists of an authorisation token and one or more flow identifier(s).

During the session set-up the PDF generates an Authorisation Token for the IMS session as described in RFC 3313 [22]. The Authorisation token shall be sent to the P-CSCF which forwards it to the UE in the SIP signalling. The PDF shall allocate its PDF identifier as part of the Authorization Token. This identifier shall be in the format of a fully qualified domain name.

The PDF receives the binding information and a Client Handle as part of a REQ from the GGSN. The PDF shall store the Client Handle for each flow identifier identified by the binding information for subsequent message exchanges.

The authorisation token is applied by the PDF to identify the IMS session. If flows from separate sessions are multiplexed in the same PDP context, there are more than one authorization tokens, and the PDF identifies one IMS session per each token. If no IMS session can be found for an authorisation token, or if the authorization token for the Client Handle has been modified, or if the PDF is otherwise unable to authorise the binding information, the PDF shall send a COPS decision message carrying both an INSTALL and REMOVE decision. The INSTALL decision shall identify an authorisation failure to the GGSN, and may include further details identifying the cause. The REMOVE decision shall subsequently remove this state from the GGSN. For an initial authorisation, the PDF shall then initiate a remove for the authorisation request.

For a valid authorisation token the flow identifier(s) is used to select the available information on the IP flows of this IMS session. The PDF sends the available authorisation information back to the GGSN. If there are more than one authorization tokens per client handle, the authorization information comprises an aggregate of the information of all related flows. If the PDF has already communicated authorisation for the same authorisation token and flow identifier(s) to this (or another) GGSN on this IMS session, then the previous authorisation shall be revoked, and this revocation shall be communicated to the appropriate GGSN.

If the binding information consists of more than one flow identifier, the PDF shall also verify that the media components identified by the flow identifiers are allowed to be transferred in the same PDP context. If any of these media components was mandated to be carried in a separate PDP Context, the PDF shall send a COPS decision message carrying both an INSTALL and REMOVE decision. The INSTALL decision shall identify an authorisation failure to the GGSN, and may include further details identifying the cause. The REMOVE decision shall subsequently remove this state from the GGSN. For an initial authorisation, the PDF shall then initiate a remove for the authorisation request.

For a valid binding information consisting of more than one flow identifier, the information sent back to the GGSN shall include the aggregated QoS for all the IP flows and suitable packet filter(s) for these IP flows. If there are more than one sets of binding information per client handle, the authorization information comprises an aggregate of the information of all related flows. Each flow identifier within the binding information can identify one or more IP flows of a single media component.

5   Policy control procedures

5.1.4   PDP context deactivation

The GGSN is responsible for notifying the PDF when a procedure of a PDP context deactivation is performed. In case of a PDP context deactivation, the GGSN shall inform the PDF of the bearer release related to the SIP session(s) by sending a COPS Delete Request State (DRQ) message.

When a revoke authorisation procedure is performed, the GGSN receives a decision message from the PDF for disabling the use of the "Authorised QoS" resources and deactivation of the PDP context associated with the binding information. The GGSN shall disable the use of the "Authorized QoS" resources. The GGSN shall initiate deactivation of the PDP context in case that the UE has not performed it yet.

5.2   PDF

5.2.1   SBLP decisions

5.2.1.1   SBLP authorisation decision

The information needed for the PDF to perform media authorization is passed by the P-CSCF upon receiving a SIP message that contains SDP. The SDP contains sufficient information about the session, such as the end-points' IP address and port numbers and bandwidth requirements.

All media components in the SDP are authorised. The media components contain one or more IP flows each represented by a flow identifier. The definition of flow identifier is in subclause 3.1. The P-CSCF shall send policy set-up information to the PDF upon every SIP message that includes an SDP payload. This ensures that the PDF passes proper information to perform media authorization for all possible IMS session set-up scenarios. The policy set-up information provided by the P-CSCF to the PDF for each media component shall contain the following:

-    Destination IP address;

-    Destination port number;

-    Transport Protocol id;

-    Media direction information;

-    Direction of the source (originating or terminating side);

-    Indication of the group that the media component belongs to;

-    Media type information;

-    Bandwidth parameters;

-    Indication of forking/non-forking.

Additionally, upon the P-CSCF receiving the ICID in SIP signalling, it shall send the ICID to the PDF.

The PDF stores the authorised policy information, and generates an Authorisation Token to identify this decision. The Authorisation Token is passed back to the P-CSCF for inclusion in the SIP signalling back to the UE.

