TSG-CN Plenary # 9 Tdoc NP000589
20th - 22nd September 2000
Hawaii, USA

Source: Nortel Networks
Subject: **Additional guidelines for the N1 SIP work item**

Introduction

This contribution requests modification to the proposed N1work item description for the creation of stage 2 and stage 3 specifications for SIP Call Control protocol over Gm reference point (CSCF – UE).

One important point is that the adoption of the Stage 2 specification by N1 should not create a venue to reopen issues already addressed during SA2's 9 months of working on SIP.

Key points for the work item description

- The CN1 mandate is to define the use of SIP within the UMTS IM subsystem, without introducing modifications to the SIP protocol itself. This means N1's primary task is to define the specific values carried within the SIP protocol to enable multimedia call control within the IM subsystem. Over zealous introduction of 3GPP specific 'optimisations' of the SIP protocol will negate the advantages of 3GPP adopting SIP, hence must be avoided where possible. As a safe guard it is proposed that N1 should seek endorsement from S2 before introducing functionality that modifies the behaviour of SIP beyond that defined by the IETF.

- The possibility of using the existing SIP RFC should not be bypassed in a rush to adopt the new SIP enhancements being proposed by the IETF. Using 'classical' SIP would maximise the potential for successfully interworking with SIP entities outside 3GPP networks. Therefore it needs to be thoroughly investigated as a way of providing basic interworking. However, it is not the intent to preclude the use of 'enhanced SIP', i.e. RFC2543bis, as a mechanism by which 3GPP introduces enhanced functionality into IM subsystem.

Proposal

Attached is revised version of the N1 SIP work item with additional text to emphasis the key points described above.

Work Item Description

Title: SIP Call Control protocol over Gm reference point (CSCF – UE)

1 3GPP Work Area

	Radio Access
X	Core Network
X	Services

2 Linked work items

Related work items are:
1. Architecture for Call control and roaming to support IP-based multimedia services in UMTS. S2
2. Real Time QoS for packet services including VoIP. S2, N1, RAN3 etc.
3. Emergency call enhancements - IP&PS based Emergency call enhancements. N1 etc
4. Roaming support within and between IP Multi-media network and CS Domain networks.S2, N4 etc
5. Lawful interception architecture. S3 etc

3 Justification

The work item "An architecture for Call control and roaming to support IP-based multimedia services in UMTS" describes the ongoing work in 3GPP for R00, which has been initially tasked by SA to S2 under the "all-IP option" by SA#4 (6/99). Impacts on SIP to transport QoS parameters on an intra-PLMN, as well as end-to-end.

The work item describes the ongoing work in 3GPP CN1 for R00.

4 Objective

The objective of this work item is to specify the Call Control protocol profile for the ~~IP-based~~IM Subsystem for control of multimedia services based on the ~~current~~ Session Initiated Protocol, IETF RFC2543 (SIP) to facilitate a multi-vendor, multi-system environment.~~with required enhancements for 3GPP requirements.~~

Stage 2 call flow descriptions and stage 3 protocol descriptions will be developed for signalling between the Mobile Station (UE) and the Core Network (S-CSCF) based upon the SIP Call Control Protocol. As a significant number of SIP termination points are likely to be in IP networks outside the scope of 3GPP, UMTS specific extensions to SIP shall be avoided wherever possible. In the event that N1 feels it is not possible to introduce the necessary multimedia call control without modification of SIP, then endorsement of the modifications should be sort from SA2 before it is introduced into the stage 2 or stage 3.

Editors note: The area of this work task may be expanded to cover the Mw and Mg reference points, but this is dependent on agreement with the relevant TSG's.

5 Service Aspects

New services which are to be provided by this network subsystem are currently defined by a separate work item in S1. The architectural aspects are being defined in S2.

6 MMI-Aspects

yes, as new, IP-based based call control protocol will be used in the terminal

7 Charging Aspects

yes, but no impact on CN1

8 Security Aspects

yes, security mechanisms for IP-based multimedia shall~~must~~ be addressed by S3.

9 Impacts

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

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

Meeting	Date	Activity
CN1#11	May 22-26, 2000	Raporteur appointed for CN1 group.
S2 & CN1	August 15-16, 2000	Joint meeting to plan work item schedule.
CN1#13	August 14-18, 2000	
CN#9	September 20-22, 2000	
CN1#14	November 20-24, 2000	
CN#10	December 6-8, 2000	

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
23.1xx	<stage 2 for the IP Multimedia Call Control based on SIP (Detailed flows to expand on the Architectural stage 2 >	N1		CN#10	CN#11	Stage 2 describing the information flows between the UE and S-CSCF on the Gm reference point in relation to UMTS specific traffic cases e.g. interaction between lower layer access signalling (GPRS Session Management – SM, GPRS Mobility Management - GMM etc.) and SIP call control protocol. Impact to user plane radio resource allocation procedures, handover/SRNS relocation procedures etc. S2's stage 2 will cover the architecture and CN1will cover the detailed information flows.
24.1xx	<stage 3 for the IP Multimedia Call Control based on SIP>	N1		CN#10	CN#11	Stage 3 descri~~bing the~~ption shall specify a SIP profile to enable multi-vendor, multi-system interworking. This specification will define any UMTS specific ~~protocol impacts on the Gm reference point e.g. any~~ enhancements required to SIP. However, 3GPP specific enhancements should be avoided wherever possible since a large proportion of SIP termination points will be in IP networks that are outside the scope of 3GPP.
Ed comment: there will be potentially other new specs, including Stage 3s, yet to be identified						

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary #	Comments
Ed comment: further impacts to R99 specifications to be identified				

23.228		IP Multimedia (IM) Subsystem Stage 2		Under the responsibility of TSG-SA2.

11 Work item raporteurs

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12 Work item leadership

N1

13 Supporting Companies

Lucent, T-Mobil, BT, Ericsson, Vodafone, Motorola, CSELT, Nortel Networks

14 Classification of the WI (if known)

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

14b The WI is a Work Task (14c).