3GPP - TSG SA #5 **Tdoc SP-99393**
11-13 October, 1999
Kyongju, Korea

Title: 3G TR 30.806 V 1.0.0:
Project plan on Location based services

Date: 1999-10-06

Source: S2

Purpose: For information

Agenda Point: 5.2.3

The attached document contains version 1.0.0 of the Project plan on Location based services.

3GPP SA#5 **TDoc SP-99???**

11 October 1999

Subject:	**Project Plan Outline: Location services in UMTS and cell broadcast services**
Source:	Editor – Nokia
Date:	6 October, 1999
Purpose:	For information and comments
Agenda item:	Project Coordination

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Introduction

Attached please find TR 30.806, Project plan outline on Location services (LCS) and Cell Broadcasting (CBS) services in UMTS for inter-group co-ordination in 3GPP.

Proposal

It is proposed that this version of the Project Plan Outline TR 30.806 is presented to SA#5 for information and comments.

3G PD 30.806-1.0.0 (1999-10)

Permanent Document

3rd Generation Partnership Project
3GPP work program
Inter group co-ordination aspects
Project Plan on location and cell broadcast services in UMTS
(3G PD 30.806 version 1.0.0)

Reference

Work Item Location services and cell broadcast services in UMTS

Keywords

Location services (LCS),
Cell broadcast services (CBS),
Digital cellular telecommunications system,
Universal Mobile Telecommunication System (UMTS), UTRA, UTRAN, IMT-2000

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Contents

Foreword

[Ed note: to be added by ETSI MCC]

1 Scope

This Permanent document describes the work program for location services (LCS) and cell broadcast services (CBS) in UMTS.

2 References

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or

b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

2.1 Normative references

[1] Tdoc TSGS#4(99)327, Proposed Work Item on Location Services for UMTS

[2] 3G PD 30.801, Overall Project Plan, Inter-group co-ordination

2.2 Informative references

[3] 3G TR 25.923, 3GPP TSG RAN WG2, Report on location services (LCS)

[4] GSM 10.71, Digital cellular telecommunications system (Phase 2+); Project scheduling and open issues: Location services (LCS)

3 Release 99

3.1 LCS - Work identified to fulfill the requirements for R99

Important location services features that need to be included in Release 99 should be identified, agreed and specified, or at least prepared for, in order to enable the introduction of more positioning methods later, with minimum impact on systems in operation.

The measurement method(s) concluded to be feasible shall be selected and standardized in release 99.

LCS Stage 1 and Stage 2 specifications shall be completed in 1999 and the full Stage 3 specifications shall be completed in 2000.

The RAN WGs are already studying these issues and the first results of these studies are documented in the RAN WG2

Report 25.923, version 1.0.0, on location services in UMTS. The report will be modified so that the parts, which are stage 1 and system level related, are moved into respectively S1 and S2 documentation.

3.1.1 Work to be done in T1P1

T1P1 continues the work on location services in GSM and plans to finalize GSM LCS Phase 2 in November 1999. Phase 3 includes LCS for GPRS and possibly Camel support for location services, but work on GSM LCS phase 3 has not yet started. It is seen that LCS for GPRS will have much in common with LCS for UMTS packet switched services.

3.1.2 Work to be done in TSG SA

3.1.2.1 Work to be done by WG S1

Extract from 25.923 the material which is of stage 1 nature, and incorporate the information (eventually with changes) into the common GSM-UMTS Stage 1 specification 22.071 on Location Services.

Extract LCS service requirements from existing UMTS specifications and other related material to be elaborated and incorporated in the stage 1 specification.

3.1.2.2 Work to be done by WG S2

The following work is foreseen in SA to generate Release 99 specifications on location services in UMTS:

Review, the technical report 3G TR 25.923: "3GPP TSG RAN WG2, Report on location services (LCS)" and move the material which is of system level into a new S2 document on Release 99 LCS System level Stage 2 containing the following:

- Functional description of location services in UMTS, release 99, including LCS for packet switched services
- System architecture for location services in UMTS, release 99

The system stage 2 written by S2 should be done with a maximisation of synergies with GSM LCS Phase 2 as requested by the WI description (Ideally it should be a unique system functional architecture)

S2 stage 2 shall describe the overall system and its architecture for LCS in UMTS to support the services described in the Stage 1 specification . UTRAN is treated as one block and the information flow between the Core Network and UTRAN over the Iu interface shall be described.