The Authorisation Token is in the form of a Session Authorisation Data Policy Element as described in RFC 3520 [11]. The PDF shall include an AUTH_ENT_ID attribute containing the Fully Qualified Domain Name of the PDF and the SESSION_ID attribute.

Upon receiving the bearer authorization request from the GGSN, the PDF shall authorize the request according to the stored service based local policy information for the session(s) identified by the binding information in the request.

- Decision on the binding information:

  - The authorisation shall contain the decision on verifying the binding information. The PDF shall identify whether each set of the binding information indeed corresponds to an initiated SIP session. If the corresponding SIP session cannot be found for a set of binding information or the binding information contains invalid flow identifier(s), or the authorization token(s) has changed in an authorization modification request, the PDF shall enforce the rejection of this PDP context request by sending an INSTALL and REMOVE decision to the GGSN. The reason for the rejection is indicated by the INSTALL decision with the "noCorrespondingSession" reason in the Authorisation Request Failure Decision. If the PDF is otherwise unable to authorise the binding information, the INSTALL decision shall identify a general authorisation failure with the "authorisationFailure" of the request reason in the Authorisation Request Failure Decision.

  - The authorization shall also contain the decision on the list of flow identifiers contained in the bearer authorisation request sent by the GGSN representing the IP flows of the media components intended to be carried in the same PDP Context. This decision shall verify that these IP flow(s) are indeed allowed to be carried in the same PDP Context. The PDF shall make this decision by comparing the list of flow identifiers contained in the bearer authorization request received from the GGSN to the media component grouping indication information received from the P-CSCF.

  - In case the UE violates the IMS level indication, and attempts to set up IP flows of multiple IMS media components in a single PDP context despite of an indication that mandated separate PDP contexts, the PDF shall enforce the rejection of this PDP context request by sending an INSTALL and REMOVE decision to the GGSN. The reason for the rejection is indicated by the INSTALL decision with the "invalidBundling" reason in the Authorisation Request Failure Decision.

  - If the sets of binding information and the list of flow identifiers are successfully authorised (verified) as per the means described above, the PDF shall also communicate the authorisation details to the GGSN.

  - If the PDF has already communicated authorisation for the same authorisation token(s) and flow identifier(s) to this (or another) GGSN, then the previous authorisation shall be revoked, and this revocation shall be communicated to the GGSN.

  - The authorisation details contain the "Authorised QoS" and the packet classifier(s) of the IP flows. In case of an aggregation of multiple media components within one PDP context, the combination of the "Authorised QoS" information of the individual IP flows of the media components is provided as the "Authorised QoS".

  - Based on the media direction information and the direction of the source provided by the P-CSCF, the PDF shall define the direction (upstream or downstream) of the "Authorised QoS" and the packet classifier(s).

- Packet classifier(s):

  - The uplink packet classifier shall be formed as follows: The destination address and port number shall be taken from the connection information parameter of the SDP sent by the P-CSCF in downlink direction, while the source IP address may be formed from the address present in the SDP received by the P-CSCF in uplink direction (taking into account only the 64 bit prefix of the address), and the source port number shall be wildcarded. For example, assuming UE A sends an SDP to UE B, the PDF of UE B uses the address present in this SDP for the destination address of UE B's uplink packet classifier, while the PDF of the UE A uses the 64 bit prefix of the same address for the source address of UE A's uplink packet classifier. If the source address is not formed from the 64 bit prefix, the source address shall be wildcarded.

  - The downlink packet classifier shall be formed as follows: The destination address and port number shall be taken from the connection information parameter of the SDP received by the P-CSCF in uplink direction, while the source IP address may be formed (in order to reduce the possibilities of bearer misuse) from the destination address in the SDP sent by the P-CSCF in downlink direction (taking into account only the 64 bit prefix of the address) and the source port number shall be wildcarded. For example, assuming UE A sends an SDP to UE B, the PDF of UE a uses the address present in this SDP for the destination address of UE A's downlink packet classifier, while the PDF of UE B uses the 64 bit prefix of the same address for the source address of UE B's downlink packet classifier. If the source address is not formed from the 64 bit prefix, the source address shall be wildcarded.

- The PDF shall send the destination address and the destination port number for each IP flow associated with the media component.

- "Authorized QoS":

  - The "Authorised QoS" information (consisting of maximum QoS Class and Data Rate) for IP flows of a media component is extracted from the media type information and bandwidth parameter(s) of the SDP. The PDF shall map the media type information into a QoS Class which is the highest class that can be used for the media. The PDF shall use an equal QoS Class for both the uplink and the downlink directions when both directions are used. As an example, the audio media type shall be mapped into QoS class A.

