

Source: TSG CN WG3
Title: CRs on Rel-5 Work Item e2eQoS.
Agenda item: 8.5
Document for: APPROVAL

Introduction:

This document contains 6 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 for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N3-030455	Remove Decision	29.007	075	3	F	Rel-5	5.5.0
N3-030251	Update of reference [11]	29.207	089		F	Rel-5	5.3.0
N3-030253	Alignment with the latest version of Framework PIB	29.207	090		F	Rel-5	5.3.0
N3-030387	Definition of Auth Token	29.207	091	1	F	Rel-5	5.3.0
N3-030388	Clarification to Binding Information Handling	29.207	094	1	F	Rel-5	5.3.0
N3-030390	Change PDP Context to Client Handle for PDF	29.207	099	1	F	Rel-5	5.3.0

3GPP TSG-CN WG3 Meeting #28
San Diego, USA, 19th – 23rd May 2003.

Tdoc #N3-030251

CR-Form-v7
CHANGE REQUEST
⌘ 29.207 CR 089 ⌘ rev - ⌘ Current version: 5.3.0 ⌘

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

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

Title:	⌘ Update Reference [11]		
Source:	⌘ TSG_CN WG3 [Nortel Networks]		
Work item code:	⌘ E2EQoS-IW	Date:	⌘ 19/05/2003
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:	⌘ Update reference [11] with the final RFC number.
Summary of change:	⌘ Update the draft version with the approved RFC number. Drafting rules
Consequences if not approved:	⌘ Incorrect reference.

Clauses affected:	⌘ 2, 5.1.1, 5.2.1.1.										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

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

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

First amended 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 23.002: "Network architecture".
- [3] 3GPP TS 23.207: "End-to-end Quality of Service (QoS) concept and architecture".
- [4] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".
- [5] Void.
- [6] IETF RFC 2753: "A Framework for Policy-based Admission Control".
- [7] IETF RFC 2748: "The COPS (Common Open Policy Service) Protocol".
- [8] IETF RFC 3084: "COPS Usage for Policy Provisioning (COPS-PR)".
- [9] IETF RFC 3159: "Structure of Policy Provisioning Information (SPPI)".
- [10] Void.
- [11] IETF [RFC 3520](#) ~~internet draft~~: "Session Authorization Policy Element" (~~draft-ietf-rap-rsvp-authsession-05.txt~~).
- [12] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".
- [13] 3GPP TS 27.060: "Packet domain; Mobile Station (MS) supporting Packet Switched services".
- [14] 3GPP TS 24.229: "IP Multimedia Call Control Protocol based on SIP and SDP; Stage 3".
- [15] IETF RFC 3318: "Framework Policy Information Base".
- [16] IETF RFC 3289: "Management Information Base for the Differentiated Services Architecture".
- [17] IETF RFC 2327: "SDP: Session Description Protocol".
- [18] 3GPP TS 29.208: "End-to-end Quality of Service (QoS) signalling flows".
- [19] IETF RFC 3291: "Textual Conventions for Internet Network Addresses".

- [20] 3GPP TS 29.060: "General Packet Radio Service (GPRS); GPRS Tunnelling Protocol (GTP) across the Gn and Gp interface".
- [21] 3GPP TS 32.225: "Telecommunication management; Charging management; Charging data description for the IP Multimedia Subsystem (IMS)".
- [22] IETF RFC 3313: "Private Session Initiation Protocol (SIP) Extensions for Media Authorization"

***** **NEXT AMENDED SECTION** *****

5 Policy control procedures

5.1 GGSN

5.1.1 Initial authorization at PDP context activation

The GGSN receives binding information during the activation of a PDP context by the UE. To perform initial authorization at the PDP context activation the GGSN shall send an authorisation request to the PDF including the binding information received from the UE.

The GGSN identifies the required PDF from the authorisation token of the binding information. The authorisation token is formatted according to the structure of the policy element AUTH_SESSION defined in [RFC 3520](#) [11]. The policy element AUTH_SESSION shall include the AUTH_ENT_ID and the SESSION_ID attributes. The GGSN checks for that Policy Element and retrieves the AUTH_ENT_ID attribute from this. If this is in the form of a Fully Qualified Domain Name, then this is used to identify the correct PDF.

***** **NEXT AMENDED SECTION** *****

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 parameter;
- 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.

End of amended sections

3GPP TSG-CN WG3 Meeting #28
San Diego, USA, 19th – 23rd May 2003.

Tdoc #N3-030253

CR-Form-v7
<h2 style="margin: 0;">CHANGE REQUEST</h2>
¶ 29.207 CR 90 ¶ rev - ¶ Current version: 5.3.0 ¶

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

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

Title:	¶ Alignment with the latest version of Framework PIB		
Source:	¶ TSG_CN WG3 [Nortel Networks, Ericsson]		
Work item code:	¶ E2EQoS-IW Date: ¶ 19/05/2003		
Category:	¶ F Release: ¶ REL-5 Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%; vertical-align: top;"> 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. </td> <td style="width: 50%; vertical-align: top;"> 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) </td> </tr> </table>	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)
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:	¶ IETF's Framework PIB (RFC 3318) has been finalized, with the attributes of the Filter containing definitions for wildcard/match-all/not_used values. These match-all/not_used values shall be used instead of setting the attribute field length to null in the COPS protocol definition. For frwkIpFilterDscp, the description says: ".....A value of -1 indicates that a specific DSCP value has not been defined and thus all DSCP values are considered a match" For frwkIpFilterFlowId, the description says: "The value of -1 for this attribute MUST imply that any flow label value in the IPv6 header will match, resulting in the flow label field of the IPv6 header being ignored for matching this filter entry" For frwkBaseFilterNegation, the description says: "If the value of this attribute is 'false', then the action is applied to the packet.", indicating negation functionality is not used. The only reason for having the Negation attribute using zero length previously was for consistency with the other two (Dscp and FlowId) attributes. Now that those attributes need to be changed, we do not want to use zero length because the "false" value is better, and it is more consistent with the (Dscp and FlowId) way of indicating "not used".
Summary of change:	¶ The text is reviewed to reflect the new/correct way of wildcarding attributes in the Framework PIB. Minor syntax corrections to the PIB.
Consequences if not approved:	¶ TS 29.207 will specify an incorrect form of wildcarding attributes in the FrameWork PIB.

Clauses affected:	⌘				
Other specs affected:	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr></table>	Y	N	
		Y	N		
		<table border="1"><tr><td></td><td>N</td></tr></table>		N	Other core specifications
			N		
<table border="1"><tr><td></td><td>N</td></tr></table>		N	Test specifications		
	N				
<table border="1"><tr><td></td><td>N</td></tr></table>		N	O&M Specifications		
	N				
Other comments:	⌘				

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***** **FIRST AMENDED SECTION** *****

6.3.2 Message description

The following messages and events are available on the Go interface (after the initial policy provisioning described in subclause 6.3.1.5):

- Authorisation_Request (REQ) (GGSN→PDF):

This event allows the GGSN to request authorisation data from the PDF. It contains the following information:

- Client Handle;
- Binding Information.

The R-type = 0x08 for configuration request is used here and M-type = 0x02 create event state is used here.

- Authorisation_Decision (DEC)(PDF→GGSN):

This event provides the GGSN with the relevant authorisation data. The event contains the following information:

- Client Handle;
- ICID(s) (only in the initial Authorisation_Decision) .Only one ICID is transferred in this Release. The format of the ICID is defined in 3GPP TS 32.225 [21];
- Unidirectional set (this parameter shall appear once for each direction (uplink and downlink)):
 - Direction indicator;
 - "Authorised QoS";
 - Gate description (this parameter shall appear once for each required gate for this direction):
 - Filter Specification - The information about the authorised IP end points addresses and ports is detailed below. The Filter Specification parameters are:
 - Source IP address;
 - Destination IP address;
 - Source ports;
 - Destination ports;
 - Protocol ID.

The Source and Destination ports are described with a range consisting of a minimum and maximum value. If only one port is authorised, the minimum value and maximum value of the range are identical.

A filter specification describing more than one IP flow shall be only used in case of identical Protocol IDs, IP addresses and successive port numbers (e.g. RTP and RTCP flow of a media component). Furthermore, the gate status of all IP flows described by this filter specification shall be identical, too.

The Base and IP Filter definitions from the IETF Framework PIB [15] shall be used in the 3GPP Go PIB to represent the filter specification. Only a subset of the available filter attributes shall be used. The attributes ~~frwkBaseFilterNegation~~, ~~frwkIpFilterDscp~~, and ~~frwkIpFilterFlowId~~ in the filter description shall have their values set to -1, indicating a "match-all" wildcard condition, in effect a "not used" condition. The attribute ~~frwkBaseFilterNegation~~ shall have its value set to "false" to indicate not using negation, in effect a "not used" condition. ~~length field in its encoding set to 0 by the PDF to indicate they are not used.~~ The GGSN shall ignore them if they are set otherwise. Wildcarding of filter elements is detailed in Annex B.

- Gate status (opened/closed)

The R-type = 0x08 for configuration request is used here and M-type = 0x02 create event state is used here.

- Authorisation_Failure (DEC) (PDF→GGSN):

This event provides the GGSN with an indication of an authorisation failure, and may carry additional reason details. The event contains the following information:

- Client Handle;
- Authorisation failure (including any provided reason information).

The R-type = 0x08 for configuration request is used here and M-type = 0x04 terminate event state is used here.

- Gate Decision (DEC) (PDF→GGSN):

The Gate Decision indicates to the GGSN the new status of the gate(s) established for a client handle (PDP context). The gate status indicates to the GGSN that the gate shall be opened or closed. Only the gate(s) for which the status is changed are indicated by this event. The event contains the following information:

- Client Handle;
- Unidirectional set (this parameter shall appear once for each direction for which gates are being updated (uplink and/or downlink)):
 - Direction indicator;
 - Gate description (this parameter shall appear once for each gate to be modified for this direction) :
 - Filter Specification - The information about the authorised IP end points addresses and ports is detailed below. The Filter Specification parameters are:
 - Source IP address;
 - Destination IP address;
 - Source ports;
 - Destination ports;
 - Protocol ID.

The Source and Destination ports are described with a range consisting of a minimum and maximum value. If only one port is authorised, the minimum value and maximum value of the range are identical.

A filter specification describing more than one IP flow shall be only used in case of identical Protocol IDs, IP addresses and successive port numbers (e.g. RTP and RTCP flow of a media

component). Furthermore, the gate status of all IP flows described by this filter specification shall be identical, too.

The Base and IP Filter definitions from the IETF Framework PIB [15] shall be used in the 3GPP Go PIB to represent the filter specification. Only a subset of the available filter attributes shall be used. The attributes ~~frwkBaseFilterNegation~~, frwkIpFilterDscp, and frwkIpFilterFlowId in the filter description shall have their values set to -1, indicating a "match-all" wildcard condition, in effect a "not used" condition. The attribute frwkBaseFilterNegation shall have its value set to "false" to indicate not using negation, in effect a "not used" condition. ~~length field in its encoding set to 0 by the PDF to indicate they are not used.~~ The GGSN shall ignore them if they are set otherwise. Wildcarding of filter elements is detailed in Annex B.