3.1.2.3 Work to be done by WG S3

Study and verify existing requirements and elaborate on security and privacy aspects of location services.

3.1.2.4 Work to be done by WG S4

None identified.

3.1.2.5 Work to be done by WG S5

[To be agreed in SA5, wording to be improved.]

Basic network management of LCS functions, e.g. inclusion of LCS NEs in the information model for support of Fault Management.

3.1.3 Work to be done in TSG RAN

3.1.3.1 Work to be done by WG R1

Location positioning implications to the Radio Layer 1.

- measurements to be provided to upper layers for the release 99 positioning method(s)
- L1 mechanism/procedures for the provision of the measurements

3.1.3.2 Work to be done by WG R2

Completion of the Technical Report on LCS 25.923 with the following:

- reference model (stage 2) of LCS for UE and UTRAN
- identification of the positioning method(s) to be supported in release 99 specifications

Identification of the measurements to be provided by the physical layer in 25.302 (done), with a selection of the mandatory measurements in release 99 for the release 99 positioning methods (to be done)

Incorporation of the changes according to the final version of 25.923 on the radio interface protocol specifications.

Overlapping between the RAN2 TR and other documetnts should be avoided where possible.

As the S2 Stage 2 is progressed redundant information is to be removed from the R2 TR.

3.1.3.3 Work to be done by WG R3

[To be agreed in RAN WG3]

Location positioning implications to the UTRAN interfaces based on TR 25.923 for the release 99 positioning method(s):

- Iu interface, detail the area-representation delivered over Iu.
- Iub interface, so far no specific support specified for LCS over Iub, to be studied for Release 2000
- Iur Interface, so far no specific support specified for LCS over Iur, to be studied for Release 2000.

3.1.3.4 Work to be done by WG R4

Study of the system RF scenarios and input requirements to WG1 on the accuracy for the physical layer measurements based on the release 99 positioning method(s).

3.1.4 Work to be done in TSG CN

3.1.4.1 Work to be done by WG N1

[To be discussed and agreed in CN WG1.]

From N1 terms of reference: Location services L3 signalling between the user equipment and the core network.

N1 shall adapt [a defined subset of] the LCS specifications (belonging to N1) developed for GSM LCS Phase 2 in release 98 to include support for UMTS LCS in release 2000 [release 1999?], as defined in UMTS system stage 2 and UTRAN stage 2 specifications.

The specification subset is based on the following basic assumptions for LCS in UMTS:

- GMLC is connected to 3G-MSC and 3G-SGSN over identical interfaces, ie Lg in GSM
- RNC contains SMLC functionality
- There are only two types of LMU: LMU associated with Node B and stand-alone LMU

3.1.4.2 Work to be done by WG N2

[To be discussed and agreed in CN WG2.]

N2 shall adapt [a defined subset of] the LCS specifications (belonging to N2) developed for GSM LCS Phase 2 in release 98 to include support for UMTS LCS in release 2000 [release 1999?], as defined in UMTS system stage 2 and UTRAN stage 2 specifications.

The specification subset is based on thefollowing basic assumptions for LCS in UMTS:

- GMLC is connected to 3G-MSC and 3G-SGSN over identical interfaces, ie Lg in GSM
- RNC contains SMLC functionality
- There are only two types of LMU: LMU associated with Node B and stand-alone LMU

Signalling support for location services between GMLC and 3G-SGSN and GMLC and 3G-MSC.

- MAP messages for LCS
- Camel support for LCS

3.1.4.3 Work to be done by WG N3

None identified.

3.1.4.4 Work to be done by WG N-SS

None identified.

3.1.5 Work to be done by TSG T

3.1.5.1 Work to be done by WG T1

None identified

3.1.5.2 Work to be done by WG T2

Terminal Services and Capabilities for LCS.

