Technical Specification Group Services and System Aspects   **LCS(01)0022**
LCS Workshop, London, UK, 11-12 January 2001

Source:	**Qualcomm Europe**
Title:	**Work Item Description for an Open SMLC-SRNC Interface within the UTRAN to support A-GPS Positioning**
Document for:	**Approval**
Agenda Item:	**7**

Work Item Description

Title: **Open interface between the SMLC and the SRNC within the UTRAN to support A-GPS Positioning**

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None identified.

3 Justification

At the 3GPP LCS Work Shop held in London on 1/11/01and 1/12/01 it was agreed that for A-GPS positioning, sufficient functional separation existed with RNC functions to justify the opening the interface towards a standalone SMLC.

4 Objective

The objective of this work item is to provide for support of an open interface between the SMLC and the SRNC within the UTRAN for the support of A-GPS positioning. This new interface would be analogous to the Lb interface defined in the GSM LCS specifications with the exceptions that the positioning messages are terminated at the SRNC and mapped to release 99 RRC messages and that the positioning messages also support broadcast of LCS assistance data in support of the RRC broadcast messages.

The addition of the interface should be compatible the release 99 Iu, Iur and Iub and radio interfaces.

5 Service Aspects

None identified.

6 MMI-Aspects

None identified.

7 Charging Aspects

None identified.

8 Security Aspects

None identified.

9 Impacts

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

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

This is a Release 4 Work Item

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
3GPP TS XX.YYY	SRNC – SMLC Location Protocol	RAN 2	RAN 3	RAN #11	RAN #11	See Note 1.
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#		Comments
25.401		UTRAN architecture description; Stage 2		RAN #11		Add new Iux interface and new A GPS SMLC network entity.
25.305		UTRAN Stage 2		RAN #11		Modify Network Reference Model to show stand alone SMLC and add stage 2 call flows for A-GPS positioning.

Note 1 : From a service invocation perspective this interface would be analogous to the Lb interface as defined in GSM 09.31 and GSM 08.71. From a positioning message perspective new messages need to be defined to align with the release 99 RRC messages. The Iux messages are terminated at the SRNC and mapped into the existing RRC messages. The new Iux messages are based on both the RRLP messages as defined in GSM 04.31 and the release 99 RRC messages themselves.

To allow for a stand alone SMLC, a new interface is required between the SMLC and the SRNC. The new stage 2 network architecture is shown below:
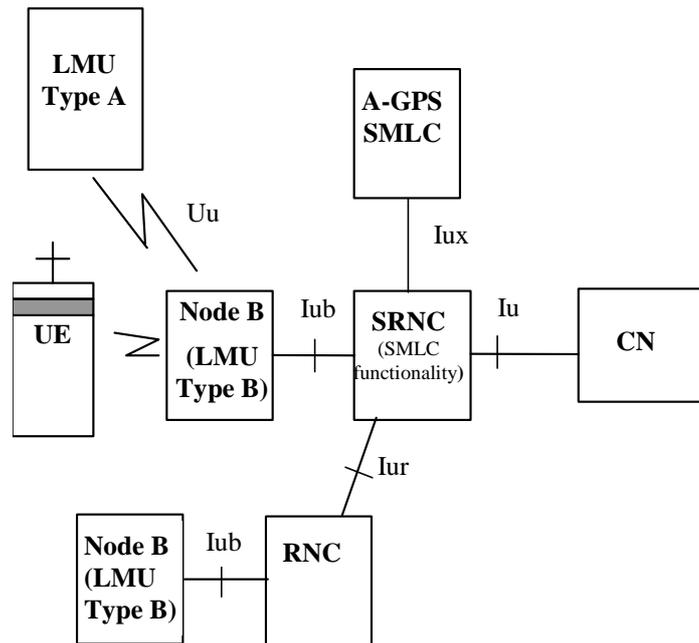
The new interface will need to support two types of messages; service invocation messages and positioning messages. The service invocation messages can be based on the Lb interface as defined in GSM 09.31 and GSM 08.71. The service invocation messages will provide for a request/response message exchange such that the SRNC can query the SMLC for the position of the UE.

The newly defined positioning messages can be based on the positioning messages currently specified in RRC and/or RRLP. In GSM LCS the positioning messages are passed transparently through the BSC over the Um interface. However for this new interface the positioning messages will be terminated at the SRNC and mapped to the corresponding RRC messages. Within the positioning messages there are three sets of messages. The first set of messages is equivalent to the RRLP Measure Position Request / Response message in GSM LCS and the RRC Measurement Control / Report message in UTRAN. The second set of messages is equivalent to the RRLP Assistance Data / Ack message in GSM LCS and the RRC Assistance Data Delivery / Ack message in UTRAN. The third set of messages is equivalent to the RRC LCS related SIB messages in UTRAN.

A sample call flow for a location estimate (either MO or MT) is shown below:
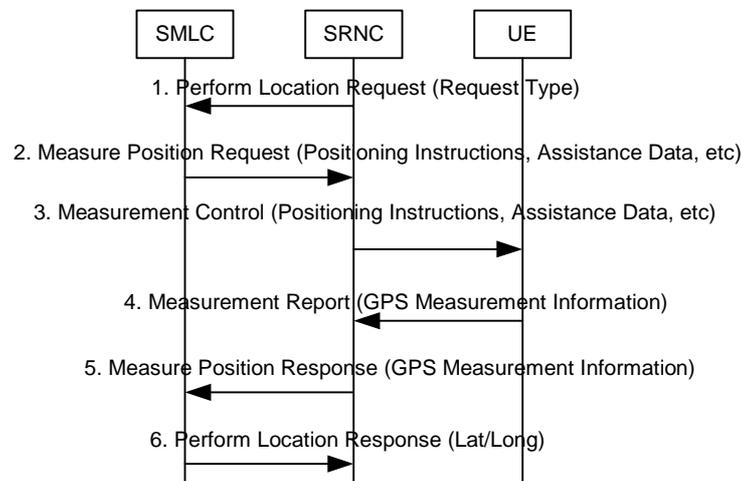
In the case of incomplete assistance data in the "measurement command", RRC allows for an UP error message to be returned to the SRNC with an explicit request for assistance data that will be provided to the SMLC. This would result in the steps 2 though 5 being repeated.

In the case of an MO request for assistance data, the call flow is basically the same. The only difference would be that the "assistance data' messages would be used.

The application layer messages defined on the interface between the SMLC and the SRNC will use Iups based transport mechanisms.

11 Work item raporteurs

Kirk Burroughs, Qualcomm, San Jose, California, USA

12 Work item leadership

RAN 2

13 Supporting Companies

Qualcomm and the other companies from the evening session?

14 Classification of the WI (if known)

	Feature (go to 14a)
X	Building Block (go to 14b)
	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 UE positioning

xxx1 Provision of SRNC - SMLC Open Interface

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