Technical Specification Group Services and System Aspects ***TSGS#17(02)0541***
Meeting #17, Biarritz, France, 9-12 September 2002

Source: **TSG SA WG2**
Title: **Study into applicability of GALILEO for LCS**
Agenda Item: **7.2.3**

Work Item Description

1 3GPP Work Area

X	Radio Access
X	Core Network
X	Services

2 Linked work items

(list of linked WIs)

The linked work items include at least the Work Item from SA 1-LCS subgroup dealing with the update of LCS service definition (ref S1-021795).

3 Justification

Currently, the LCS standards developed by 3GPP standardize assisted GPS solutions for mobile positioning. The 3GPP standard supports the current GPS system that provides a single frequency signal that has some vulnerability to interference and shadowing. As a consequence, the performance of A-GPS for in-door or urban environment applications is not perfect.

A new global 30-satellite constellation is being developed by the European Union and the European Space Agency called GALILEO. It will be a civil-controlled constellation offering several free of charge signals with good robustness to interference capability. Additionally, several system features have been especially designed to provide better availability performance in urban and in-door environment. These capabilities are stronger signal power, improved satellite geometry, use of better ranging codes and introduction of pilot tones.

The use of GALILEO might be beneficial to the mobile community. Additionally, the combined use of current and modernized GPS and GALILEO should be considered.

Although GALILEO may be seen as one more positioning alternative, it should be noted that it is very similar to GPS in terms of measurement technique, frequency plan and constellation.

4 Objective

- to identify the changes that might be needed to 3GPP standards to support "assisted Galileo" in addition or in combination with the currently specified assisted GPS

-to assess the potential benefits of using Galileo (alone or combined with GPS) on service performance: in particular the availability improvement for in urban/indoor environment will be investigated.

- to study the likely complexity differential between 3GPP mobiles utilizing A-GPS and those which might utilize a combination of A-GPS plus "Assisted GALILEO".

-and primarily to collect feedback from the 3GPP community on the desirable characteristics of GALILEO that would minimize the impact to 3GPP mobiles when introducing the extension of A-GPS techniques to GALILEO. This would be used to orientate final GALILEO signal designs.

This work item would result in a Technical Report in Rel-6, demonstrating the benefits of extending the existing LCS standards to include GALILEO and providing sufficient information for 3GPP to decide whether or not to make standard changes.

5 Service Aspects

The current work item does not propose to introduce new services.
Subsequently, the specific features offered by GALILEO may be used to support new services. In such a case, another work item will be open within SA 1.

6 MMI-Aspects

None

7 Charging Aspects

Charging aspects are generic and similar to those for A-GPS technology.

8 Security Aspects

Security aspects are similar to those for A-GPS technology.

9 Impacts

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

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

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
WI	Study into applicability of GALILEO for LCS	SA2			SA#17 (Sept 02)	Presentation and finalization of WI
TR 23.XXX	Study into applicability of GALILEO for LCS	SA2		SA#18 (Dec 02)	SA#20 (Jun 03)	Draft TR (by the end of 2002) Final issue of TR (by mid 2003)

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
		To be completed within WI activity		

11 Work item raporteurs

Alcatel

12 Work item leadership

SA 2

13 Supporting Companies

Alcatel, Thales, Orange, Qualcomm

14 Classification of the WI (if known)

This work item is a feature in the LCS activity.

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

14a The WI is a Feature: List of building blocks under this feature
(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature
(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block
(one Work Item identified as a building block)