3GPP TSG_CN **Tdoc NP-000509**
Plenary Meeting #9, Oahu, Hawaii
20th – 22nd September 2000

3GPP TSG CN WG4 #4 meeting TDoc N4-000767
28 Aug - 1 Sep. 2000
Seattle, U.S.A.

Source: **N4**

Title: Work Item Description 'Optimisation of Signalling: Combined MAP Signalling for mobility management'

Document for: Discussion and approval

Work Item Description

Title

Optimisation of Signalling: Combined MAP Signalling for mobility management

1 3GPP Work Area

	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

In release 99 and earlier, the interaction between SGSN and MSC/VLR is specified as network option in order to reduce the signalling resource between an MS and a serving node. When an MS, which has both CS and PS capabilities, is located in a network that has the optional interface between SGSN and MSC/VLR (Gs interface), the MS can invoke combined mobility management procedure (e.g. Combined RA/LA update). The Gs interface is used for only radio layer 3 interface to the MSC/VLR so that the SGSN and the MSC/VLR have to handle the mobility management MAP operations respectively.

The combined MAP operations aim to reduce the MAP signalling between a HLR and a serving node by means of combining separated operations for CS and PS domain into domain common operations for a integrated serving node (ISN) that has capabilities of both SGSN and MSC/VLR.

This Work Item is needed in order to meet the operator's requirement, cost reduction by reduction of signalling messages amount in CN.

4 Objective

The objective is to define the architecture related to the integrated serving node and to select the MAP operations to be combined and to define procedures and operations between HLR and the integrated serving node.

Compatibility between a node that supports combined MAP operations and a node that does not support them must be considered.

USIM/UE and RAN should not be affected and involved even if CN performs the combined MAP operations.

Note that this Work Item focus on only the interfaces between HLR and integrated serving node. In other words, there is no intention to enhance Gs interface signalling protocol, since the scope is integrated node which is include the interface as an internal one.

Task	Planned Start	Planned Finish
Work Item Creation	9/2000	9/2000
Work Item Approval		9/2000
Drafting and discussion, updates of specifications	9/2000	2/2001
Submission to TSG CN and SA for approval		3/2001
Possible remaining corrections and clarifications		[TBD]

5 Service Aspects

Signalling reduction provides greater network efficiency.

6 MMI-Aspects

None. This Work Item does not affect the MMI aspects. End user must not perceive whether the MAP operations are combined or not.

7 Charging Aspects

None. This Work Item does not affect the charging aspects.

8 Security Aspects

None. ‘MAP security’ should secure the combined MAP operations.

9 Impacts

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

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

3GPP specifications that contain or may contain combined MAP operations related issues in Release 2000 are listed in the following table.

New specifications						
Specification No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
23.xxx	Functional stage 2 description of combined MAP operations	N4		CN#10	CN#11	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
23.002		Additional Architecture related to integrated serving node	SA#11	
23.003		Additional SSN for integrated serving node	CN#11	
23.012			CN#11	if any
23.116		Interaction with combined MAP operations	CN#11	
23.119		Procedures for combined MAP operations	CN#11	
29.002		Definition of combined MAP operations	CN#11	
29.120		Reference to combined MAP operations	CN#11	

11 Work item raporteurs

Kazuo Mitamura (NTT COMWARE)

12 Work item leadership

TSG CN WG 4

13 Supporting Companies

NTT DoCoMo, Fujitsu, NEC, NTC, NTT COMWARE, NTT Software

14 Classification of the WI

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

This building block should be included in the *Feature* 'Optimisation of signalling', which is a *Feature* Work Item in '*Call control and Roaming'*.

14b List of Work Tasks under the Building Blocks.

Building block	***WG: work task*** **expected completion date**
Combined MAP Signalling for mobility management	**S2**, *Sep.* *Architecture for combined MAP operations*
	N4, *Dec.* *Selection of operations to be combined*
	N4, *Dec.* *Internal behaviour of HLR and integrated node, and information flows between HLR and integrated node*
	N4, *Dec.* *Definition of operations*