  - The PDF shall derive the Data Rate value for the media IP flow (s) from the "b=AS" SDP parameter, as detailed in TS 29.208 [18]. For the possibly associated RTCP IP flows, the PDF shall use the SDP "b=AS", "b=RR" and "b=RS" parameters, if present, as specified in 29.208[18]. The "b=AS", "b=RR" and "b=RS" parameters in the SDP contain all the overhead coming from the IP-layer and the layers above e.g. UDP, RTP or RTCP.

  - For non-real-time bearers the Data rate value shall be considered as the maximum value of the 'Maximum bitrate' parameter.

  - In case of an aggregation of multiple media components within one PDP context, the PDF shall provide the "Authorised QoS" for the bearer as the combination of the "Authorised QoS" information of the individual IP flows of the media components. The QoS Class in the "Authorised QoS" for the bearer shall contain the highest QoS class amongst the ones applied for the individual media components IP flows and indicates the highest UMTS traffic class that can be applied to the PDP context.

  - The Data Rate of the "Authorised QoS" for the bearer shall be the sum of the Data Rate values of the individual media IP flows of components and it is used as the maximum Data Rate value for the PDP context.

  - The detailed rules for calculating the "Authorized QoS" are specified in 3GPP TS 29.208 [18].

The PDF may include the gate enabling command as part of the authorisation decision, for instance to enable early media. Alternatively, the PDF may provide a separate decision for opening the gate.

The PDF shall send the IMS charging identifier provided by the P-CSCF as part of the authorisation decision to the GGSN.

Upon receiving the modified SDP information from the P-CSCF, the PDF shall update the media authorization information for the session. The PDF may push this updated authorisation information to the GGSN. Under certain condition e.g. revoke of authorization, the PDF shall push the updated policy decision to the GGSN. If there are IP flows of several sessions under the same client handle, the PDF shall include the aggregate authorization information of all of these flows in the push decision.

5.2.1.3   SBLP revoke decision

Upon release of the only or last SIP session of a given client handle (PDP context),release the PDF shall send a revoke authorisation decision to the GGSN after an operator specific time. The revoke authorisation decision shall be sent for each handle (PDP context) related to the session as a separate decision to the GGSN corresponding to the previous SBLP authorisation decision.

The timer for a pending session release shall be terminated if the PDF receives an indication on the termination of all PDP context(s) related to the released session.

Additionally, when a media component which is bound to a PDP context is removed from a SIP session and the UE has not performed the corresponding modification or deactivation of the PDP context within an operator specific time the PDF shall revoke the authorisation for the set of IP flows of the media components on that PDP context.

The timer for a pending media component removal shall be terminated if the PDF receives either a new authorisation request with the same handle where the IP flows of that media component has been removed, or an indication of the termination of the PDP context.

NOTE: The values of the timers for session termination and media component removal might be different, e.g. to allow for some more time for the required modification of the PDP context.

If the PDF receives a request from a GGSN for the same authorisation token and flow identifier(s) that this (or another) GGSN was already communicated authorisation, then the previous authorisation shall be revoked, and this revocation shall be communicated to the GGSN.

5.2.1.4 SBLP gate decision

The PDF may send a gate decision during the session set-up or whenever the status of a media component changes during the session (e.g. the media IP flow(s) of a media component is put on hold or resumed, or a media component is removed), or when a session is released and the related IP flows are removed from a PDP context that multiplexes IP flows from several sessions. The PDF shall not send a gate decision to the GGSN before it has sent the initial authorisation decision. If the initial authorisation decision has already been sent, the PDF may send a gate decision to the GGSN to modify the status of one or several gate(s) on the user plane. The gate decision shall only contain the gate(s) for which the status was changed compared to the last authorisation or gate decision sent to the GGSN. The gate decision contains for each gate either the "Approval of QoS Commit" command to open the gate or the "Removal of QoS Commit" command to close the gate. The open gate command may either be a part of the authorization decision or the PDF may provide a separate decision with the "Approval of QoS Commit" command to open the gate. When a media IP flow is put on hold, the PDF may send the "Removal of QoS Commit" command to the GGSN to close the relevant gate – the possible RTCP gate shall be left open to keep the connection alive. The open gate command shall be used to resume the media from hold.

3GPP TSG-CN WG3 Meeting #32
Zagreb, Croatia, 10th - 14th May 2004.