- Gate status (opened/closed)

NOTE: The opening of the gate may occur at the same time / be part of the authorisation decision event.

The R-type = 0x08 for configuration request is used here and M-type = 0x03 update event state is used here.

- Report (RPT) (GGSN→PDF):

- Authorisation_report; Gate_report:

The GGSN sends a COPS RPT message back to the PDF reporting that it enforced or not the Authorisation_Decision, or the Gate_Decision.

The events contain the following information:

- Client Handle;
- Success / Failure.
- The Authorization_report of the initial Authorisation_Decision includes:
 - GCID;
 - GGSN address.
- Report of state changes:

The GGSN sends the report of state change message to the PDF reporting that the maximum bit rate for the PDP context is modified to 0 kbps or that the maximum bit rate for the PDP context is changed from 0 kbps.

The event contains the following information:

- Client Handle;
- Maximum bit rate (set to 0 kbps / changed from 0 kbps).

- Delete request state (DRQ) (GGSN→PDF):

The GGSN informs the PDF via the delete request state message, that the PDP context is deactivated and the request state identified by the client handle is no longer available/relevant at the GGSN, so the corresponding state shall also be removed at the PDF.

The DRQ message includes the reason why the request state was deleted.

The event contains the following information:

- Client Handle;
- Reason code: "Tear", Sub-code: deactivation of the PDP context.

- Remove_Decision (PDF→GGSN):

The PDF uses the Remove_Decision to inform the GGSN that the PDF revokes the authorized resources for the client handle (PDP context).

The event contains the following information:

- Client Handle.

***** NEXT AMENDED SECTION *****

Annex B (normative): 3GPP Go PIB

```

GO3GPP-PIB  PIB-DEFINITIONS ::= BEGIN

IMPORTS
    Unsigned32, Integer32, MODULE-IDENTITY,
    MODULE-COMPLIANCE, OBJECT-TYPE, OBJECT-GROUP
        FROM COPS-PR-SPPI          -- Defined in RFC 3159 [9]
    InstanceId, Prid
        FROM COPS-PR-SPPI-TC       -- Defined in RFC 3159 [9]
    zeroDotZero
        FROM SNMPv2-SMI

    InetAddress, InetAddressType,
    InetAddressPrefixLength
        FROM INET-ADDRESS-MIB;     -- Defined in RFC 3291 [19]

go3gppPib  MODULE-IDENTITY
    SUBJECT-CATEGORIES { go3gpp (0x8009) } -- Go 3GPP COPS Client Type

    LAST-UPDATED "2003052400002150000Z"
    ORGANIZATION "3GPP TSG CN WG3"
    CONTACT-INFO
        "Kwok Ho Chan
        Nortel Networks
        600 Technology Park Drive
        Billerica, MA 01821 USA
        Phone: +1 978 288 8175
        Email: khchan@nortelnetworks.com

        Louis-Nicolas Hamer
        Nortel Networks
        PO Box 3511 Station C
        Ottawa, Ontario
        Canada, K1Y 4H7
        Phone: +1 613 768 3409
        Email: nhamer@nortelnetworks.com"

    DESCRIPTION
        "A PIB module containing the set of provisioning
        classes that are required for support of policies for
        3GPP's GO interface, Release 5."
    REVISION "2003052400002150000Z "
    DESCRIPTION
        "The 3GPP Go PIB for release 5
        Annex B of 3GPP TS 29.207 v5.43.0."

    ::= { 1_3_6_1_4_1_10415_1_1 } -- full specification of object ID tree.
        -- The final syntax should be { 3gpp_pib 1 }
        -- With imports from the document that shows
        -- that 3gpp_pib means ( 1.3.6.1.4.1.10415.1 )

--
-- The root OID for PRCs in the 3GPP GO PIB
--

go3gppCapabilityClasses      OBJECT IDENTIFIER ::= { go3gppPib 1 }

```

```

go3gppEventHandlerClasses OBJECT IDENTIFIER ::= { go3gppPib 2 }
go3gppEventClasses OBJECT IDENTIFIER ::= { go3gppPib 3 }
go3gppEventInfoClasses OBJECT IDENTIFIER ::= { go3gppPib 4 }
go3gppReqInfoClasses OBJECT IDENTIFIER ::= { go3gppEventInfoClasses 1 }
go3gppDecInfoClasses OBJECT IDENTIFIER ::= { go3gppEventInfoClasses 2 }
go3gppReportClasses OBJECT IDENTIFIER ::= { go3gppPib 5 }
go3gppConformance OBJECT IDENTIFIER ::= { go3gppPib 6 }

```

```

-- -----
--
-- Capability and Limitation Policy Rule Classes
--
--
-- 3GPP GO Capability Table
--
go3gppAuthReqCapTable OBJECT-TYPE
    SYNTAX SEQUENCE OF Go3gppAuthReqCapEntry
    PIB-ACCESS notify
    STATUS current
    DESCRIPTION
        "The 3GPP Go Authorization Request Capability PRC."
    ::= { go3gppCapabilityClasses 1 }

go3gppAuthReqCapEntry OBJECT-TYPE
    SYNTAX Go3gppAuthReqCapEntry
    STATUS current
    DESCRIPTION
        "An instance of the go3gppAuthReqCap class identifies a
        specific PRC and associated attributes as supported
        by the device."

    PIB-INDEX { go3gppAuthReqCapPrid }
    UNIQUENESS { }
    ::= { go3gppAuthReqCapTable 1 }

Go3gppAuthReqCapEntry ::= SEQUENCE {
    go3gppAuthReqCapPrid InstanceId,
    go3gppAuthReqCapBindingInfos Unsigned32,
    go3gppAuthReqCapFlowIds Unsigned32
}

go3gppAuthReqCapPrid OBJECT-TYPE
    SYNTAX InstanceId
    STATUS current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppAuthReqCap class."
    ::= { go3gppAuthReqCapEntry 1 }

go3gppAuthReqCapBindingInfos OBJECT-TYPE
    SYNTAX Unsigned32
    STATUS current
    DESCRIPTION
        "Indication of the maximum number of Binding Information
        the PEP can send with each Authorization Request.
        The value of zero indicates limit is not specified."
    DEFVAL { 0 }
    ::= { go3gppAuthReqCapEntry 2 }

go3gppAuthReqCapFlowIds OBJECT-TYPE
    SYNTAX Unsigned32
    STATUS current
    DESCRIPTION
        "Indication of the maximum number of Flow identifiers the PEP can
        send with each Authorization Request.
        The value of zero indicates limit is not specified."
    DEFVAL { 0 }
    ::= { go3gppAuthReqCapEntry 3 }

```

```

--
-- Go 3GPP Authorization Request Decision Capabilities
--

go3gppAuthReqDecCapTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppAuthReqDecCapEntry
    PIB-ACCESS   notify
    STATUS      current
    DESCRIPTION
        "The 3GPP Go Authorization Request Decision Capability PRC."
    ::= { go3gppCapabilityClasses 2 }

go3gppAuthReqDecCapEntry OBJECT-TYPE
    SYNTAX      Go3gppAuthReqDecCapEntry
    STATUS      current
    DESCRIPTION
        "An instance of the go3gppAuthReqDecCap class identifies a
         specific PRC and associated attributes as supported
         by the device."

    PIB-INDEX { go3gppAuthReqDecCapPrid }
    UNIQUENESS { }
    ::= { go3gppAuthReqDecCapTable 1 }

Go3gppAuthReqDecCapEntry ::= SEQUENCE {
    go3gppAuthReqDecCapPrid      InstanceId,
    go3gppAuthReqDecCapIcids    Unsigned32
}

go3gppAuthReqDecCapPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
         instance of the go3gppAuthReqDecCap class."
    ::= { go3gppAuthReqDecCapEntry 1 }

go3gppAuthReqDecCapIcids OBJECT-TYPE
    SYNTAX      Unsigned32
    STATUS      current
    DESCRIPTION
        "Indication of the maximum number of Icid possible
         in a single Authorization Request Decision.
         The value of zero indicates limit is not specified."
    DEFVAL { 0 }
    ::= { go3gppAuthReqDecCapEntry 2 }

--
-- Component Limitations Table
--
-- This table supports the ability to export information
-- detailing provisioning class/attribute implementation limitations
-- to the policy decision function. This Component Limitations Table
-- shall be implementation dependant and does not need to be standardized.

-----
--
-- 3GPP GO Event Handler Provisioning Classes
--
-- PRCs sent from PDF to PEP for indicating how to handle each
-- kind of event that require actions by the GO interface.
--
-- For 3GPP Release 5, PRCs for Event Handling of Authorization
-- Request containing Binding Information, Flow identifiers, and QoS is
-- specified.
--
--
-- 3GPP GO Authorization Request Event Handler Provisioning Table
--

```

```

go3gppAuthReqHandlerTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF Go3gppAuthReqHandlerEntry
    PIB-ACCESS      install
    STATUS          current
    DESCRIPTION
        "PRC from PDF to PEP carried by COPS DEC messages
        indicating GO actions to take at the GGSN when an Authorization
        Request Event is detected by the GGSN. An example of an
        Authorization Request Event is the receive of a PDP Context message."
    ::= { go3gppEventHandlerClasses 1 }

```

```

go3gppAuthReqHandlerEntry OBJECT-TYPE
    SYNTAX          Go3gppAuthReqHandlerEntry
    STATUS          current
    DESCRIPTION
        "An instance of the go3gppAuthReqHandler class sent by the PDF to
        the PEP what the PEP should send upon detection of an Authorization
        Request Event."
    PIB-INDEX { go3gppAuthReqHandlerPrid }
    UNIQUENESS { go3gppAuthReqHandlerEnable,
                 go3gppAuthReqHandlerBindingInfo
                }
    ::= { go3gppAuthReqHandlerTable 1 }

```

```

Go3gppAuthReqHandlerEntry ::= SEQUENCE {
    go3gppAuthReqHandlerPrid      InstanceId,
    go3gppAuthReqHandlerEnable    INTEGER,
    go3gppAuthReqHandlerBindingInfo Unsigned32
}

```

```

go3gppAuthReqHandlerPrid OBJECT-TYPE
    SYNTAX          InstanceId
    STATUS          current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of this class."
    ::= { go3gppAuthReqHandlerEntry 1 }

```

```

go3gppAuthReqHandlerEnable OBJECT-TYPE
    SYNTAX          INTEGER {
                        enable(1),
                        disable(2)
                    }
    STATUS          current
    DESCRIPTION
        "Controls the usage of 3GPP Authorization Request Events
        to trigger COPS requests to PDF on the go interface."
    DEFVAL { enable }
    ::= { go3gppAuthReqHandlerEntry 2 }

