

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 for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N3-030386	PDP context used for IMS signalling	27.060	084	1	F	Rel-5	5.3.0
N3-030308	Application level Signalling Indication in the QoS IE	29.061	087		F	Rel-5	5.5.0

CHANGE REQUEST

⌘ **29.061 CR 087** ⌘ rev **-** ⌘ Current version: **5.5.0** ⌘

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:	⌘ Application level 'Signalling Indication' in the QoS IE		
Source:	⌘ TSG_CN WG3 [Ericsson, Nokia]		
Work item code:	⌘ E2eQoS	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:	⌘ A new parameter, 'Signalling Indication', has been introduced in the QoS IE. See stage 2 specifications, e.g. S2-031527 (CR to 23.228), S2-031482 (CR to 23.207)		
Summary of change:	⌘ GGSN procedures related to the 'Signalling Indication' parameter in the QoS IE are specified. GGSN can downgrade this parameter if so required by operator policy. It is clarified how the parameter may be used together with, or separate from, the existing IM CN subsystem signalling flag in the PCO IE.		
Consequences if not approved:	⌘ It may not be possible to control the enhanced QoS for application level signalling according to operator policy		

Clauses affected:	⌘ 13a.1, 13a.2.1, 13a.2.2.2										
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;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ Related stage 3 CR's to 24.008, 24.229, 27.060 and 29.060.
Y	N										
X											
	X										
	X										
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 first modification

13a Interworking with IMS

13a.1 General

Interworking with the IP Multimedia Core Network Subsystem (IMS) puts additional requirements on the GGSN. When the MS connects to the IP Multimedia Core Network Subsystem (IMS), specific parameters in Session Management messages may be handled. The IMS specific parameters are: IMS signalling flag, P-CSCF address request, returned P-CSCF address(es), media authorization token(s) and flow identifier(s).

For interworking with the IMS, the Go interface (see 3GPP TS 29.207 [53]) is used to correlate the session (SIP/SDP) and the bearer (PDP Contexts).

The mechanisms in GGSN to support IMS shall be:

- P-CSCF discovery.
- Dedicated signalling PDP contexts ([with or without enhanced QoS](#)); with associated static packet filters to permit signalling to/from designated servers.
- Go interface for charging correlation and policy control of PDP contexts for IMS media flows.

These mechanisms are however not restricted to the IMS and could be used for other services that could benefit from these mechanisms.

Start of next modification

13a.2.1 IMS Specific Configuration in the GGSN

The GGSN shall have a list of preconfigured addresses of signalling servers (P-CSCF servers). This list shall be provided to MSs on request. The list shall be possible to preconfigure per APN.

The GGSN shall have preconfigured static packet filters, to be applied on dedicated signalling PDP contexts. The static packet filters shall filter up-link and down-link packets and only allow traffic to/from the preconfigured signalling servers and to DNS and DHCP servers. The static packet filters shall be possible to pre-configure per APN.

It shall be possible to enable/disable the use of the Go interface per APN. The GGSN shall handle Create PDP Context Requests that include binding information as specified in 3GPP TS 29.207 [53].

The GGSN shall support IPv6 addresses and protocol for IMS signalling and IMS bearers.

The GGSN shall provide support for P-CSCF discovery in two different ways (see 3GPP TS 23.228 [52]):

- GPRS procedure for P-CSCF discovery, i.e. request and provision of P-CSCF address(es) within the PCO IE in GPRS Session Management procedures (see 3GPP TS 24.008 [54]).
- Via DHCPv6 servers i.e. the GGSN shall provide the functionality of a DHCPv6 relay agent

On APNs providing IMS services, the information advertised in Router Advertisements from GGSN to MSs shall be configured in the same manner as for other APNs providing IPv6 services (see subclause 11.2.1.3.4), except that the "O-flag" shall be set even when the "M-flag" is cleared.

NOTE: When the "M-flag" is cleared, the "O-flag" shall be set in IPv6 Router Advertisement messages sent by the GGSN for APNs used for IMS services. This will trigger a DHCP capable MS to start a DHCPv6 session to retrieve server addresses and other configuration parameters. An MS which doesn't support DHCP will simply ignore the "O-flag". An MS may simultaneously use stateless address autoconfiguration for configuring its IPv6 address and stateful autoconfiguration for configuring IMS specific parameters. An MS which doesn't support DHCP, shall request IMS specific configuration (e.g. P-CSCF address) in the PCO IE in the Create PDP Context message.

