3GPP TSG CN Plenary Meeting #15
6th – 8th March 2002. Cheju, Korea.

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

3GPP TSG CN WG3 Meeting #21 Bis Sophia, France. 25th - 27th February 2002.	N3-020167
3GPP TSG CN WG3 Meeting #19 Brighton, U.K. 15th - 19th October 2001	N3-010365
3GPP TSG CN Plenary Meeting #13 Beijing, China, 19th –21st September 2001	NP-010528
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 Mb ~~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	
No			X		
Don't know	X				

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TS 29.208~~a b.cde~~	End-to-end QoS signalling flows	CN3		CN#15~~14~~ (Mar 02~~Dec 01~~)	CN#16~~15~~ (Jun~~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~~ resource reservation procedures ~~for~~ with RSVP, and ~~sender/receiver proxy in GGSN including the required~~ procedures over the Go interface ~~to control the RSVP function~~. Specifying the mapping of QoS parameters among SDP, IP, and UMTS.
TS 29.207	Policy control over Go interface	CN3		CN#15~~14~~ (Mar 02~~Dec 01~~)	CN#16~~15~~ (Jun~~Mar~~ 02)	~~Specifying any functionality associated with PCF.~~ Specifying the protocol~~s~~ and signalling interactions ~~to secure the end-to-end QoS provisioning~~ over the Go interface. Specifying any functionality associated with PCF and GGSN related to Go interface.

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
27.060		Mobile Station (MS) supporting Packet Switched Services	CN#16~~15~~ (Jun~~Mar~~ 02)	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#1615 (JunMar 02)	~~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	557r2	Mobile radio interface layer 3 specification; Core Network Protocols – Stage 3	CN#151614 (Mar ~~Jun~~ 02~~Dec 01~~)	Encoding of binding information in the Traffic Flow Template ~~protocol configuration option~~ IE.
24.228		Signalling flows for the IP multimedia call control based on SIP and SDP	CN#1514 (Mar 02~~Dec 01~~)	Describing the relationship between non-QoS entities and QoS entities and the information transfer involved (e.g. media authorization token). Describing the ~~example~~ QoS ~~related~~ signalling flows in relation to SIP signalling flows~~for MO and MT case~~.
24.229		IP Multimedia Call Control Protocol based on SIP and SDP	CN#1514 (Mar 02~~Dec 01~~)	Specifying any functionality associated with P-CSCF.
29.060		GPRS Tunnelling Protocol (GTP) across the Gn and Gp Interface	CN#1615 (JunMar 02)	Studying the impact to guarantee QoS over GTP tunnels. Studying how the binding information is sent from the UE to the GGSN.
~~29.163~~		~~Interworking between the IMS and CS networks~~	~~CN#15 (Mar 02)~~	~~Studying the impact on the IMS and CS networks interworking case, if this case has to be considered.~~

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, Nortel Networks. Hutchison 3G, mmO2, Ericsson

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