```

```

go3gppAuthReqHandlerBindingInfo OBJECT-TYPE
    SYNTAX          Unsigned32
    STATUS          current
    DESCRIPTION
        "Indication of the maximum number of Binding Information
        be associated with a each Authorizing Request.
        The value of zero indicates policy control does not impose
        any limit."
    DEFVAL { 0 }
    ::= { go3gppAuthReqHandlerEntry 3 }

```

```

-----
--
-- 3GPP GO Event Classes
--
-- PRCs from PEP to PDF carried by COPS REQ messages
-- indicating the detection of specific events in the GGSN.
-- Information required for PDF to make decision on behave
-- of GGSN is also defined here to be carried by REQ messages.
--

```

```

--
-- 3GPP GO Authorization Request Event Table
--
go3gppAuthReqEventTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF Go3gppAuthReqEventEntry
    PIB-ACCESS      notify
    STATUS          current
    DESCRIPTION
        "PRC for indication of Authorization Request Event
        and its relevant information.
        Sent by PEP to PDF upon receive of an Authorization
        Request. Using COPS REQ message."
    ::= { go3gppEventClasses 1 }

go3gppAuthReqEventEntry OBJECT-TYPE
    SYNTAX          Go3gppAuthReqEventEntry
    STATUS          current
    DESCRIPTION
        "An entry in the Authorization Request Event Table
        describe a single Event sent by the PEP to the PDF."
    PIB-INDEX { go3gppAuthReqEventPrid }
    UNIQUENESS { }
    ::= { go3gppAuthReqEventTable 1 }

Go3gppAuthReqEventEntry ::= SEQUENCE {
    go3gppAuthReqEventPrid      InstanceId,
    go3gppAuthReqEventBindingInfos Prid
}

go3gppAuthReqEventPrid OBJECT-TYPE
    SYNTAX          InstanceId
    STATUS          current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppAuthReqEvent class."
    ::= { go3gppAuthReqEventEntry 1 }

go3gppAuthReqEventBindingInfos OBJECT-TYPE
    SYNTAX          Prid
    STATUS          current
    DESCRIPTION
        "References the first of a list of go3gppBindingInfo
        class instances that are associated with this
        Authorization Request Event.
        A value of zeroDotZero indicates there are no
        go3gppBindingInfo class instance associated with
        this Authorization Event."
    ::= { go3gppAuthReqEventEntry 2 }

--
-- 3GPP Go Event Request Info Classes
--
--
-- 3GPP GO Binding Information Table
--
go3gppBindingInfoTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF Go3gppBindingInfoEntry
    PIB-ACCESS      notify
    STATUS          current
    DESCRIPTION
        "PRC representing Binding Information.
        Sent by PEP to PDF as part of an Authorization
        Request. In a COPS REQ message."
    ::= { go3gppReqInfoClasses 1 }

go3gppBindingInfoEntry OBJECT-TYPE
    SYNTAX          Go3gppBindingInfoEntry
    STATUS          current
    DESCRIPTION
        "An entry in the Binding Information Table
        describing a single Binding Info."

```

```

Each entry is referenced by go3gppAuthReqEventBindingInfos
or go3gppBindingInfoNext."
PIB-INDEX { go3gppBindingInfoPrid }
UNIQUENESS { }
 ::= { go3gppBindingInfoTable 1 }

```

```

Go3gppBindingInfoEntry ::= SEQUENCE {
    go3gppBindingInfoPrid      InstanceId,
    go3gppBindingInfoToken    OCTET STRING,
    go3gppBindingInfoFlowIds  Prid,
    go3gppBindingInfoNext     Prid
}

```

```

go3gppBindingInfoPrid OBJECT-TYPE
SYNTAX      InstanceId
STATUS      current
DESCRIPTION
    "An arbitrary integer index that uniquely identifies an
    instance of the go3gppBindingInfo class."
 ::= { go3gppBindingInfoEntry 1 }

```

```

go3gppBindingInfoToken OBJECT-TYPE
SYNTAX      OCTET STRING
STATUS      current
DESCRIPTION
    "The Authorization Token associated with this
    instance of the go3gppBindingInfo class.
    Each Binding Information must have a Token."
 ::= { go3gppBindingInfoEntry 2 }

```

```

go3gppBindingInfoFlowIds OBJECT-TYPE
SYNTAX      Prid
STATUS      current
DESCRIPTION
    "References the first of a list of FlowIds associated
    with this instance of go3gppBindingInfo class.
    This is the anchor of a list of go3gppFlowIdEntry
    Instances.
    A value of zeroDotZero indicates an empty list which
    is an error condition."
DEFVAL { zeroDotZero }
 ::= { go3gppBindingInfoEntry 3 }

```

```

go3gppBindingInfoNext OBJECT-TYPE
SYNTAX      Prid
STATUS      current
DESCRIPTION
    "References the next of a list of go3gppBindingInfo
    instances associated with an Authorization Request.
    A value of zeroDotZero indicates this is the last of
    a list of go3gppBindingInfo instances associated with
    an Authorization Request."
DEFVAL { zeroDotZero }
 ::= { go3gppBindingInfoEntry 4 }

```

```

--
-- 3GPP Go Authorization Request FlowID Table
--

```

```

go3gppFlowIdTable OBJECT-TYPE
SYNTAX      SEQUENCE OF Go3gppFlowIdEntry
PIB-ACCESS  notify
STATUS      current
DESCRIPTION
    "Represents the collection of FlowIDs."
 ::= { go3gppReqInfoClasses 2 }

```

```

go3gppFlowIdEntry OBJECT-TYPE
SYNTAX      Go3gppFlowIdEntry
STATUS      current
DESCRIPTION
    "Each entry describes a single FlowID."

```

```

PIB-INDEX { go3gppFlowIdPrid }
UNIQUENESS { }
::= { go3gppFlowIdTable 1 }

```

```

Go3gppFlowIdEntry ::= SEQUENCE {
    go3gppFlowIdPrid      InstanceId,
    go3gppFlowIdFlowId   Unsigned32,
    go3gppFlowIdNext     Prid
}

```

```

go3gppFlowIdPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppFlowId class."
    ::= { go3gppFlowIdEntry 1 }

```

```

go3gppFlowIdFlowId OBJECT-TYPE
    SYNTAX      Unsigned32
    STATUS      current
    DESCRIPTION
        "The FlowId itself."
    ::= { go3gppFlowIdEntry 2 }

```

```

go3gppFlowIdNext OBJECT-TYPE
    SYNTAX      Prid
    STATUS      current
    DESCRIPTION
        "References the next FlowId in the list associated with the
        same Binding Information of an Authorization Request.
        This points to a list of go3gppFlowIdEntry Instances.
        A value of zeroDotZero indicates end of the list."
    DEFVAL { zeroDotZero }
    ::= { go3gppFlowIdEntry 3 }

```

```

-----
--
-- 3GPP Go Authorization Request Decisions
--
-- PRCs for carrying the Event Decision send from PDF to PEP,
-- carried by the COPS DEC message.
-- These PRCs include support for Gates/Filters, QoS, ICIDs.
--
--
-- Failure Decisions can be defined by use of COPS-PR DEC message
-- containing first an install decision (with objects indicating
-- what failed and some indication to the GGSN how to react to this
-- Error Decision), and second a remove decision (for cleanup of
-- the installed Error Decision Object).
--
--
-- Failures indicated by PDF to GGSN
--   Authorization Failure
--
--
-- Authorization Request Failure Decision Table
--
go3gppAuthReqFailDecTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppAuthReqFailDecEntry
    PIB-ACCESS  install
    STATUS      current
    DESCRIPTION
        "The Authorization failure Table. Indicates failures decisions to the PEP."
    ::= { go3gppDecInfoClasses 1 }

go3gppAuthReqFailDecEntry OBJECT-TYPE
    SYNTAX      Go3gppAuthReqFailDecEntry
    STATUS      current
    DESCRIPTION

```

```

    "Each go3gppAuthReqFailDecEntry is per request."
    PIB-INDEX { go3gppAuthReqFailDecPrid }
    UNIQUENESS { }
    ::= { go3gppAuthReqFailDecTable 1 }

```

```

Go3gppAuthReqFailDecEntry ::= SEQUENCE {
    go3gppAuthReqFailDecPrid      InstanceId,

    go3gppAuthReqFailDecReason    INTEGER
}

```

```

go3gppAuthReqFailDecPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
         instance of the go3gppAuthReqFailDec class."
    ::= { go3gppAuthReqFailDecEntry 1 }

```

```

go3gppAuthReqFailDecReason OBJECT-TYPE
    SYNTAX      INTEGER {
        noCorrespondingSession (1),
        invalidBundling (2),
        authorizationFailure (3)
    }
    STATUS      current
    DESCRIPTION
        "Reason for Auth Request Failure Decision given by PDF:

        noCorrespondingSession:      No corresponding session was found
                                     by the PDF

        invalidBundling:             In case the UE violates the IMS level indication
                                     and attempts to set up multiple IMS media components
                                     in a single PDP context despite of an indication that
                                     mandated separate PDP contexts or if the list
                                     of flowidentifiers contained in the bearer authorization
                                     request doesn't match with the grouping indication
                                     information the PDF has received from the P-CSCF.

        authorizationFailure:        The PDF is unable to authorise the binding information.
                                     This is a generic failure indication that can be used
                                     if the actual reason is not any of the other specified
                                     reasons."
    ::= { go3gppAuthReqFailDecEntry 2 }

```

```

--
-- Authorization Request Decision Table
--
go3gppAuthReqDecTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppAuthReqDecEntry
    PIB-ACCESS  install
    STATUS      current
    DESCRIPTION
        "The Authorization Request Decision Table. "
    ::= { go3gppDecInfoClasses 2 }

go3gppAuthReqDecEntry OBJECT-TYPE
    SYNTAX      Go3gppAuthReqDecEntry
    STATUS      current
    DESCRIPTION
        "Each go3gppAuthReqDecEntry is per Authorization Request."
    PIB-INDEX { go3gppAuthReqDecPrid }
    UNIQUENESS { }
    ::= { go3gppAuthReqDecTable 1 }

Go3gppAuthReqDecEntry ::= SEQUENCE {
    go3gppAuthReqDecPrid      InstanceId,
    go3gppAuthReqDecIcids     Prid,
    go3gppAuthReqDecDirDecs   Prid
}