The GGSN shall support a DHCPv6 relay agent.

[The GGSN shall have configurable policy rules for controlling PDP contexts used for signalling as specified in section 13a.2.2.2.](#)

Start of next modification

13a.2.2.2 Establishment of a PDP Context ~~Dedicated~~ for Signalling

[The following applies for establishing a PDP context for signalling in the GGSN:](#)

- I. The GGSN shall allow IMS signalling on a "general-purpose PDP context", in which case the IMS signalling shall be provided like any other transparent services provided by the packet domain.
- II. The GGSN may (dependent on operator policy) also support dedicated signalling PDP Contexts for IMS services. An MS may request a dedicated signalling PDP context (see 3GPP TS 24.229 [47]) [by setting the IM CN Subsystem signalling flag in the PCO IE.](#) ~~If dedicated signalling PDP contexts are not supported, GGSN will reset the signalling flag in the response to the MS.~~

[In both cases, I and II, the GGSN may receive the Signalling Indication parameter in the QoS IE. This indicates a request for prioritised handling over the radio interface. The GGSN shall be able to downgrade the QoS \(dependent on operator policy\) by resetting the Signalling Indication according to the normal procedures for QoS negotiation, see 3GPP TS 23.060 \[3\].](#)

The operator may provide ~~special~~ [other](#) properties to dedicated signalling PDP contexts, e.g. special charging ~~and enhanced QoS~~. It is out of the current scope of this TS to further specify these properties.

For a PDP Context marked as a dedicated signalling PDP Context, the GGSN shall apply static packet filters, which shall only allow packets to be sent to and from a pre-configured set of signalling servers, such as P-CSCF(s), DHCP server(s) and DNS server(s). The static packet filters for down-link signalling traffic shall have the format of a TFT and be sorted so that they precede both the SBLP based filters and the UE specified TFT filters. This will secure the use of the correct PDP context for the signalling traffic, and that only authorized traffic uses the signalling PDP context. The static packet filters shall be pre-configured in the GGSN by the operator. For dedicated signalling PDP Contexts, any TFT specified by the MS shall be replaced by the GGSN pre-configured static packet filters.

End of modifications

CR-Form-v7

CHANGE REQUEST

⌘ **27.060 CR 084** ⌘ 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:	⌘ PDP context used for IMS signalling		
Source:	⌘ TSG_CN WG3 [Ericsson]		
Work item code:	⌘ E2eQoS	Date:	⌘ 7/5/2003
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
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			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ A new parameter, 'Signalling Indication', has been introduced in the QoS IE. See stage 2 specifications, e.g. S2-031527 (CR to 23.228), S2-031482 (CR to 23.207)
Summary of change:	⌘ The QoS attribute 'Signalling Indication' has been specified. The UE may set this attribute to request a prioritised handling of the PDP context. This attribute may be used together with, or separate from, the existing IM CN subsystem signalling flag in the PCO IE.
Consequences if not approved:	⌘ An incomplete description of relevant parameters which affects how the UE can activate a PDP context used for IMS signalling.

Clauses affected:	⌘ 13.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications	Y	N	X			X		X	⌘	24.008, 24.229, 29.060 and 29.061.
Y	N										
X											
	X										
	X										
Other comments:	⌘										

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Start of modification

13.4 PDP Context used for IMS~~CN Subsystem~~ Signalling ~~Flag~~

Before the MS can request IMS services, a PDP context is activated to carry the IMS signalling. This PDP context can be for IMS signalling only or a general-purpose PDP context (i.e. may also carry the media). The MS can request that a PDP context is for IMS signalling only by setting the IM CN subsystem signalling flag in the Protocol Configuration Option information element when activating a PDP context. [Whether or not a PDP context is activated to be used for general purpose or for IMS signalling only, the MS can request that a PDP context will be prioritised by setting the QoS attribute Signalling Indication. The encoding of the IM CN subsystem signalling flag and the Signalling Indication information elements are specified in 3GPP TS 24.008 \[12\].](#) The corresponding procedures [are](#) specified in 3GPP TS 24.229 [51] [and](#) 3GPP TS 29.061 [17].

End of modification