3GPP TSG CN Plenary Meeting #21 **NP-030337**
17th - 19th September 2003. Frankfurt, Germany.

Source: TSG CN WG3

Title: CRs on Rel-5 Work Item E2EQoS.

Agenda item: 8.5

Document for: APPROVAL

Introduction:

This document contains **2** CRs on **Rel-5 Work Item E2EQoS,** including the corresponding mirror CRs (as required).

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

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N3-030578	Correcting the definition of authorization token and adding the definition of binding	29.207	103	1	F	Rel-	5.4.0
N3-030577	Correcting definition of flow id	29.207	102	1	F	Rel-	5.4.0

3GPP TSG-CN WG3 Meeting #29 ***N3-030577***
Sophia Antipolis, France. 25th - 29th August 2003.

CR-Form-v7

CHANGE REQUEST

⌘ **29.207** **CR** **102** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

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

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

Title:	⌘	Correcting the definition of flow identifier
Source:	⌘	TSG_CN WG3 [Ericsson]
Work item code:	⌘	E2eQoS
Date:	⌘	24/08/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The current definition of flow identifier might give the impression that a it identifies a particular IP flow within a media component of a session. However, because only the destination IP address and port number can be derived from the SDP parameters of a media component, leaving the source IP address and port number undefined, there are in fact many possible IP flows that are identified with an flow identifier.
Summary of change:	⌘	1. Correcting the definition of flow identity and 2. modifying and extending the examples in annex C by showing the IP flows derived from the SDP parameters exchanged in an offer – answer scenario and how these IP flows are identified by flow identifiers.
Consequences if not approved:	⌘	An incorrect definition which might cause erroneous implementations.

Clauses affected:	⌘	3.1 and Annex C

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

Other comments: ⌘

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

Start of first 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:

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.

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~~ the IP flows, described within a media component associated with a SIP session. A Flow identifier consists of two parts: 1) the ordinal number of the position of the "m=" lines in the SDP (RFC 2327 [17]) session description and 2) the ordinal number of the IP flow(s) within the “m=” line assigned in the order of increasing port numbers. Examples are provided in Annex C.

~~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

Next modification

Annex C (normative): Flow identifiers: Format definition and examples

C.1 Format of a flow identifier

A flow identifier is expressed as a 2-tuple as follows:

<~~Media component no~~The ordinal number of the position of the "m=" line in the SDP, The ordinal number of the IP flow(s) within the “m=” line assigned in the order of increasing port numbers~~IP flow no.~~>

where both are numbered starting from 1. The encoding of the flow identifier is as indicated in 3GPP TS 24.008 [12].

~~Media component no.~~The ordinal number of the position of the "m=" line in the SDP	~~IP flow no.~~ The ordinal number of the IP flow(s) within the “m=” line assigned in the order of increasing port numbers

C.2 Example 1

An UE, as the offerer, sends a SDP session description, as shown in table C.2.1, to an application server (only relevant SDP parameters are shown):

Table C.2.1: The values of the SDP parameters sent by the UE in example 1.

```
v=0
o=ecsreid 3262464865 3262464868 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM01
i=One unidirectional audio media and one unidirectional video media and one bidirectional application media
t=3262377600 3262809600
m=video 50230 RTP/AVP 31
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=recvonly
m=audio 50330 RTP/AVP 0
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=sendonly
m=application 50430 udp wb
```

c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=sendrecv

and receives the SDP parameters, as shown in table C.2.2, from the application server:

Table C.2.2: The values of the SDP parameters sent by the application server in example 1.

v=0
o=ecsreid 3262464865 3262464868 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM01
i=One unidirectional audio media and one unidirectional video media and one bidirectional application media
t=3262377600 3262809600
m=video 51372 RTP/AVP 31
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
a=sendonly
m=audio 49170 RTP/AVP 0
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
a=recvonly
m=application 32416 udp wb
c=IN IP6 2001:0646:000A:03A7:0250:DAFF:FE0E:C6F2
a=sendrecv

From this offer–answer exchange of SDP parameters the UE and the PDF each creates a list of flow identifiers comprising the IP flows as shown in table C.2.3:

Table C.2.3: Flow identifiers in example 1.