N3-040304

CR-Form-v7

CHANGE REQUEST

⌘	**29.208** CR	**069**	⌘**rev**	**-**	⌘	Current version:	**5.7.0**	⌘

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

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

Title: ⌘	Multiple IMS sessions using the same PDP context	
Source: ⌘	TSG_CN WG3	
Work item code:⌘	TEI	***Date:*** ⌘ 27/04/2004
Category: ⌘	**B**	***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:
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: ⌘	TSG-SA2 has added in stage 2 specifications the multiplexing of flows from different IMS sessions in the same PDP context. Stage 3 specifications shall be aligned with stage 2.
Summary of change:⌘	Actions and procedures applied at the release of a session multiplexed with other sessions in the same PDP context have been clarified.
Consequences if not approved: ⌘	The related stage 3 description of a new feature is missing.

Clauses affected: ⌘	6.2 and 6.3

	Y	N		
Other specs affected: ⌘	X		Other core specifications ⌘	27.060, 29.207
		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:

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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.

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6   Other flows over Go interface

6.2   Removal of QoS commit

The "Removal of QoS commit" procedure is used e.g. when a session is released and the related IP flows are removed from a PDP context that multiplexes IP flows from several sessions, or when media IP flow(s) 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.

6.2.2   Removal of QoS commit at media component remove

Figure 6.2.2 presents the "Removal of QoS commit" procedure at media component remove to both the Mobile Originating (MO) side and the Mobile Terminating (MT) side.
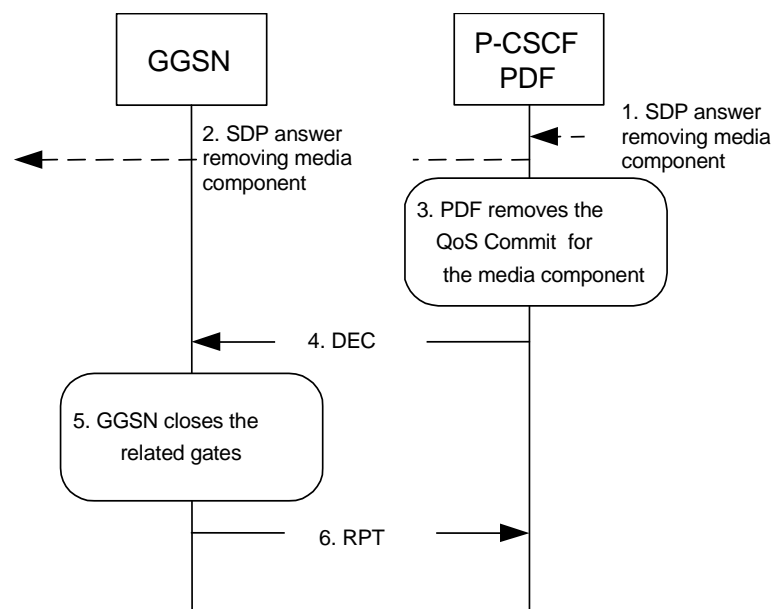
1.   P-CSCF receives an SDP answer removing media component.
2.   P-CSCF forwards the SDP answer removing media component.
3.   PDF removes the QoS commit for the related IP flow(s) of the media component.
4.   PDF sends a COPS DEC message to the GGSN to close the related 'gate(s)'.
5.   GGSN receives the COPS DEC message and closes the 'gate(s)'.
6.   GGSN sends a COPS RPT message back to the PDF.

**Figure 6.2.2: Removal of QoS commit at media component remove to both the Mobile Originating
(MO) side and the Mobile Terminating (MT) side**

6.3   Revoke authorization for GPRS and IP resources

The "Revoke Authorization for GPRS and IP resources" procedure is used e.g. upon session release or upon session redirection of the only or last session of a given client handle (PDP context) or upon SIP final error response initiated after bearer establishment. The PDF decision of "Revoke Authorization for UMTS and IP Resources" shall be sent as a separate decision to the GGSN corresponding to the previous "Authorize QoS Resources" request.

