3GPP TSG CN Plenary Meeting #13 **Tdoc NP-010460**
Beijing, CHINA, 19th – 21st September 2001

Source: **Motorola**

Title: **Feasibility study on SS7 signalling transportation in the core network with SCCP-User Adaptation (SUA)**

Agenda item: **9.13**

Document for: **Approval**

Title: **Feasibility study on SS7 signalling transportation in the core network with SCCP-User Adaptation (SUA)**

1 3GPP Work Area

	Radio Access
X	Core Network
	Services

2 Linked work items

Network Domain Security and Key Management
#7 Signalling over IP in Core Network.

3 Justification

SCCP-User Adaptation (SUA) is a new protocol, currently developed by IETF (see draft-ietf-sigtran-sua-05.txt), for the transport of any SS7 SCCP-User signalling (e.g., TCAP, RANAP, etc.) over IP using the Stream Control Transport Protocol (SCTP). SUA aims to be modular and symmetric, to allow it to work in diverse architectures, such as a Signalling Gateway to IP Signalling Endpoint architecture as well as a peer-to-peer IP Signalling Endpoint architecture.
The SUA delivery mechanism provides the following functionality:

- Support for transfer of SS7 SCCP-User Part messages;
- Support for SCCP connectionless service;
- Support for SCCP connection oriented service;
- Support for the seamless operation of SCCP-User protocol peers;
- Support for the management of SCTP transport associations between a Signalling Gateway and one or more IP-based signalling nodes;
- Support for distributed IP-based signalling nodes; and
- Support for the asynchronous reporting of status changes to management.

Given the above capabilities, in many cases, SCCP (and the associated adaptation protocol, M3UA) may be unnecessary and a signalling transport based on SUA/SCTP/IP could be considered preferable in terms of efficiency and implementation complexity. In general, the protocol stack based on SUA is less complex and more efficient compared to the protocol stack based on SCCP and M3UA. Consequently, SUA could enhance the efficiency of the core network, could reduce the overhead and could provide the means for simpler implementations.

4 Objective

The objective of this WI is:

i) To evaluate the benefits and disadvantages associated with the implementation of SUA in the core network, and to compare it with the SCCP/M3UA option;

ii) To identify and study the technical issues related to the implementation of SUA in the core network, e.g. the SCCP segmentation function, how SUA offer the SCCP user a payload at least as large as the one offered by the SCCP white book;

iii) To propose possible technical solutions that will enable the efficient implementation of SUA in the core network;

iv) To monitor the progress of the SUA standardization in IETF;

v) To identify and study the interactions with basic services, supplementary services, network features, making use of SCCP GT routeing, like SMS, CAMEL, Number Portability, and CCBS

vi) Evaluate whether sufficient improvement compared to SCCP/M3UA - including the impacts on existing 3GPP specifications.

vii) To evaluate the interoperability within and between networks using alternative protocol stacks such as SCCP/M3UA.

5 Service Aspects

. *Possible service impact includes Number Portability and CCBS. These and other service interactions need to be further investigated.*

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

Impact on MAP security, Look at the possibility of IPSec instead of MAP Application as an alternative.

9 Impacts

Affects:	USIM	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
TR 29.903	- Feasibility Study on the usage of SUA	-CN4	-CN1, CN2	-TSG CN#~~13~~14	-CN#~~13~~14	-

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item rapporteurs

Michael Young, Motorola

12 **Work item leadership**

CN4

13 **Supporting Companies**

Cisco, Motorola, Nortel Networks, Siemens, Tellabs, Ericsson

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

14b The WI is a Building Block: parent Feature

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

IP Transport of CN Protocols (WI id 859)