Order of 'm='-line	Type of IP flows	Destination IP address / Port number of the IP flows	Flow identifier
1	RTP (Video) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50230	<1,1>
1	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50231	<1,2>
1	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 51373	<1,2>
2	RTP (Audio) UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49170	<2,1>
2	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50331	<2,2>
2	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49171	<2,2>
3	UDP (application) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50430	<3,1>
3	UDP (application) UL	2001:0646:000A:03A7:0250:DAFF:FE0E:C6F2 / 32416	<3,1>

~~The second "m=" - line in the SDP information contains one RTP media specification, as follows:~~

~~m=video 49160 RTP/AVP 31~~

~~Two flow identifiers are assigned as shown in the table below:~~

~~IP flow~~	~~Port number~~	~~Flow identifier.~~
~~RTP~~	~~49160~~	~~<2,1>~~
~~Associated RTCP~~	~~49161~~	~~<2,2>~~

C.3 Example 2

In the general case, multiple ports may be specified with a "number of ports" qualifier as follows, RFC 2327 [17]:

m=<media> <port>/<number of ports> <transport> <fmt list>

An UE, as the offerer, sends a SDP session description, as shown in table C.3.1, to an application server (only relevant SDP parameters are shown):

Table C.3.1: The values of the SDP parameters sent by the UE in example 2.

v=0
o=ecsreid 3262464321 3262464325 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM02
i=One unidirectional audio media consisting of two media IP flows described by one media component
t=3262377600 3262809600
m=audio 50330/2 RTP/AVP 0
c=IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
a=recvonly

and receives the SDP parameters, as shown in table C.3.2, from the application server:

Table C.3.2: The values of the SDP parameters sent by the application server in example 2.

v=0
o=ecsreid 3262464321 3262464325 IN IP6 2001:0646:00F1:0045:02D0:59FF:FE14:F33A
s=MM02
i=One unidirectional audio media consisting of two media IP flows described by one media component
t=3262377600 3262809600
m=audio 49170/2 RTP/AVP 0
c=IN IP6 2001:0646:000A:03A7:02D0:59FF:FE40:2014
a=sendonly

From this offer–answer exchange of SDP parameters the UE and the PDF each creates a list of flow identifiers comprising the IP flows as shown in table C.3.3:

Table C.3.3: Flow identifiers in example 2.

Order of 'm='-line	Type of IP flows	Destination IP address / Port number of the IP flows	Flow identifier
1	RTP (audio) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50330	<1,1>
1	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50231	<1,2>
1	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49171	<1,2>
1	RTP (audio) DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50332	<1,3>
1	RTCP DL	2001:0646:00F1:0045:02D0:59FF:FE14:F33A / 50333	<1,4>
1	RTCP UL	2001:0646:000A:03A7:02D0:59FF:FE40:2014 / 49173	<1,4>

~~If the third "m=" line indicates a series of port numbers as follows:~~

~~m=video 49170/2 RTP/AVP 31~~

~~Four flow identifiers are assigned as shown in the table below:~~

~~IP flow~~	~~Port number~~	~~Flow identifier.~~
~~First RTP~~	~~49170~~	~~<3,1>~~
~~First associated RTCP~~	~~49171~~	~~<3,2>~~
~~Second RTP~~	~~49172~~	~~<3,3>~~
~~Second associated RTCP~~	~~49173~~	~~<3,4>~~

End of modifications

3GPP TSG-CN WG3 Meeting #29 ***N3-030578***
Sophia Antipolis, France. 25th - 29th August 2003.

CR-Form-v7

CHANGE REQUEST

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

Title:	⌘	Correcting the definition of authorization token and adding the definition of binding information.
Source:	⌘	TSG_CN WG3 [Ericsson]
Work item code:	⌘	E2eQoS
Date:	⌘	24/08/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
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Use one of the following releases:

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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	'Binding information' and 'authorization token' are basic and central terms in the binding mechanism of the SBLP concept. As such both terms should be defined in the definition section.
Summary of change:	⌘	Correcting the definition of authorization token and adding the definition of binding information.
Consequences if not approved:	⌘	The definintion of the central term 'binding information' is missing and a somewhat incomplete description of the term 'authorization token'. Both these circumstances makes the SBLP concept difficult to understand and might lead to erroneous implementations.

Clauses affected:	⌘	3.1

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

⌘

Other comments: ⌘

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Start of modification

3.1 Definitions

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Authorization Token: consists of the IMS session identifier and the PDF identifier in conformance with RFC 3520 [11]. It is used for authorizing the QoS for the ~~media stream~~IP flow(s). The UE ~~shall~~ includes an authorization token as part of the binding information 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.

Binding Information: consists of an authorization token and the flow identifier(s) of IP flow(s) carried by a PDP context. When receiving an authorization token, the UE includes binding information when activating or modifying a PDP context. It is used for authorizing the QoS of the IP flows carried within a PDP context and to verify that the grouping of the IP flows is correct.

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)

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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.

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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 modification