3GPP TSG-CN Meeting #24   **NP-040245**
2nd – 4th June 2004. Seoul, Korea.

Source:	**CN3**
Title:	**proposed WID on Gx interface specification for flow based charging**
Agenda item:	**9.22**
Document for:	**APPROVAL**

3GPP TSG-CN WG3 Meeting #32   **N3-040389**
Zagreb, Croatia. 10th – 14th May 2004.

Source:	**Nokia**
Title:	**A proposed WID on Gx interface specification for flow based charging**
Agenda item:	**10.8**
Document for:	**WID**

Work Item Description

Title   **Gx interface specification for flow based charging**

1   **3GPP Work Area**

	Radio Access
X	Core Network
	Services

2   **Linked work items**

- Overall architectural aspects of flow based bearer level charging (SA2 Work Task)
- Charging Management (SA5 Feature)
- Charging Management for Bearer level (SA5 BB)
- Charging Management for IM Subsystem (SA5 BB)
- Charging Management for Service domain (SA5 BB)

3   **Justification**

Recent 3GPP Releases have developed or are developing standards for a variety of different PS-based services:

- Non-realtime services, e.g. Presence, IMS messaging, etc…
- Realtime services, e.g. IMS multimedia sessions, Packet-switched streaming, MBMS, etc…

Additionally, operators provide PS bearer connectivity for users to access e.g. their E-mail, FTP, web-based services – these application-level services themselves may also be provided by the operator.

Conclusively, it can be stated in general that a PDP Context will carry a diverse mix of traffic. At the same time, the standard PS charging architecture has fundamentally remained unchanged since R97 leaving operators with an apparent lack of bearer charging capabilities for these services.

As a result, SA2 have conducted an architectural analysis and specification work on enhancing the PS core network to support flow-based charging capabilities. Among other aspects, this work has defined a new interface (Gx) to enable the use of service data flow based charging rules such as counting number of packets belonging to a rate category in the IP-Connectivity Network. This functionality is required for both offline and online charging.

4   **Objective**

The objective is to generate a protocol specification for the Gx interface to cover the functionalities defined in 23.125:
1.   Initialisation and maintenance of connection
2.   Request for Charging Rules
3.   Provision of Charging Rules
4.   Indication of Bearer Termination

5   **Service Aspects**

None

6   **MMI-Aspects**

None

7 Charging Aspects

The main objective of the Work Item is to focus on enabling charging rules.

8 Security Aspects

Security aspects of Gx is expected to be analyzed by SA3.

9 Impacts

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

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 29.210	Charging rule provisioning over Gx interface	CN3		CN#25 (Sep 04)	CN#26 (Dec 04)	
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments

11 Work item rapporteurs

Juha Räsänen, Nokia

12 Work item leadership

CN3

13 Supporting Companies

Nokia, Ericsson, Nortel, Vodafone

14 Classification of the WI (if known)

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

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

(list of Work Items identified as building blocks)

14b   The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

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

Charging Management for Bearer level