```

```

go3gppAuthReqDecPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
         instance of the go3gppAuthReqDec class."
    ::= { go3gppAuthReqDecEntry 1 }

go3gppAuthReqDecIcids OBJECT-TYPE
    SYNTAX      Prid
    STATUS      current
    DESCRIPTION
        "References the first of a list of IcIDs associated
         with this instance of go3gppAuthReqDec class.
         There should be one IcID on this list for each Binding
         Information in the corresponding Authorization Request.
         A value of zeroDotZero indicates an empty list and there
         is no IcID change associated with this Authorization Request
         Decision."
    DEFVAL     { zeroDotZero }
    ::= { go3gppAuthReqDecEntry 2 }

go3gppAuthReqDecDirDecs OBJECT-TYPE
    SYNTAX      Prid
    STATUS      current
    DESCRIPTION
        "References the first of a list of Directional Decisions
         associated with this instance of go3gppAuthReqDec class.
         There should be at least one and at most two Directional
         Decisions per Authorization Request Decision.
         Hence a value of zeroDotZero is illegal."
    ::= { go3gppAuthReqDecEntry 3 }

--
-- 3GPP Go ICID Table
--
go3gppIcidTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppIcidEntry
    PIB-ACCESS  install
    STATUS      current
    DESCRIPTION
        "Represents the collection of ICID entries"
    ::= { go3gppDecInfoClasses 3 }

go3gppIcidEntry OBJECT-TYPE
    SYNTAX      Go3gppIcidEntry
    STATUS      current
    DESCRIPTION
        "Represents the ICID Entry"
    PIB-INDEX  { go3gppIcidPrid }
    UNIQUENESS { go3gppIcidValue }
    ::= { go3gppIcidTable 1 }

Go3gppIcidEntry ::= SEQUENCE {
    go3gppIcidPrid      InstanceId,
    go3gppIcidValue    OCTET STRING,
    go3gppIcidNext     Prid
}

go3gppIcidPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
         instance of the go3gppIcid class."
    ::= { go3gppIcidEntry 1 }

go3gppIcidValue OBJECT-TYPE
    SYNTAX      OCTET STRING

```

```

STATUS          current
DESCRIPTION
    "The ICID itself. "
 ::= { go3gppIcidEntry 2 }

go3gppIcidNext OBJECT-TYPE
SYNTAX          Prid
STATUS          current
DESCRIPTION
    "References the next go3gppIcidEntry of a list of ICIDs
    associated with this instance of go3gppAuthReqDec class.
    There should be one ICID on this list for each Binding
    Information in the corresponding Authorization Request.
    A value of zeroDotZero indicates the end of the list of
    ICIDs associated with an Authorization Request Decision."
DEFVAL { zeroDotZero }
 ::= { go3gppIcidEntry 3 }

--
-- 3GPP Go Authorization Request Directional Decision Table
--
go3gppAuthReqDirDecTable OBJECT-TYPE
SYNTAX          SEQUENCE OF Go3gppAuthReqDirDecEntry
PIB-ACCESS      install
STATUS          current
DESCRIPTION
    "This table represents the authorization request decision for
    unique direction (e.g. uplink and downlink). "
 ::= { go3gppDecInfoClasses 4 }

go3gppAuthReqDirDecEntry OBJECT-TYPE
SYNTAX          Go3gppAuthReqDirDecEntry
STATUS          current
DESCRIPTION
    "There should be one of these per direction per AuthReqDec."
PIB-INDEX { go3gppAuthReqDirDecPrid }
UNIQUENESS { }
 ::= { go3gppAuthReqDirDecTable 1 }

Go3gppAuthReqDirDecEntry ::= SEQUENCE {
    go3gppAuthReqDirDecPrid      InstanceId,
    go3gppAuthReqDirDecDirection INTEGER,
    go3gppAuthReqDirDecQos      Prid,
    go3gppAuthReqDirDecGates    Prid,
    go3gppAuthReqDirDecNext     Prid
}

go3gppAuthReqDirDecPrid OBJECT-TYPE
SYNTAX          InstanceId
STATUS          current
DESCRIPTION
    "An arbitrary integer index that uniquely identifies an
    instance of the go3gppAuthReqDirDec class."
 ::= { go3gppAuthReqDirDecEntry 1 }

go3gppAuthReqDirDecDirection OBJECT-TYPE
SYNTAX          INTEGER {
                uplink (1),
                downlink (2)
                }
STATUS          current
DESCRIPTION
    "Indicates the direction this decision applies to."
 ::= { go3gppAuthReqDirDecEntry 2 }

go3gppAuthReqDirDecQos OBJECT-TYPE
SYNTAX          Prid
STATUS          current
DESCRIPTION
    " The Authorized QoS. References the go3gppQos class."
 ::= { go3gppAuthReqDirDecEntry 3 }

```

```

go3gppAuthReqDirDecGates OBJECT-TYPE
    SYNTAX      Prid
    STATUS      current
    DESCRIPTION
        "References the first instance of a list of the go3gppGate class."
    ::= { go3gppAuthReqDirDecEntry 4 }

go3gppAuthReqDirDecNext OBJECT-TYPE
    SYNTAX      Prid
    STATUS      current
    DESCRIPTION
        "References the next instance of a list of
        go3gppAuthReqDirDec class."
    ::= { go3gppAuthReqDirDecEntry 5 }

--
-- 3GPP Go QoS Table
--
go3gppQoSTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppQoSEntry
    PIB-ACCESS  install
    STATUS      current
    DESCRIPTION
        "This table represents the Authorised QoS.
        It is referenced by the go3gppAuthReqDirDecQoS entry of the
        go3gppAuthReqDirDecEntry class."
    ::= { go3gppDecInfoClasses 5 }

go3gppQoSEntry OBJECT-TYPE
    SYNTAX      Go3gppQoSEntry
    STATUS      current
    DESCRIPTION
        "There should be one of these per direction per AuthReqDec."
    PIB-INDEX { go3gppQoSPrId }
    UNIQUENESS { }
    ::= { go3gppQoSTable 1 }

Go3gppQoSEntry ::= SEQUENCE {
    go3gppQoSPrId          InstanceId,
    go3gppQoSServiceClass INTEGER,
    go3gppQoSDataRateUnit INTEGER,
    go3gppQoSDataRate     Unsigned32
}

go3gppQoSPrId OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppQoS class."
    ::= { go3gppQoSEntry 1 }

go3gppQoSServiceClass OBJECT-TYPE
    SYNTAX      INTEGER {
        qosclassA (1),
        qosclassB (2),
        qosclassC (3),
        qosclassD (4),
        qosclassE (5),
        qosclassF (6)
    }
    STATUS      current
    DESCRIPTION
        "The QoS Service Class indicates the highest authorized QoS class."
    ::= { go3gppQoSEntry 2 }

go3gppQoSDataRateUnit OBJECT-TYPE

```

```

SYNTAX          INTEGER {
                    bps      (1),
                    kbps     (2),
                    mbps     (3)
                }
STATUS          current
DESCRIPTION
    "Indication of the unit of measure for go3gppQosDataRate,
    in bits per second, kilo bits per second, or mega bits per
    second."
 ::= { go3gppQosEntry 3 }

go3gppQosDataRate OBJECT-TYPE
SYNTAX          Unsigned32
STATUS          current
DESCRIPTION
    "The Data Rate with unit of measure indicated by
    go3gppQosDataRateUnit."
 ::= { go3gppQosEntry 4 }

--
-- 3GPP Go Gate Decision Table
--
--
-- There could be one of these per direction per GateDec.
--
-- This is for changing Gating Status only when used alone
-- (not as part of Direction Decision).

-- go3gppGateDec is sent in a different COPS DEC message
-- from the DEC message carrying go3gppAuthReqDec. PDF must
-- have sent a go3gppAuthReqDec before using go3gppGateDec.

go3gppGateDecTable OBJECT-TYPE
SYNTAX          SEQUENCE OF Go3gppGateDecEntry
PIB-ACCESS      install
STATUS          current
DESCRIPTION
    "This table represents an updated gating decision."
 ::= { go3gppDecInfoClasses 6 }

go3gppGateDecEntry OBJECT-TYPE
SYNTAX          Go3gppGateDecEntry
STATUS          current
DESCRIPTION
    "There should be one of these per direction per AuthReqDec."
PIB-INDEX { go3gppGateDecPrid }
UNIQUENESS { }
 ::= { go3gppGateDecTable 1 }

Go3gppGateDecEntry ::= SEQUENCE {
    go3gppGateDecPrid      InstanceId,
    go3gppGateDecDirection INTEGER,
    go3gppGateDecGates     Prid,
    go3gppGateDecNext      Prid
}

go3gppGateDecPrid OBJECT-TYPE
SYNTAX          InstanceId
STATUS          current
DESCRIPTION
    "An arbitrary integer index that uniquely identifies an
    instance of the go3gppGateDec class."
 ::= { go3gppGateDecEntry 1 }

go3gppGateDecDirection OBJECT-TYPE
SYNTAX          INTEGER {
                    uplink  (1),
                    downlink (2)
                }

```

```

    }
    STATUS          current
    DESCRIPTION
    "References the gate direction."
    ::= { go3gppGateDecEntry 2 }

go3gppGateDecGates OBJECT-TYPE
    SYNTAX          Prid
    STATUS          current
    DESCRIPTION
    "References the first instance of a list of go3gppGate class."
    ::= { go3gppGateDecEntry 3 }

go3gppGateDecNext OBJECT-TYPE
    SYNTAX          Prid
    STATUS          current
    DESCRIPTION
    "References the next instance of a list of go3gppGateDec class."
    ::= { go3gppGateDecEntry 4 }

--
-- 3GPP Go Gate Table
--
go3gppGateTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF Go3gppGateEntry
    PIB-ACCESS      install
    STATUS          current
    DESCRIPTION
    "PRC representing a Gate."
    ::= { go3gppDecInfoClasses 7 }

go3gppGateEntry OBJECT-TYPE
    SYNTAX          Go3gppGateEntry
    STATUS          current
    DESCRIPTION
    "Each instance represents one Gate."
    PIB-INDEX { go3gppGatePrid }
    UNIQUENESS { }
    ::= { go3gppGateTable 1 }

Go3gppGateEntry ::= SEQUENCE {
    go3gppGatePrid          InstanceId,
    go3gppGateFilter        Prid,
    go3gppGateStatus        INTEGER,
    go3gppGateNext          Prid
}

go3gppGatePrid OBJECT-TYPE
    SYNTAX          InstanceId
    STATUS          current
    DESCRIPTION
    "An arbitrary integer index that uniquely identifies an
    instance of the go3gppGate class."
    ::= { go3gppGateEntry 1 }

go3gppGateFilter OBJECT-TYPE
    SYNTAX          Prid
    STATUS          current
    DESCRIPTION
    "References an entry in frwkIpFilterTable (Framework PIB)
    that describes the applicable classification filter.

    When a decision requiring the definition of an IP filter
    is sent to the GGSN, the IP filter will be represented by the
    IP filter definition frwkIpFilterTable, provided by the
    Framework PIB, RFC 3318. Such IP filter frwkIpFilterTable
    must be part of the same decision message. The attribute
    go3gppGateFilter is used to reference the frwkIpFilterTable
    entry for this Gate.

