3GPP TSG CN Plenary Meeting #13

Beijing, China, 19th⁻21st September 2001

NP-010528

Source:	**TSG CN WG3**
Title:	**WID for End-to-End QoS Stage 3**
Agenda item:	**9.8**
Document for:	**APPROVAL**

3GPP TSG CN WG3 Meeting #18
Dresden, 9th - 13th July 2001

N3-010334

3GPP TSG CN Plenary Meeting #12
Stockholm, Sweden, 13th - 15th June 2001

NP-010363

3GPP TSG CN WG3 Meeting #17
Puerto Rico, 14th - 18th May 2001

N3-010248

This document proposes the revision of the work item description sheet for "End-to-end QoS Stage 3".

Work Item Description

Title: End-to-end QoS Stage 3

1   3GPP Work Area

	Radio Access
X	Core Network
	Services

2   Linked work items

- Provisioning of IP-based multimedia services (SA1)
- SIP call control for the IM CN subsystem (CN1)
- End-to-end QoS Concept and Architecture for PS Domain (SA2)
- Interworking between IM CN subsystem and IP networks (CN3)
- Interworking between IM CN subsystem and CS networks (CN3)

3   Justification

IP based multimedia services are a required feature of UMTS Release 5, which will include IP telephony and other real time service support. The provisioning of these services need well-defined QoS mechanisms.

This work item will define the mechanisms required to secure end-to-end QoS provisioning within the IM CN subsystem.

4   Objective

The objective of this work item is to address the issues of
- end-to-end QoS negotiation,
- QoS policy control and enforcement mechanisms for negotiated traffic parameters,
- provision of negotiated QoS,
- mapping of QoS parameters between different networks.

The goal of the negotiation phase is to select an appropriate QoS class and its parameters based on the outband set-up signalling (e.g. SIP/SDP) or on inband signalling (e.g. RSVP, LDP).

The QoS policy control and enforcement mechanisms includes the definition of interactions between the PCF (Policy Control Function) and the GGSN (Gateway GPRS Support Node) for QoS management by controlling admissions of resource allocations based on administrative policy and the IM session attributes and state transitions for user plane transport within the IM CN subsystem. Significant goals are to define the protocol between the PCF and the GGSN required to ensure the required QoS within the IM CN subsystem and to specify the signalling interactions for the service-based local policy control over the Go interface based on the COPS (Common Open Policy Service) protocol specified by IETF.

Mapping of QoS parameters has to be considered for outband set-up signalling and for inband IP Bearer signalling at various interfaces, especially the Gi interface between GGSN and external networks.

Deviation from IETF protocols should only be applied when deemed necessary. 3GPP specific extensions should be kept to an absolute minimum in order to allow the usage of as generic IETF protocols as possible.

5   Service Aspects
Yes, the new service aspects are being defined in SA1 and the architectural aspects are being defined in SA2.

6   MMI-Aspects
Yes, the resources could be requested by users through MMI but no impact on CN3. MMI specifications are not impacted.

7   Charging Aspects

Yes, the information on resource usage needs to be utilised for charging. Required work to be addressed in an SA5 work item.

8   Security Aspects

Yes, the policy of resource admission could be controlled under security aspects.

9   Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X	X	X	
No			X		
Don't know	X				

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TS ab.cde	End-to-end QoS signalling flows	CN3		CN#14 (Dec 01)	CN#15 (Mar 02)	Describing detailed end-to-end QoS signalling flows, which are not covered in 24.228. E.g., describing the interactions between PDP context activation/ modification/ deactivation procedures and the procedures for RSVP sender/receiver proxy in GGSN including the required procedures over Go to control the RSVP function.
TS 29.207 (tbc)	Policy control over Go interfaceIMS Go Interface SBLP Signalling	CN3		CN#1314 (Sept Dec 01)	CN#1415 (Dec Mar 0102)	Specifying any functionality associated with PCF. Specifying signalling interactions to secure the end-to-end QoS provisioning over the Go interface.

Affected existing specifications					
Spec No.	CR	Subject	Approved at plenary#		Comments
27.060		Mobile Station (MS) supporting Packet Switched Services	CN#1415 (Dec Mar 0102)		Specifying the IP BS Manager function in MS. Specifying the scheme for interworking between PDP context activation procedures and resource reservation protocols. Specifying the mapping of QoS parameters between SDP / RSVP and UMTS, and between SDP and IP.
29.061		Interworking between the PLMN supporting GPRS and PDNs	CN#1415 (Dec Mar 0102)		Specifying the IP BS Manager function in GGSN. Specifying the scheme for interworking between PDP context activation procedures and resource reservation protocols. Specifying the mapping of QoS parameters between UMTS / RSVP and IP.
24.008		Mobile radio interface layer 3 specification; Core Network Protocols – Stage 3	CN#14 (Dec 01)		Encoding of binding information in the protocol configuration option IE.Impact of QoS parameters.

24.228		Signalling flows for the IP multimedia call control based on SIP and SDP	CN#14 (Dec 01)	Describing the relationship between non-QoS entities and QoS entities and the information transfer involved (e.g. media authorization token). Describing example QoS related flows for MO and MT case. ~~Note – TS has not been presented at CN plenary, and is not currently under change control.~~
24.229		IP Multimedia Call Control Protocol based on SIP and SDP	CN#14 (Dec 01)	Specifying any functionality associated with P-CSCF.
29.060		GPRS Tunnelling Protocol (GTP) across the Gn and Gp Interface	CN#~~14~~15 (~~Dec~~ Mar ~~01~~02)	Studying the impact to guarantee QoS over GTP tunnels. Studying how the binding information is sent from the UE to the GGSN. ~~Impact of QoS on GTP.~~
~~29.162~~		~~Interworking between the IMS and IP based networks~~	~~CN#14 (Dec 01)~~	~~Note – TS has not been presented at CN plenary, and is not currently under change control.~~
29.163		Interworking between the IMS and CS networks	CN#~~14~~15 (~~Dec~~ Mar ~~01~~02)	Studying the impact on the IMS and CS networks interworking case, if this case has to be considered. ~~Note – TS has not been presented at CN plenary, and is not currently under change control.~~
~~25.413~~		~~UTRAN Iu Interface RANAP Signalling~~	~~RAN#14 (Dec 01)~~	~~Impact of QoS parameters.~~

11   Work item raporteurs

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12   Work item leadership

CN3

13   Supporting Companies

Lucent Technologies, Motorola, BT, Vodafone, Nokia, Siemens, Cisco Systems

14   Classification of the WI (if known)

	Feature (go to 14a)	
X	Building Block (go to 14b)	
	Work Task (go to 14c)	

14a   The WI is a Feature: List of building blocks under this feature

14b   The WI is a Building Block: parent Feature

-      End to End QoS Concept and Architecture for PS Domain (SA2)

14c   The WI is a Work Task: parent Building Block