3GPP TSG_CN
Plenary Meeting #9, Oahu, Hawaii
20th – 22nd September 2000.

Tdoc NP-000417

3GPP TSG CN WG4, Meeting #3
Helsinki, Finland, 17-21 July 2000

Tdoc N4-000549

Source: **3GPP TSG CN WG4**[1]

To: **3GPP TSG SA WG2**

CC: **3GPP TSG CN**

Title: **LS on Architectural Impact of Combined MAP Signaling for Mobility Management**

During the N4 meeting in Helsinki, 17-21 July 2000, a new WI on "Optimisation of Signalling: Combined MAP Operations between HLR and Serving Node" was proposed (please see attached Tdoc N4-000463 for information).

N4 has agreed to start a feasibility study for this WI. The results of this study shall be incorporated in the justification section of the WI description. Based on the outcome of this study, N4 plans to decide during their next meeting, 28 Aug – 01 Sep 2000, whether to start the implementation of this WI for R00.

Since the integration of SGSN and MSC/VLR implies architectural impacts, N4 asks S2 for advice and guidance on this matter. In particular, feedback is needed on whether the option of a combined SGSN / MSC/VLR node is acceptable for R00 from S2's point of view.

N4 would appreciate a response at S2's earliest convenience. The next meetings of N4 are scheduled for 28 Aug – 01 Sep 2000 (Seattle, USA) and 13 – 17 Nov 2000 (Paris, France).

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3GPP TSG CN WG4 #3 meeting **TDoc N4-000463**
Helsinki, 17-21 July, 2000

Source: **NTT DoCoMo**

Title: Draft Work Item Description 'Optimisation of Signalling: Combined MAP operations between HLR and serving node'

Document for: Discussion and approval

Work Item Description

Title

Optimisation of Signalling: Combined MAP operations between HLR and serving node

1 3GPP Work Area

	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

A physical Mobile Terminal (MT) can have the capabilities for both CS services and PS services. Release 99 and earlier specify the procedures for the MT that has both capabilities. For example, TS 23.060 specifies Combined GPRS/IMSI Attach Procedure, which only the MT that has both capabilities can use. If the MT selects to use the combined procedure instead of GPRS Attach procedure and IMSI Attach procedure, the resource for the procedures between MT and CN serving node can be cut down half.

Similarly, MSC/VLR and SGSN can be integrated and implemented in one physical node. Combination of MAP operations for CS domain and PS domain between HLR and serving node, i.e. MSC/VLR (MSC server) and SGSN, can avoid the redundant operations and cut half down the resource for the operations.

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

Note that CS domain will remain even though in Release 2000, which introduces IP Multimedia subsystem, and later in a mean while. The output of this Work Item is still valid after Release 2000.

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/MT 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	7/2000	9/2000
Work Item Approval		9/2000
Drafting and discussion, updates of specifications	9/0000	2/2001
Submission to TSG CN and SA for approval		3/2001
Possible remaining corrections and clarifications		[TBD]

5 Service Aspects

Signalling reduction provides cost reduction for operators. Operator's cost reduction provides benefit of its subscribers as lower tariff.

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	
23.012			CN#11	if any
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

who is the rapporteur candidate.

12 Work item leadership

TSG CN WG 4

13 Supporting Companies

NTT DoCoMo, Fujitsu, NEC, NTC, NTT Comware, NTT Soft

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 operations between HLR and serving node	**S2**, *Sep.* *Architecture for combined MAP operations*
	S2 (,N4), *Sep.* *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*