```

Wildcarding of the attributes for deriving the address and protocol values is as specified in RFC 3318 [15]. Wildcarding of the source ports is achieved as follows:

- frwkIpFilterSrcL4PortMin shall be set to 0,
- and frwkIpFilterSrcL4PortMax shall be set to 65535

The frwkBaseFilterNegation attribute of the frwkBaseFilterTable is not required, its "not-used" condition is indicated by setting its value to "false".

The frwkIpFilterDscp and frwkIpFilterFlowId~~following~~ attributes of the frwkIpFilterTable are not required, their "not-used" condition is indicated by setting their values to -1.~~and shall have a length of 0 in its encoding: frwkBaseFilterNegation, frwkIpFilterDscp, and frwkIpFilterFlowId~~

A value of zeroDotZero indicates no filter is used with this go3gppGate."

```
::= { go3gppGateEntry 2 }
```

go3gppGateStatus OBJECT-TYPE

```
SYNTAX          INTEGER {
                    close  (1),
                    open   (2)
                }
```

```
STATUS          current
```

DESCRIPTION

"Indicates if this gate will allow traffic to flow."

```
DEFVAL { close }
```

```
::= { go3gppGateEntry 3 }
```

go3gppGateNext OBJECT-TYPE

```
SYNTAX          Prid
```

```
STATUS          current
```

DESCRIPTION

"Reference the next Gate on a list of go3gppGate instances.

A value of zeroDotZero indicates this is the last Gate on the list."

```
::= { go3gppGateEntry 4 }
```

-- 3GPP Go Reports

-- PRCs for carrying the Decision enforcement result sent from PEP to PDF,

-- carried using the COPS REPORT message.

-- These PRCs include support for the success or failure of the PEP in

-- carrying out the PDF's decision or -change of the state in the GGSN.

--

go3gppReportTable OBJECT-TYPE

```
SYNTAX          SEQUENCE OF Go3gppReportEntry
```

```
PIB-ACCESS      notify
```

```
STATUS          current
```

DESCRIPTION

"This table represents the success or failure of the decision enforcement and state changes in the PEP."

```
::= { go3gppReportClasses 1 }
```

go3gppReportEntry OBJECT-TYPE

```
SYNTAX          Go3gppReportEntry
```

```
STATUS          current
```

DESCRIPTION

" "

```
PIB-INDEX { go3gppReportPrid }
```

```
UNIQUENESS { }
```

```
::= { go3gppReportTable 1 }
```

Go3gppReportEntry ::= SEQUENCE {

```
    go3gppReportPrid      InstanceId,
```

```
    go3gppReportStatus    INTEGER,
```

```
    go3gppReportDetails   Prid
```

}_

```

go3gppReportPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppReport class."
    ::= { go3gppReportEntry 1 }

go3gppReportStatus OBJECT-TYPE
    SYNTAX      INTEGER {
                success (1),
                failure (2),
                usage  (3) }
    STATUS      current
    DESCRIPTION
        "When Status is:
        success: Indicates the successful implementation of the
        decision.
        go3gppReportDetails:
        Reference an instance of go3gppRprtGPRSchrgInfo
        for initial authorization request decision;
        References nothing otherwise (contains the value
        zeroDotZero).

        Failure: Indicates the failure of implementing the decision.

        go3gppReportDetails may references an Error object,
        or may have the value zeroDotZero when no error
        object is needed, in which case COPS and COPS-PR
        error codes and error objects are sufficient.

        Usage: go3gppReportDetails references an instance of
        go3gppRprtUsage class."

    ::= { go3gppReportEntry 2 }

```

```

go3gppReportDetails OBJECT-TYPE
    SYNTAX      Prid
    STATUS      current
    DESCRIPTION
        "May reference an instance of go3gppRprtGPRSchrgInfo,
        go3gppRprtError(not defined), or go3gppRprtUsage class,
        or may have the value of zeroDotZero depending on the value of
        go3gppReportStatus."
    ::= { go3gppReportEntry 3 }

```

```

go3gppRprtGPRSchrgInfoTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppRprtGPRSchrgInfoEntry
    PIB-ACCESS  notify
    STATUS      current
    DESCRIPTION
        "This table represents the GPRS Charging information"
    ::= { go3gppReportClasses 2 }

```

```

go3gppRprtGPRSchrgInfoEntry OBJECT-TYPE
    SYNTAX      Go3gppRprtGPRSchrgInfoEntry
    STATUS      current
    DESCRIPTION
        "This entry represents the GPRS Charging Identifier and GGSN address."
    PIB-INDEX  { go3gppRprtGPRSchrgInfoPrid }
    UNIQUENESS { go3gppRprtGPRSchrgInfoAddrType,
                go3gppRprtGPRSchrgInfoGGSNAddr,
                go3gppRprtGPRSchrgInfoGCID }
    ::= { go3gppRprtGPRSchrgInfoTable 1 }

```

```

Go3gppRprtGPRSchrgInfoEntry ::= SEQUENCE {
    go3gppRprtGPRSchrgInfoPrid      InstanceId,

    go3gppRprtGPRSchrgInfoAddrType  InetAddressType,

    go3gppRprtGPRSchrgInfoGGSNAddr  InetAddress,
    go3gppRprtGPRSchrgInfoGCID      OCTET STRING
}

```

```

go3gppRprtGPRSChrgInfoPrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppRprtGPRSChrgInfo class."
        ::= { go3gppRprtGPRSChrgInfoEntry 1 }

go3gppRprtGPRSChrgInfoAddrType OBJECT-TYPE
    SYNTAX      InetAddressType
    STATUS      current
    DESCRIPTION
        "The address type enumeration value to specify
        the type of the packet's IP address."
    REFERENCE
        "Textual Conventions for Internet Network Addresses [INETADDR]."
        ::= { go3gppRprtGPRSChrgInfoEntry 2 }

go3gppRprtGPRSChrgInfoGGSNAddr OBJECT-TYPE
    SYNTAX      InetAddress
    STATUS      current
    DESCRIPTION
        "Contains the IP Address of the GGSN providing the GCID
        upon successful handling of an Authorization Request."
    REFERENCE
        "Textual Conventions for Internet Network Addresses [INETADDR]."
        ::= { go3gppRprtGPRSChrgInfoEntry 3 }

go3gppRprtGPRSChrgInfoGCID OBJECT-TYPE
    SYNTAX      OCTET STRING
    STATUS      current
    DESCRIPTION
        "The GPRS Charging ID related to this Authorization Request."
        ::= { go3gppRprtGPRSChrgInfoEntry 4 }

--
-- Notice go3gppRprtError PRC is currently not defined because all
-- error condition handling is satisfactorily covered by using the
-- standard COPS-PR error handling mechanism and error objects.
-- go3gppRprtError PRC should only be used for 3GPP GO Application
-- error indications if necessary.
--

go3gppRprtUsageTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Go3gppRprtUsageEntry
    PIB-ACCESS  notify
    STATUS      current
    DESCRIPTION
        ""
        ::= { go3gppReportClasses 3 }

go3gppRprtUsageEntry OBJECT-TYPE
    SYNTAX      Go3gppRprtUsageEntry
    STATUS      current
    DESCRIPTION
        "This entry represents the PEP state changes."
    PIB-INDEX  { go3gppRprtUsagePrid }
    UNIQUENESS { go3gppRprtUsageIndication }
    ::= { go3gppRprtUsageTable 1 }

Go3gppRprtUsageEntry ::= SEQUENCE {
    go3gppRprtUsagePrid      InstanceId,
    go3gppRprtUsageIndication  INTEGER
}

go3gppRprtUsagePrid OBJECT-TYPE
    SYNTAX      InstanceId
    STATUS      current
    DESCRIPTION
        "An arbitrary integer index that uniquely identifies an
        instance of the go3gppRprtUsage class."

```

```

 ::= { go3gppRprtUsageEntry 1 }

go3gppRprtUsageIndication OBJECT-TYPE
    SYNTAX          INTEGER {
                        chngdTo0kbs (1),
                        chngdFrom0kbs (2) }
    STATUS          current
    DESCRIPTION
        "Indication of GPRS Usage change.
        chngdTo0kbs indicates changing to 0kbs,
        chngdFrom0kbs indicates changing from 0kbs."
        ::= { go3gppRprtUsageEntry 2 }

-----
--
-- Conformance Section
--

go3gppCompliances          OBJECT IDENTIFIER ::= { go3gppConformance 1 }
go3gppGroups               OBJECT IDENTIFIER ::= { go3gppConformance 2 }

go3gppCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "Describes the requirements for conformance to the
        3GPP GO PIB."

MODULE FRAMEWORK-PIB          -- Defined in RFC 3318 [15]
    MANDATORY-GROUPS {
        frwkPrcSupportGroup,
        frwkDeviceIdGroup,
        frwkBaseFilterGroup,
        frwkIpFilterGroup }

MODULE GO3GPP-PIB -- this module
    MANDATORY-GROUPS {
        go3gppAuthReqCapGroup,
        go3gppAuthReqDecCapGroup,
        go3gppAuthReqHandlerGroup,
        go3gppAuthReqEventGroup,
        go3gppBindingInfoGroup,
        go3gppFlowIdGroup,
        go3gppAuthReqFailDecGroup,
        go3gppAuthReqDecGroup,
        go3gppIcidGroup,
        go3gppAuthReqDirDecGroup,
        go3gppQosGroup,
        go3gppGateDecGroup,
        go3gppGateGroup,
        go3gppReportGroup,
        go3gppRprtGPRSchrgInfoGroup,
        go3gppRprtUsageGroup }
    ::= { go3gppCompliances 1 }

go3gppAuthReqCapGroup OBJECT-GROUP
    OBJECTS {
        go3gppAuthReqCapBindingInfos,
        go3gppAuthReqCapFlowIds
    }
    STATUS current
    DESCRIPTION
        "This Group defines the PIB Objects that describe the
        Authorization Request capabilities."
        ::= { go3gppGroups 1 }

go3gppAuthReqDecCapGroup OBJECT-GROUP
    OBJECTS {
        go3gppAuthReqDecCapIcids
    }
    STATUS current

```

```

DESCRIPTION
    "This Group defines the PIB
    Objects that describe the Authorizzation Decision capabilities."
    ::= { go3gppGroups 2 }

go3gppAuthReqHandlerGroup OBJECT-GROUP
OBJECTS {
    go3gppAuthReqHandlerEnable,
    go3gppAuthReqHandlerBindingInfo
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the Authorizzation request event handler."
    ::= { go3gppGroups 3 }

go3gppAuthReqEventGroup OBJECT-GROUP
OBJECTS {
    go3gppAuthReqEventBindingInfos
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the Authorizzation request events."
    ::= { go3gppGroups 4 }

go3gppBindingInfoGroup OBJECT-GROUP
OBJECTS {
    go3gppBindingInfoToken,
    go3gppBindingInfoFlowIds,
    go3gppBindingInfoNext
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the binding information."
    ::= { go3gppGroups 5 }

go3gppFlowIdGroup OBJECT-GROUP
OBJECTS {
    go3gppFlowIdFlowId,
    go3gppFlowIdNext
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the flow identifier."
    ::= { go3gppGroups 6 }

go3gppAuthReqFailDecGroup OBJECT-GROUP
OBJECTS {
    go3gppAuthReqFailDecReason
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the Authorizzation failure decisions."
    ::= { go3gppGroups 7 }

go3gppAuthReqDecGroup OBJECT-GROUP
OBJECTS {
    go3gppAuthReqDecIcids,
    go3gppAuthReqDecDirDecs
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the Authorizzation decisions."
    ::= { go3gppGroups 8 }

go3gppIcidGroup OBJECT-GROUP
OBJECTS {
    go3gppIcidValue,
    go3gppIcidNext
}
STATUS current
DESCRIPTION
    "This Group defines the PIB

