Technical Specification Group Services and System Aspects **TSGS#12(01)0341**
Meeting #12, Stockholm, Sweden, 18-21 June 2001

Source: **TSG SA WG2**
Title: **WID for LCS in Rel5**
Agenda Item: **7.2.3**

It is proposed to agree this Work Item description regarding location services in Release 5 as shown below. This Work Item description is based on the Release 4 LCS Work Item description and is intended to cover all system and core network aspects of LCS. In addition it should be evaluated in S2 (in August) whether separate Work Items on some of the listed LCS issues are seen needed.

Work Item Description

Title

Support of Location Services in Release 5, System and Core Network aspects.

1   3GPP Work Area

	Radio Access
X	Core Network
X	Services

2   Linked work items

Support of Location Services in UTRA FDD
Support of Location Services in UTRA TDD
Support of Location Services in Packet Switched GERAN and circuit switched LCS enhancements

3   Justification

LoCation Services (LCS) provide the mechanisms to support mobile location services for operators, subscribers and third party service providers.

This Work Item is needed in order to fulfill the requirements on supporting LCS in the packet switched domain and to enhance LCS with new service features in Release 5.

4   Objective

LCS shall be supported in the circuit switched domain and in the packet switched domain. LCS shall be supported in the Access Networks UTRAN FDD, UTRAN TDD and GERAN.

The objective is to define signaling and interactions, protocol elements and operations for the Core Network, Access Network and User Equipment from the system point of view to support location services.

A well defined set of LCS specifications for UMTS and GSM should be developed for Release 5.

The detailed LCS time plan is documented in the 3GPP Work Plan.

Task	Planned Start	Planned Finish
Work Item Revision	5/2001	6/2001
Work Item Approval		6/2001
Drafting and discussion, updates of specifications	7/2001	12/2001
Submission to TSG CN and SA for approval		12/2001
Possible remaining corrections and clarifications		6/2002

5   Service Aspects

New LCS service features shall be evaluated and included in the Service description specification (Stage 1) as seen feasible. The service description should be common for all Access Networks. Possible new LCS service features identified so far are:

- Location services in GERAN packet switched domain
The task is to handle the system and core network aspects of LCS support inGERAN packet switched domain in Rel'5.

- Event based LCS request and Periodic LCS request (Task 1171)
Event based LCS is planned to be included in Rel'4 to determine the position of a mobile when it becomes active in the network. Other types of events to initiate location reports should be investigated for Rel-5.
Periodic LCS could be seen as Event based LCS, where the event is that a defined period timer is running out and activates a location request/report. In Release 4 it has been decided that GMLC handles periodic LCS request, but in Rel-5 it should be investigated if also other network elements like MSC, SGSN, UE and RNC could handle periodic location reports autonomously. Depending upon how these possibilities are resolved, there may need to be a separate new RAN work item to cover RNC based periodic UE Positioning and a new T work item to cover UE based periodic UE Positioning aspects in Rel-5.

- LCS interoperation stage 2 aspects (Task 544)
Task 544 should be renamed "LCS interoperation aspects UTRAN- GERAN". Possibly there should be a separate Work Item created for Release 5, which should describe the problems and possibilities of UTRAN – GERAN LCS interoperation. If the task or new work item is not agreed the current task 544 should be deleted from the 3GPP work plan.

- LCS support in the IM CN subsystem (task 1183)
S1 is indicated to be doing a feasibility study on Location services in IMS, but there have been no contributions. A new work item might be needed, if this issue is seen relevant to be studied for standardization. If the task or a new work item is not agreed the current task 1183 should be deleted from the 3GPP work plan.

- Standardization of the Le interface
There is a new Work Item on a standardized Le interface between the LCS Client and GMLC.

- Localised services enabling features
Some of the location based services require information of the UE location and movements. These are for example
- Push services limited to UEs in defined area
- Location based charging where tariff is changed according to terminal where-abouts.
To support these type of services a location detection mechanism (= location based service trigger) would be needed in the network. The task would be to determine and specify an appropriate mechanism for this.
This task should probably be described in a separate Work Item. If this task is not agreed or if no new work item is proposed or agreed, this new task should not be added to the Work Plan.

- Adding the parameter "Velocity" in stage 2 and stage 3 specifications
The current LCS stage 1 specification Rel-4 includes the parameter "Velocity" as location information of the target UE. This parameter needs to be added in stage 2 and stage 3 specifications.

6   MMI-Aspects

7   Charging Aspects

8   Security Aspects

It should be studied are there some implications on User Privacy in periodic or deferred location reporting.

9   Impacts

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

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

New specifications						
Specification No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
Affected existing specifications						
Specification No.	CR	Subject		Approved at plenary#		Comments
22.071		Location Services (LCS); Service description, Stage 1		#8 (Rel'4)		
23.271		Functional stage 2 description of LCS		#10 (Rel'4)		
24.008		Mobile Radio Interface Layer 3 Specification				
29.002		Mobile Application Part (MAP)				
25.305		Stage 2 Functional Specification of Location Services in UTRAN				
25.413		UTRAN Iu interface RANAP signalling				
43.059		Functional Stage 2 Description of Location Services in GERAN				

11 Work item raporteurs

[Jan Kall., Nokia]

12 Work item leadership

TSG SA WG 2.

13 Supporting Companies

To be added.

14 Classification of the WI (if known)

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

14b   The WI covers several Building Blocks: List of Work Tasks under these Building Blocks

(Note that the table below is based on the 3GPP Work Plan for LCS. Some LCS tasks are already listed for Release 5 and some new tasks have been added.)