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 (of the only or last session of a given client handle) 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.
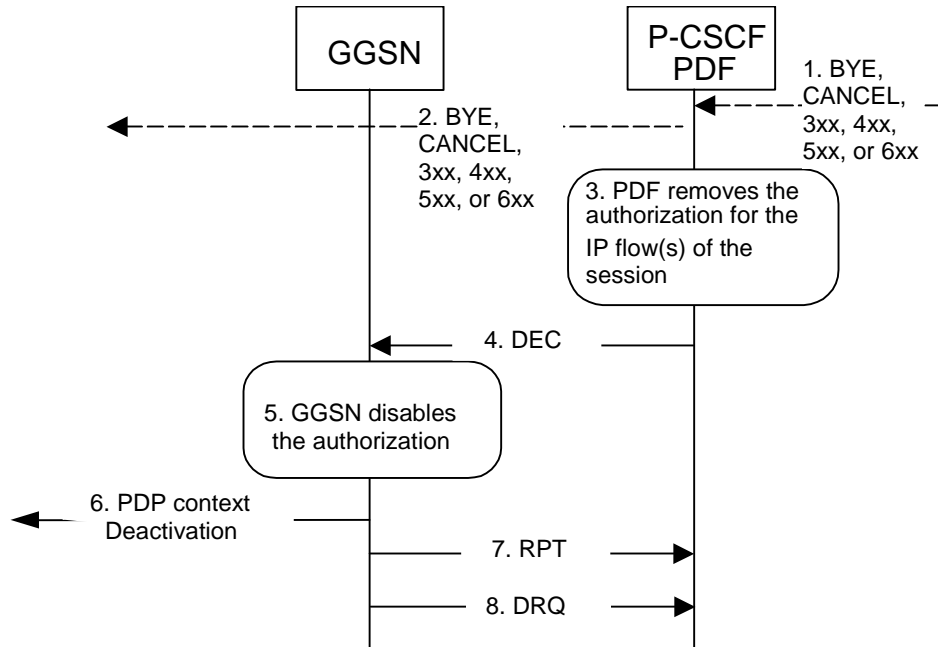
1.   A SIP BYE message, a SIP CANCEL request, a SIP 3xx redirect response, or any 4xx, 5xx, or 6xx SIP final error response is received by the P-CSCF.
2.   P-CSCF forwards the BYE message, or the SIP 3xx redirect response, a SIP CANCEL request, or any 4xx, 5xx, or 6xx SIP final error response.
3.   PDF removes the authorisation for the IP flow(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 RPT message(s) back to the PDF.
8.   GGSN sends COPS DRQ message(s) to the PDF.

**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**

3GPP TSG-CN WG3 Meeting #32
Zagreb, Croatia, 10th - 14th May 2004.

N3-040412

<div style="text-align:right">CR-Form-v7</div>

CHANGE REQUEST

| ⌘ | **27.060** CR | **089** | ⌘ **rev** | **2** | ⌘ | Current version: | **5.6.0** | ⌘ |

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

Proposed change affects: UICC apps⌘ [ ] ME [**X**] Radio Access Network [ ] Core Network [ ]

Title: ⌘	Multiple IMS sessions using the same PDP context			
Source: ⌘	TSG_CN WG3			
Work item code: ⌘	TEI		*Date:* ⌘	13/05/2004
Category: ⌘	**B**		*Release:* ⌘	Rel-6

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

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

Reason for change: ⌘	TSG-SA2 has added in stage 2 specifications the multiplexing of flows from different IMS sessions in the same PDP context. Stage 3 specifications shall be aligned with stage 2.
Summary of change: ⌘	Handling of binding information for multiplexed sessions has been added. A limitation to multiplex different sessions in the same PDP context has been removed.
Consequences if not approved: ⌘	The UE related stage 3 description of a new feature is missing.

Clauses affected: ⌘	13.5 and 13.9

	Y	N			
Other specs affected: ⌘	X		Other core specifications	⌘	29.207, 29.208
		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 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.

13.5 Binding Information

The MS supports the binding mechanism for service-based local policy control. When an authorization token is included in an IMS SIP message, the MS will include binding information in the Traffic Flow Template information element when activating or modifying a PDP context intended to carry certain IMS IP flow(s). The binding information consists of the authorization token and the flow identifier(s) of the IMS IP flow(s) the MS puts on the same PDP context, e.g. due to the same QoS requirements for those IMS IP flows. The authorization token and the flow identifier are specified in 3GPP TS 29.207 [52].

If the MS multiplexes media flows from different IMS sessions in the same PDP Context, the MS shall include the binding information of all multiplexed sessions, i.e. the media authorization tokens of all multiplexed IMS sessions and the flow identifiers of all multiplexed IP flows, in the PDP Context Activation/Modification request.

If the MS includes binding information, it shall populate the TFT filters with wildcard values.

13.9 Multiplexing of IMS media components to PDP contexts

The IMS network may use the SDP attribute "a=group:SRF" to order the MS to multiplex certain IMS media components within the same session on the same PDP context. If this attribute is not present then multiplexing the media components on PDP contexts is entirely MS specific. ~~However, IMS media components belonging to different sessions will be multiplexed on separate PDP contexts.~~ The rules for multiplexing IMS media components to PDP contexts are specified in 3GPP TS 24.229 [51].