```

```

    Objects that describe the ICID."
 ::= { go3gppGroups 9 }

go3gppAuthReqDirDecGroup OBJECT-GROUP
OBJECTS {
go3gppAuthReqDirDecDirection,
go3gppAuthReqDirDecQos,
go3gppAuthReqDirDecGates,
go3gppAuthReqDirDecNext
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the authorization decision direction."
 ::= { go3gppGroups 10 }

go3gppQosGroup OBJECT-GROUP
OBJECTS {
go3gppQosServiceClass,
go3gppQosDataRateUnit,
go3gppQosDataRate
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the QoS information."
 ::= { go3gppGroups 11 }

go3gppGateDecGroup OBJECT-GROUP
OBJECTS {
go3gppGateDecDirection,
go3gppGateDecGates,
go3gppGateDecNext
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the Gate decision."
 ::= { go3gppGroups 12 }

go3gppGateGroup OBJECT-GROUP
OBJECTS {
go3gppGateFilter,
go3gppGateStatus,
go3gppGateNext
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the gate."
 ::= { go3gppGroups 13 }

go3gppReportGroup OBJECT-GROUP
OBJECTS {
go3gppReportStatus,
go3gppReportDetails
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the PEP reports."
 ::= { go3gppGroups 14 }

go3gppRprtGPRSchrgInfoGroup OBJECT-GROUP
OBJECTS {
go3gppRprtGPRSchrgInfoAddrType,
go3gppRprtGPRSchrgInfoGGSNAddr,
go3gppRprtGPRSchrgInfoGCID
}
STATUS current
DESCRIPTION
    "This Group defines the PIB
    Objects that describe the charging information."
 ::= { go3gppGroups 15 }

```

```
go3gppRprtUsageGroup OBJECT-GROUP
  OBJECTS {
    go3gppRprtUsageIndication
  }
  STATUS current
  DESCRIPTION
    "This Group defines the PIB
    Objects that describe the report usage."
  ::= { go3gppGroups 16 }
```

END

END OF AMENDED SECTIONS

3GPP TSG-CN WG3 Meeting #28
San Diego, USA, 19th – 23rd May 2003.

Tdoc #N3-030387

CR-Form-v7
CHANGE REQUEST
⌘ 29.207 CR 091 ⌘ rev 1 ⌘ Current version: 5.3.0 ⌘

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

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

Title:	⌘ Definition of Authorization token		
Source:	⌘ TSG_CN WG3 [Nortel Networks]		
Work item code:	⌘ E2EQoS-IW	Date:	⌘ 23/5/2003
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 be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ The term "Authorization Token" is used throughout the document and it is not defined. There is a reference to RFC 3313 to indicate how the Authorization Token is generated. However a definition of this important term in the definition section is missing.
Summary of change:	⌘ Definition of "authorization token" in the definition section is added. The definition is brought from the RFC 3313
Consequences if not approved:	⌘ An important term of this specification is not defined. This may lead to readability problems and lack of clarity.

Clauses affected:	⌘ 3				
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Other comments:	⌘				

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Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

First amended section

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply:

Authorization Token: consist of the IMS session identifier and the PDF identifier. It is used for authorizing the QoS for the media stream(s). The UE shall include an authorization token in order to obtain QoS authorization for the IMS session. The UE obtains this authorization token via SIP from the P-CSCF by means of an extension SIP header described in RFC 3313 [22]. The P-CSCF communicates with the PDF in order to obtain a suitable authorization token for the UE.

Common Open Policy Service (COPS) protocol: is a simple query and response protocol that can be used to exchange policy information between a policy server (Policy Decision Point) and its clients (Policy Enforcement Points)

Flow identifier: used for the identification of an IP flow within a media component associated with a SIP session

EXAMPLE: A single, unidirectional media component may contain one IP flow, or two IP flows in the case of an RTP media stream. In case of a bi-directional flow, the same flow identifier is used for both directions. A flow identifier consists of two parts: 1) Media component number defined in increasing order according to the sequence of the "m=" lines in the SDP (RFC 2327 [17]), session description and 2) IP flow number defined in the order of increasing port numbers within each media component, see annex C.

Go Interface: interface between PDF and GGSN (3GPP TS 23.002 [2])

GPRS Charging ID (GCID): the Charging Id generated by the GGSN as defined in 3GPP TS 29.060 [20].

IP Bearer Service Manager: uses standard IP mechanisms to manage the IP Bearer Service. It resides in the GGSN and optionally in the UE

Media component: is a part of an SDP session description conveying information about one media stream (e.g. type, format, IP address, port, transport protocol, bandwidth, direction)

The media stream described by a media component can be either bi- or unidirectional. A media stream containing an RTP flow may also contain an associated RTCP flow. An SDP session description can consist of more than one media component. A media component shall not be deleted nor its position changed within the SDP session description. A media component line where the port number has previously been set to 0 may be reused for a new media component.

Policy Decision Function (PDF): is a logical policy decision element that uses standard IP mechanisms to implement policy in the IP media layer

The PDF makes decisions in regard to network based IP policy using policy rules, and communicates these decisions to the PEP in the GGSN.

Proxy Call Session Control Function (P-CSCF): is a network element providing session management services (e.g. telephony call control)

Policy Enforcement Point (PEP): is a logical entity that enforces policy decisions made by the PDF. It resides in the IP BS Manager of the GGSN

Policy Information Base (PIB): is a set of policy data carried by COPS-PR

The protocol assumes a named data structure, known as a Policy Information Base (PIB), to identify the type and purpose of solicited and unsolicited policy information that is sent from the Policy Decision Point to the Policy Enforcement Point for provisioning policy or sent from the Policy Enforcement Point to the Policy Decision Point as a notification.

Provisioning Instance Identifier (PRID): uniquely identifies an instance of a PRC

QoS class: identifies a bearer service (which is associated with a set of bearer service characteristics)

Translation/mapping function: provides the inter-working between the mechanisms and parameters used within the UMTS Bearer Service and those used within the IP Bearer Service

UMTS Bearer Service Manager: handles resource reservation requests from the UE. It resides in the GGSN and the UE

End of amended sections

CHANGE REQUEST

29.207 **CR** **094** # rev **1** # Current version: **5.3.0**

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

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

Title:	# Clarification to Binding Info Handling		
Source:	# TSG_CN WG3 [Nokia, Ericsson]		
Work item code:	# E2EQoS	Date:	# 23/05/2003
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 be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# 1. As specified in the TS 24.229, the UE shall establish a separate PDP context (or contexts) for the media when it receives the authorisation token for the first time in the SIP message, and the UE shall signal the token and flow identifier(s) to the GGSN by inserting them within the Traffic Flow Template IE in the ACTIVATE SECONDARY PDP CONTEXT REQUEST message (TFT doesn't exist in ACTIVATE PDP CONTEXT REQUEST). Consequently, the UE may carry media on the primary PDP context only in the case when SBLP is not applied. Thus the binding mechanism handling by the GGSN in the case of a PDP context activation and related error cases may be applied only for the activation of a <u>secondary</u> PDP context.
	2. If the UE tries to modify a general purpose PDP context used for carrying SIP signalling, to carry also media flow(s) when SBLP is applied, the modification should be rejected by the GGSN, because SIP signalling packets will not pass through the media flow filter(s).
	3. The IMS signaling flag must be taken into account in the binding information handling in the secondary PDP context activation and PDP context modification, otherwise the secondary PDP context for IMS signaling may not be successfully established or the QoS may be unnecessarily downgraded.
	4. The error cases in GGSN are described in several different ways, and with unnecessary complexity.
Summary of change:	# Secondary PDP context activation and PDP context modification identified correctly in relevant places in the text.
	If the previously non-authorized PDP context is modified with the binding

information, the PDP context modification shall be rejected by the GGSN.

The binding information and the IMS signaling flag in the same PDP context is handled as an error case.

The description of the existing error code "Binding information not allowed" extended to cover also above two error cases.

The relationship between the secondary PDP context for IMS signaling and the binding information is clarified.

A unified way introduced to specify the error situations, unnecessary references to 3GPP TS 24.008 removed.

Consequences if not approved:

- ⌘ Inexact terminology used, which might lead to wrong interpretations and hence erroneous implementations.
- IMS signaling flag not taken into account, which might lead to erroneous implementations.
- There is a potential error case from which the UE cannot recover, because it doesn't receive any feedback from the network.

Clauses affected:

⌘ 4.3.1.5, 5.1.1, 6.1.1 and Annex D

Other specs affected:

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

Other comments:

⌘

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

< First amended section >

4.3.1.5 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. The binding information associates a PDP context with one or more media components of an IMS session. The GGSN may receive one or more sets of the binding information during an activation or modification of a [secondary](#) PDP context. Each set of binding information consists of an authorisation token and the flow identifier(s) related to the IP flows of the actual media component. If there is more than one media component to be transported within the PDP context the binding information includes the flow identifier(s) for the IP flows of each of the media components.

The GGSN shall store the binding information and apply it to correlate events and actions between the PDP context and the service-based local policy.

The GGSN shall determine the IP address of the PDF from the PDF identifier received as part of the Authorization Token. This identifier shall be in the format of a fully qualified domain name. If the GGSN receives multiple sets of binding information in the [secondary](#) PDP context activation, the GGSN shall search for the first Authorization Token containing the PDF identifier (Authorization Token is of type AUTH_SESSION and contains AUTH_END_ID) and use that to identify the correct PDF. If none of the tokens included in the binding information are of type AUTH_SESSION, or they do not contain an AUTH_ENT_ID attribute to resolve the PDF address, then the GGSN shall reject the [secondary](#) PDP context activation request. The reason for the rejection is indicated to the UE with the error code value "Invalid binding information" ([see annex D](#)). ~~The error code is transferred to the UE in the Protocol Configuration Options information element as defined in 3GPP TS 24.008 [12].~~

The GGSN shall forward the binding information received from the UE to the PDF. If multiple sets of binding information are received by the GGSN, it shall forward them to the PDF.

If the binding information is successfully modified using the PDP context modification procedure, the GGSN shall replace the old binding information with the new binding information.

