Technical Specification Group Services and System Aspects **TSGS#19(03)0302**

Meeting #20, Hämeenlinna, Finland
09-12 June 2003

Source: **TSG SA WG2**
Title: **CRs on 23.207**
Agenda Item: **7.2.3**

The following Change Request has been approved by TSG SA WG2 and is requested to be approved by TSG SA plenary #20. Note: the source of all these CRs is now S2, even if the name of the originating company(ies) is still reflected on the cover page of all the attached CRs.

Tdoc #	Title	Spec	CR #	cat	Version in	REL	WI	S2 meeting
S2-031482	Handling of IMS signalling information in QoS and PCO IEs at GGSN	23.207	57r1	F	5.7.0	5	IMS-CCR	S2-31

CR-Form-v7

CHANGE REQUEST

⌘ **23.207** **CR** **57** ⌘ **rev** **1** ⌘ Current version: **5.7.0** ⌘

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

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

Title:	⌘	Handling of IMS signalling information in QoS and PCO IEs at GGSN
Source:	⌘	Ericsson, Nortel, Nokia, Alcatel
Work item code:	⌘	IMS_CCR
Date:	⌘	10/04/03
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:	⌘	Care is needed to ensure that mobiles do not obtain enhanced QoS intended for signalling "incorrectly" . Hence, it is necessary that the GGSN shall be able to check that the signalling flag is negotiated according to operator policy.
Summary of change:	⌘	Include that enhanced QoS can be provided with the 'signalling indication'. Include the capability for the GGSN to downgrade this indication if so required by operator policy.
Consequences if not approved:	⌘	It may not be possible to control the use of the new "signalling flag" according to operator policies e.g. to restrict its use to IMS signalling.
Clauses affected:	⌘	6.1.2, 6.1.3 has been clarified in the context that IMS is a service example in here according to the sceope of the TS, also clarified is that the Auth token is for Media . 6.4 changed

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	This CR is a result of a CR to 23.107 and this CR is linked to a CR on 23.060 & 23.228. CN specifications are also affected (e.g. 24.229, 29.060, 29.061).
			X	Test specifications		
			X	O&M Specifications		

Other comments: ⌘

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

******* FIRST CHANGE ********

2 References

[19] 3GPP TS 23.060: “General Packet Radio Service (GPRS) Service description; Stage 2”

****** Second CHANGE ********

6.1.2 Procedures in the UE

The QoS procedures in the UE are triggered by the application layer (e.g., SIP/SDP) QoS requirements. The exact QoS procedures in the UE depend on the UE QoS capabilities.
For UEs that support only UMTS QoS mechanism, the application QoS requirements will trigger a PDP Context Activation procedure with the corresponding UMTS QoS parameters. ~~- If the UE received the Authorization Token in SIP signalling, the UE shall include the Authorization Token in the PDP Context Activation request for the PDP Context(s) that are activated to carry the media flows of the IMS session.~~
For UEs that support both IP (e.g., IP BS Manager) and UMTS QoS mechanism, the application QoS requirements are mapped down to the IP layer QoS parameters. The IP layer parameters are further mapped down to the PDP context parameters in the UE. ~~If the UE received the Authorization Token in SIP signalling, the UE shall include the Authorization Token in the PDP Context Activation request for the PDP Context(s) that are activated to carry the media flows of the IMS session.~~
For UEs that support RSVP, the application QoS requirements are mapped down to create an RSVP session. The UE shall establish a PDP context suitable for support of the RSVP session.
In addition in the case of IMS, the following procedures apply: if the UE received the Media Authorization Token in the SIP signalling, the UE shall include the Media Authorization Token in the PDP Context Activation request for the PDP Context(s) that are activated to carry the media flows of the IMS session.
For UEs that support RSVP, i~~I~~f the UE received the Media Authorization Token in SIP signalling, the UE shall include the Media Authorization Token in both the PDP Context Activation request for the PDP Context(s) that are activated to carry the media flows of the IMS session, and the RSVP messages if the PDP Context/RSVP is associated to the session.
At the IMS session release, the UE shall release all QoS resources allocated for the IMS session.

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

6.1.3 Procedures in the P-CSCF (PDF)

In case of IMS with Service based local policy:
t~~T~~he QoS procedures in P-CSCF(PDF) are related to service based local policy control.
The authorize QoS resources procedure is triggered by the P-CSCF receiving a SIP message containing SDP information. The SDP contains sufficient information about the session, such as the end-points, bandwidth requirements and the characteristics of the media exchange. The P-CSCF initiates a policy setup in PDF for the IMS session. The PDF shall authorize the required QoS resources and install the IP bearer level policy for the IMS session.
The Authorization-Token is generated by the PDF and sent to the UE by the P-CSCF. For the originating UE, the Authorization-Token shall be included in the first available reliable SIP message (e.g. 183 Session Progress)) from P-CSCF to the UE. For the terminating UE, the Authorization-Token shall be included in the SIP Invite message from P-CSCF to the UE.
The P-CSCF also generates and forwards an indication to the UE to assist the UE in deciding whether it can assign multiple media components to the same PDP Context, or separate PDP Contexts have to be used. This mechanism is described in Section 4.2.5.1 in [4].

Upon receiving the bearer authorization request from the GGSN, the PDF shall authorize the request according to the stored SBLP for the session.
The PDF makes a final decision to enable the allocated QoS resource for the authorized IP flows. This may be triggered by the receipt of the SIP 200 OK (Invite Response) message to the P-CSCF. QoS resources may also be enabled at the time they are authorised by the PDF.
During the mid-call SIP signalling for media or codec change, the PDF shall be able to decide if new QoS authorization is needed. A new authorization shall be required when the resources requested by the UE for a flow exceeds previous authorization, or a new flow is added, or when elements of the packet classifier(s) for authorized flow changed.
At IMS session release, the PDF shall revoke the resource authorization.

****** Third CHANGE ********

6.4 PDP Context Used for Application Level Signalling Transport

To establish a PDP context for application level signalling, the UE shall be able to include a signalling flag in PDP context activation procedure. This indicates to the network the intention of using the PDP context for application level signalling. The only defined application level signalling flag in this release is the IM CN subsystem signalling flag. ~~The signalling flag shall be a standardised static information.~~

To establish a PDP context for application level signalling with prioritised handling over the radio interface, the UE shall be able to also set the Signalling Indication in the QoS IE in the PDP context activation procedure. The Signalling indication in the QoS IE indicates to the radio and core networks the requirement for enhanced handling over the radio interface, once it has been negotiated with the networks.

A request for a general purpose PDP context having the “signalling indication” within the QoS IE may be accepted or downgraded according to operator policy configured at the GGSN using the usual QoS negotiation mechanisms described in [19].

In the case of IMS, the IM CN S~~s~~ignalling F~~f~~lag in the PCO IE is used to reference rules and restrictions on the PDP context used for application level signalling, as described in 23.228 section 4.2.6.
The IM CN S~~s~~ignalling F~~f~~lag and the Signalling indication in the QoS profile ~~parameters~~ detailed in TS23.107 may be used independently of each other.

Based on operator policy the “Signalling Indication” in the QoS IE may be allowed only if the “IM CN Subsystem Signalling” flag is present in the PCO IE.

******* End of changes ********