When the GGSN receives a [secondary](#) PDP context activation request to an APN for which the Go interface is enabled and no binding information is received, the GGSN may either reject the [secondary](#) PDP context activation request, or accept it within the limit imposed by a locally stored QoS policy. This local QoS policy shall be operator configurable within the GGSN. If the request is rejected, the reason for the rejection is indicated to the UE with the error code value "Missing binding information" ([see annex D](#)). ~~The error code is transferred to the UE in the Protocol Configuration Options information element as defined in 3GPP TS 24.008 [12].~~

When the GGSN receives a [secondary](#) PDP context modification request to an APN for which the Go interface is enabled, and no binding information is received, the GGSN shall reject the [secondary](#) PDP context modification if binding information has been previously provided for the PDP context. If no binding information has previously been received, the GGSN may either reject the [secondary](#) PDP context modification request, or accept it within the limit imposed by a locally stored QoS policy. This local QoS policy shall be operator configurable within the GGSN. If the request is rejected, the reason for the rejection is indicated to the UE with the error code value "Missing binding information" ([see annex D](#)). ~~The error code is transferred to the UE in the Protocol Configuration Options information element as defined in 3GPP TS 24.008 [12].~~

When binding information is received, the GGSN shall ignore any UE supplied TFT, and filters in that TFT shall not be installed in the packet processing table.

~~If the Go interface is disabled and the GGSN receives a Create PDP Context Request or Update PDP Context Request message that includes binding information, the GGSN shall reject the request with the error code "Binding information not allowed" (see annex D).~~

The GGSN shall reject a secondary PDP context activation or PDP context modification request with the error code "Binding information not allowed" (see annex D) in the following cases:

- The Go interface is disabled and the GGSN receives a Create PDP Context Request or Update PDP Context Request message that includes binding information.
- The GGSN receives a Create PDP Context Request or Update PDP Context Request message that includes both binding information and the IM CN Subsystem Signalling Flag.

- The GGSN receives an Update PDP Context Request message that includes binding information to modify a previously non-authorized PDP context.

< Next amended section >

5.1.1 Initial authorization at PDP context activation

The GGSN ~~may~~ receives binding information during the activation of a [secondary](#) PDP context by the UE. To perform initial authorization at the [secondary](#) PDP context activation the GGSN shall send an authorisation request to the PDF including the binding information received from the UE.

The GGSN identifies the required PDF from the authorisation token of the binding information. The authorisation token is formatted according to the structure of the policy element AUTH_SESSION defined in [11]. The policy element AUTH_SESSION shall include the AUTH_ENT_ID and the SESSION_ID attributes. The GGSN checks for that Policy Element and retrieves the AUTH_ENT_ID attribute from this. If this is in the form of a Fully Qualified Domain Name, then this is used to identify the correct PDF.

The GGSN authorisation request message to the PDF shall allow the GGSN to request policy information for authorisation of the media components carried by a PDP context identified by binding information.

When the GGSN receives the PDF decision regarding authorisation of the media components, the GGSN shall enforce the policy decision. To enforce the policy decision, the GGSN shall install the packet filters received from the PDF, and ignore the UE supplied TFT.

If the PDF decision information indicates that the binding information provided by the GGSN is authorised, the GGSN shall proceed with activation of the [secondary](#) PDP context. The GGSN shall map the authorized QoS resources into authorized resources for the bearer admission control.

To ensure charging correlation, the GGSN shall send the GCID and GGSN address information to the PDF after the successful establishment of the [secondary](#) PDP context, i.e. with the report following the initial authorization decision.

When the PDF detects that the binding information provided by the GGSN is not associated with an ongoing SIP session at application layer, or is otherwise unable to authorise the binding information, the GGSN will receive a COPS decision message from the PDF carrying both an INSTALL and REMOVE decision. The reason for the rejection is indicated by the INSTALL decision with an appropriate authorisation request failure reason. The GGSN shall reject the [secondary](#) PDP context activation with a corresponding error code, see annex D. ~~The error code is transferred to the UE in the Protocol Configuration Options information element as defined in 3GPP TS 24.008 [12].~~ The GGSN shall subsequently remove this state according to the REMOVE decision. For an initial authorisation request, the GGSN shall then send a COPS Delete Request State (DRQ) message to the PDF to remove the state in the GGSN and the PDF.

When the GGSN sends an authorization request to the PDF but the PDF does not respond with the decision message or the communication between the GGSN and the PDF fails, the GGSN shall reject the [secondary](#) PDP context activation with the error code "Authorizing entity temporarily unavailable" (see annex D).

< Next amended section >**6.1.1 TCP connection for COPS protocol**

The GGSN receives the PDF identifier received as part of the Authorization Token, during the [secondary](#) PDP context activation [or PDP context modification](#) procedure. The GGSN resolves the PDF IP address from the PDF identifier, which is in the form of a fully qualified domain name.

If there is no existing TCP connection to the PDF, the GGSN shall establish a TCP connection for COPS interactions to the PDF. The GGSN shall use an existing TCP connection to the PDF, whenever present.

The TCP connection between the GGSN and the PDF may be pre-established by configuring the PDF addresses on the GGSN.

All communication between the GGSN and the PDFs shall use a standardised Client-Type with a corresponding standardised PIB, as defined in annex B.

The validity of the PDF may be ensured either by using a private DNS for resolving the PDF IP address or by configuring a list of allowed PDF IP addresses on the GGSN.

< Next amended section >

Annex D (normative): Go interface related error code values for the PDP context handling

The following error codes are used to indicate Go interface related errors from the GGSN to the UE. The error codes listed below are transferred to the UE in the Protocol Configuration Options information element as defined in 3GPP TS 24.008 [12]:

The error code values transported in the container contents field shall be the binary representations of the error code numbers listed below.

In all the cases listed below a common GTP cause code, "User authentication failed", see 3GPP TS 29 060 [20], shall be used in the response message.

Error code No. 1 "Authorization failure of the request"

This error code indicates that the [secondary](#) PDP context activation/~~or PDP context~~ modification request is rejected because the authorizing entity is unable to provide an authorization decision for the binding information.

Error code No. 2 "Missing binding information"

This error code indicates that the [secondary](#) PDP context activation/~~or PDP context~~ modification request is rejected because the binding information was not included in the request although required.

Error code No. 3 "Invalid binding information"

This error code indicates that the [secondary](#) PDP context activation/~~or PDP context~~ modification request is rejected because the authorizing entity could not be resolved from the binding information.

Error code No. 4 "Binding information not allowed"

This error code indicates that the [secondary](#) PDP context activation/~~or PDP context~~ modification request is rejected because the Go interface is disabled or not supported in the GGSN and hence binding information is not allowed. [The error code may also indicate that the PDP context modification is rejected because binding information is not allowed for modification of previously non-authorized PDP context or that the binding information is not allowed when the PDP context is indicated to be used for IMS signaling.](#)

Error code No.5 "Authorizing entity temporarily unavailable"

This error code indicates that the [secondary](#) PDP context activation/~~or PDP context~~ modification request is rejected because the authorizing entity indicated by the binding information is temporarily unavailable.

Error code No. 6 "No corresponding session"

This error code indicates that the [secondary](#) PDP context activation request is rejected because the authorizing entity cannot associate the Authorisation token of binding information with any ongoing session or binding information contains invalid flow identifier(s). The error code also indicates that the PDP context modification request is rejected by the authorizing entity because the authorization token has changed or the binding information contains invalid flow identifier(s).

Error code No. 7 "Invalid bundling"

This error code indicates that the [secondary](#) PDP context activation request is rejected because the authorizing entity doesn't allow the grouping of the flow identifiers contained in the PDP context activation request to be carried in the requested PDP Context.

CR-Form-v7

CHANGE REQUEST

⌘ **29.207 CR 099** ⌘ rev **1** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘ Definition of Client Handle.		
Source:	⌘ TSG_CN WG3 [Ericsson]		
Work item code:	⌘ E2eQoS	Date:	⌘ 23/5/2003
Category:	⌘ F	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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 term "Client Handle", which is an important term for both the GGSN and the PDF, is used throughout the document is not defined.		
Summary of change:	⌘ A definition of the term 'Client Handle' is added.		
Consequences if not approved:	⌘ May lead to readability problems and lack of clarity..		

Clauses affected:	⌘ 3.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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.

Start of modification

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply:

Client Handle: [an object in the COPS messages used as a unique number to correlate all the COPS messages with the same dialogue. Over the Go interface the Client Handle is used to correlate COPS messages with respect to the same PDP Context. For the exact definition see RFC 2748 \[7\] and RFC 3084 \[8\].](#)

Common Open Policy Service (COPS) protocol: is a simple query and response protocol that can be used to exchange policy information between a policy server (Policy Decision Point) and its clients (Policy Enforcement Points)

Flow identifier: used for the identification of an IP flow within a media component associated with a SIP session

EXAMPLE: A single, unidirectional media component may contain one IP flow, or two IP flows in the case of an RTP media stream. In case of a bi-directional flow, the same flow identifier is used for both directions. A flow identifier consists of two parts: 1) Media component number defined in increasing order according to the sequence of the "m=" lines in the SDP (RFC 2327 [17]), session description and 2) IP flow number defined in the order of increasing port numbers within each media component, see annex C.

Go Interface: interface between PDF and GGSN (3GPP TS 23.002 [2])

GPRS Charging ID (GCID): the Charging Id generated by the GGSN as defined in 3GPP TS 29.060 [20].

IP Bearer Service Manager: uses standard IP mechanisms to manage the IP Bearer Service. It resides in the GGSN and optionally in the UE

Media component: is a part of an SDP session description conveying information about one media stream (e.g. type, format, IP address, port, transport protocol, bandwidth, direction)

The media stream described by a media component can be either bi- or unidirectional. A media stream containing an RTP flow may also contain an associated RTCP flow. An SDP session description can consist of more than one media component. A media component shall not be deleted nor its position changed within the SDP session description. A media component line where the port number has previously been set to 0 may be reused for a new media component.

Policy Decision Function (PDF): is a logical policy decision element that uses standard IP mechanisms to implement policy in the IP media layer

The PDF makes decisions in regard to network based IP policy using policy rules, and communicates these decisions to the PEP in the GGSN.

Proxy Call Session Control Function (P-CSCF): is a network element providing session management services (e.g. telephony call control)

Policy Enforcement Point (PEP): is a logical entity that enforces policy decisions made by the PDF. It resides in the IP BS Manager of the GGSN

Policy Information Base (PIB): is a set of policy data carried by COPS-PR

The protocol assumes a named data structure, known as a Policy Information Base (PIB), to identify the type and purpose of solicited and unsolicited policy information that is sent from the Policy Decision Point to the Policy Enforcement Point for provisioning policy or sent from the Policy Enforcement Point to the Policy Decision Point as a notification.

Provisioning Instance Identifier (PRID): uniquely identifies an instance of a PRC

QoS class: identifies a bearer service (which is associated with a set of bearer service characteristics)

Translation/mapping function: provides the inter-working between the mechanisms and parameters used within the UMTS Bearer Service and those used within the IP Bearer Service

UMTS Bearer Service Manager: handles resource reservation requests from the UE. It resides in the GGSN and the UE

End of modifications

CHANGE REQUEST

⌘ **29.207 CR 075** ⌘ rev **3** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘ Remove Decision		
Source:	⌘ TSG_CN WG3 [Siemens]		
Work item code:	⌘ E2E QoS	Date:	⌘ 08/05/2003
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:	⌘ According to the COPS-PR RFC 3084 some necessary information for the Remove_Decision are missing.		
Summary of change:	⌘ The description of the Remove_Decision is extended by: - information on the usage of the Request State flag and the command code - the R-type and M-type.		
Consequences if not approved:	⌘ Without these information a correct implementation is not possible.		

Clauses affected:	⌘ 6.3.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
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Other comments:	⌘ A paragraph in the Annex E was corrected because the DRQ message is only sent from the GGSN to the PDF.										

Start of modified section

6.3.2 Message description

The following messages and events are available on the Go interface (after the initial policy provisioning described in subclause 6.3.1.5):

- Authorisation_Request (REQ) (GGSN→PDF):

This event allows the GGSN to request authorisation data from the PDF. It contains the following information:

- Client Handle;
- Binding Information.

The R-type = 0x08 for configuration request is used here and M-type = 0x02 create event state is used here.

- Authorisation_Decision (DEC)(PDF→GGSN):

This event provides the GGSN with the relevant authorisation data. The event contains the following information:

- Client Handle;
- ICID(s) (only in the initial Authorisation_Decision) .Only one ICID is transferred in this Release. The format of the ICID is defined in 3GPP TS 32.225 [21];
- Unidirectional set (this parameter shall appear once for each direction (uplink and downlink)):
 - Direction indicator;
 - "Authorised QoS";
 - Gate description (this parameter shall appear once for each required gate for this direction):
 - Filter Specification - The information about the authorised IP end points addresses and ports is detailed below. The Filter Specification parameters are:
 - Source IP address;
 - Destination IP address;
 - Source ports;
 - Destination ports;
 - Protocol ID.

The Source and Destination ports are described with a range consisting of a minimum and maximum value. If only one port is authorised, the minimum value and maximum value of the range are identical.

A filter specification describing more than one IP flow shall be only used in case of identical Protocol IDs, IP addresses and successive port numbers (e.g. RTP and RTCP flow of a media component). Furthermore, the gate status of all IP flows described by this filter specification shall be identical, too.

The Base and IP Filter definitions from the IETF Framework PIB [15] shall be used in the 3GPP Go PIB to represent the filter specification. Only a subset of the available filter attributes shall be used. The attributes frwkBaseFilterNegation, frwkIpFilterDscp, and frwkIpFilterFlowId in the filter description shall have the length field in its encoding set to 0 by the PDF to indicate they are not used. The GGSN shall ignore them if they are set otherwise. Wildcarding of filter elements is detailed in Annex B.

- Gate status (opened/closed)

The R-type = 0x08 for configuration request is used here and M-type = 0x02 create event state is used here.

- Authorisation_Failure (DEC) (PDF→GGSN):

This event provides the GGSN with an indication of an authorisation failure, and may carry additional reason details. The event contains the following information:

- Client Handle;
- Authorisation failure (including any provided reason information).

The R-type = 0x08 for configuration request is used here and M-type = 0x04 terminate event state is used here.

- Gate Decision (DEC) (PDF→GGSN):

The Gate Decision indicates to the GGSN the new status of the gate(s) established for a client handle (PDP context). The gate status indicates to the GGSN that the gate shall be opened or closed. Only the gate(s) for which the status is changed are indicated by this event. The event contains the following information:

- Client Handle;
- Unidirectional set (this parameter shall appear once for each direction for which gates are being updated (uplink and/or downlink)):
 - Direction indicator;
 - Gate description (this parameter shall appear once for each gate to be modified for this direction) :
 - Filter Specification - The information about the authorised IP end points addresses and ports is detailed below. The Filter Specification parameters are:
 - Source IP address;
 - Destination IP address;
 - Source ports;
 - Destination ports;
 - Protocol ID.

The Source and Destination ports are described with a range consisting of a minimum and maximum value. If only one port is authorised, the minimum value and maximum value of the range are identical.

A filter specification describing more than one IP flow shall be only used in case of identical Protocol IDs, IP addresses and successive port numbers (e.g. RTP and RTCP flow of a media component). Furthermore, the gate status of all IP flows described by this filter specification shall be identical, too.

The Base and IP Filter definitions from the IETF Framework PIB [15] shall be used in the 3GPP Go PIB to represent the filter specification. Only a subset of the available filter attributes shall be used. The attributes frwkBaseFilterNegation, frwkIpFilterDscp, and frwkIpFilterFlowId in the filter description shall have the length field in its encoding set to 0 by the PDF to indicate they are not used. The GGSN shall ignore them if they are set otherwise. Wildcarding of filter elements is detailed in Annex B.

- Gate status (opened/closed)

NOTE: The opening of the gate may occur at the same time / be part of the authorisation decision event.

The R-type = 0x08 for configuration request is used here and M-type = 0x03 update event state is used here.

- Report (RPT) (GGSN→PDF):

- Authorisation_report; Gate_report:

The GGSN sends a COPS RPT message back to the PDF reporting that it enforced or not the Authorisation_Decision, or the Gate_Decision.

The events contain the following information:

- Client Handle;
- Success / Failure.
- The Authorization_report of the initial Authorisation_Decision includes:

- GCID;
- GGSN address.

- Report of state changes:

The GGSN sends the report of state change message to the PDF reporting that the maximum bit rate for the PDP context is modified to 0 kbps or that the maximum bit rate for the PDP context is changed from 0 kbps.

The event contains the following information:

- Client Handle;
- Maximum bit rate (set to 0 kbps / changed from 0 kbps).

- Delete request state (DRQ) (GGSN→PDF):

The GGSN informs the PDF via the delete request state message, that the PDP context is deactivated and the request state identified by the client handle is no longer available/relevant at the GGSN, so the corresponding state shall also be removed at the PDF.

The DRQ message includes the reason why the request state was deleted.

The event contains the following information:

- Client Handle;
- Reason code: "Tear", Sub-code: deactivation of the PDP context.

- Remove_Decision (PDF→GGSN):

The PDF uses the Remove_Decision to inform the GGSN that the PDF revokes the authorized resources for the client handle (PDP context). [The Remove_Decision is a specific Decision message with the COPS Decision Flags object set to 0x02 \("Request-State" flag\) and the Command-Code set to "Remove"; see IETF RFC 3084 \[8\].](#)

The event contains the following information:

- Client Handle.

[The R-type = 0x08 for configuration request is used here and M-type = 0x04 terminate event state is used here.](#)

End of modified section

Start of modified section

Annex E (informative): Overview of the 3GPP Go PIB working mode

When the GGSN initialise for the first time, the PEP instances are initialised. The GGSN will use a TCP connection with the PDF (that will be created as specified in the normative text above subclause 6.1.1) in order to transport COPS protocol.

Then, the GGSN sends the first COPS REQ message to the PDF indicating capabilities and the supported PRCs. This is done using:

frwkSupportTable containing the supported PRCs and attributes.

frwkDeviceIdTable used to facilitate efficient policy communication by a PDP. The PDP can take into account certain device characteristics during policy installation as hardware and software of the GGSN, or maximum COPS-PR message size.

go3gppAuthReqCapTable indicating the maximum number of Binding Information and maximum number of Flow Identifiers the PEP can send with each Authorization Request.

go3gppAuthReqDecCapTable indicating the maximum number of ICID possible in a single Authorization Request Decision.

Then, the PDF send to the PEP PRCs for indicating how to handle each kind of event that require actions by the Go interface. This is done in a COPS DEC message using:

go3gppAuthReqHandlerTable indicating Go actions to take at the GGSN when an Authorization Request Event is detected by the GGSN (an example of an Authorization Request Event is the receive of a PDP Context message); the maximum number of Binding Information associated with each Authorization Request; and if COPS Req. can be triggered, are also indicated here.

Then, the GGSN will send PRCs to the PDF in a COPS REQ indicating the detection of specific events in the GGSN (i.e. when the GGSN receives the PDP context activation). Information required to PDF on behalf of GGSN is carried also by REQ messages. This is done using:

go3gppAuthReqEventTable indicates Authorization Request Event and its relevant information (binding information **go3gppBindingInfoTable**, **go3gppFlowIDTable**).

Then, PRCs carrying the Event Decision sent from PDF to PEP are carried by the COPS DEC message. These PRCs include support for Gates/Filters, QoS, ICIDs.

If the authorization request is rejected (for reasons such as no corresponding session was found by the PDF, incorrect bundling and others) a COPS-PR DEC containing the reason (**go3gppAuthReqFailDecTable**) is sent.

If not, the following PRCs are sent:

go3gppAuthReqDecTable indicates an ICID for each binding information received. To do so, table **go3gppIcidTable** is used. Also for each binding information a Directional Decision is sent (**go3gppAuthreqDirDecTable**)

Within the later the following is indicated:

- The direction where the decision applies (uplink or downlink).
- The Auth QoS (**go3gppQoSTable**) indicating the service class through DSCP encoding, and the data rate to be applied in the PDP requesting authorization.
- The gate definition (**go3gppGateTable**): including status (open/closed), and Ip filter definition through the **frwkBaseFilterTable** and **frwkIpFilterTable** (which includes source and destination address, port, protocol, etc).

There is, also, the possibility of sending, in a different COPS DEC message from the one carrying the go3gppAuthReqDec, information about changing status of the Gate. This is done using the **go3gppGateDecTable**, that includes the direction to which this decision applies and a reference to a go3gppGateTable.

Finally, the PEP will send to the PDF PRCs with the information on the Decision enforcement result. This is done in the COPS REPORT message. These PRCs include support for the success or failure of the PEP in carrying out the PDF's decision or change of the state in the GGSN, and are:

go3gppReportTable will indicate the status of the enforcement: success or failure or usage.

- If success, then, the **go3gppRprtGPRSChrgInfoTable** is sent to indicate the details for charging (GGSN address and GCID).
- If failure, then, the standard COPS-PR error handling mechanism and error objects are enough.
- Usage means that GPRS Usage has changed to 0kbps or from 0kbps. **go3gppUsageTable** is used.

To be conformant to the Go PIB, on top of the Go PIB PRCs defined in the present document, is mandatory to include from the framework PIB: frwkPrcSupportGroup, frwkDeviceGroup.

~~The PDF can revoke the authorization by using the Remove- Decision at any time the current specification indicates that this action is required. - the PDF or t~~ The GGSN ~~can~~ sends a COPS DRQ message ~~at any time that this action is required as specified in the normative text to ultimately remove the corresponding state in the PDF.~~

The Handle included in the COPS message will be used as the unique number to correlate all the COPS messages, with the same dialogue.

End of modified section