3.1.5.3 Work to be done by WG T3

None identified

3.2 LCS - List of R99 deliverables on LCS in UMTS

List of deliberables					
Del #	**Title**	**Working Group**	**Editor**	**Completion date**	**Comment**
22.071	Location Services Service description, Stage 1	S1	Randolph Wohlert, Pacific Bell Wireless	12/99	UMTS specific requirements to be added.
22.100	UMTS Phase 1	S1			
22.105	Services and service capabilities	S1			Main requirements for location features in UMTS
23.032	Universal geographical area description (GAD)	N1		12/99	Common to GSM and UMTS

23.110	UMTS Access stratum; Services and functions	S2	Oscar Lopez-Torres, T-Mobil		Requirements for UE Location Identification
23.171	Location Services in UMTS; Functional description, System Stage 2	S2	Jan Kåll, Nokia	12/99	Including S3, S5, N1, N2 and T2 aspects on LCS?
23.060	General Packet Radio Service (GPRS); Service description; Stage 2	S2	Hans-Petter Naper, Motorola	12/99	Support for location reporting included
25.413	UTRAN Iu interface RANAP signalling	R3	Atte Länsi-salmi, Nokia	12/99	Support for location request and response included.
25.302	Services provided by the physical layer	R2		12/99	done
25.923	Stage 2 Functional Specification of Location Services in UTRAN	R2	David Steer, Nortel Networks	10/99	Including R1 and R3 aspects?
30.806	Project plan on Location and cell Broadcast Services	S2	Jan Kåll, Nokia	12/99	(this document)
32.102	3G Telecom management architecture	S5		12/99	Inclusion of LCS NEs in the information model
? 25.215	Physical layer; measurements (FDD)	R1			Will 25.923 cover also L1 functionality?
? 25.225	Physical layer; measurements (TDD)	R1			Will 25.923 cover also L1 functionality?
?	S3 specifications on LCS	S3 ?			
?	Other R1 specifications ?	R1 ?			
?	Other R3 specifications?	R3			LCS support in Iur and Iub?
?	CN specifications on LCS?	N1,N2?			
?	T specifications on LCS?	T2 ?			

3.3 LCS - Time plan

The time plan below is for illustration only at this stage. The format of the table is for further study and should be in line with the format of the meeting schedule maintained by the MCC.

RAN WG2 plans to decide on the positioning method(s) to be supported in release 99 at its meeting #7, 20-24th of September 1999.

Main milestones to develop LCS in UMTS:

- Stage 1 on LCS for GSM and UMTS (22.071) approved in December 1999
- Stage 2 on LCS for UMTS approved in December 1999
- Detailed UTRAN specifications to support the selected positioning method(s) approved in December 1999
- Full Stage 3 on LCS for UMTS (mainly CRs to existing specifications) to be developed during 2000, approved by December 2000

This time plan is a project plan, including the completion date of all the deliverables.

	Calender week (week 50= 13.12. to 19.12.99)																	
Document	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5
22.071 Stage1									S1									
23.171 System Stage2				S2 S3? S5?			N2?		S2	S3?	S5?							

25.923 UTRAN Stage 2	R2	R1?		R3?	R2				R1? S2?	R2 R3?								
?				R3						R3								
?		R1							R1									
?	T2							T2										

An underlined entry in the table indicates that the listed document is planned for completion in that meeting.

There may be several WGs involved in creating the Stage 2 specifications on LCS in release 99.

For the involved groups the following meetings have been scheduled so far:

	Calender week (week 50= 13.12. to 19.12.99)															
Week/ Group	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3
T1P1.5							X									
S1									S1							
S2				S2					S2							
S3				S3						S3						
S5				S5							S5					
R1		R1							R1							
R2					R2					R2						
R3				R3						R3						
T2	T2							T2								
N1																
N2							N2									

Note: Possible adhocs planned by these groups are not indicated

3.4 CBS - Work identified to fulfill the requirements for R99

The *Cell Broadcast* Service (CBS) was defined as a UMTS Phase 1 requirement to guarantee the continuity of the corresponding GSM services. It shall be provided seamlessly (as far as the user or the users terminal equipment is concerned) across the UMTS and GSM network.

3.4.1 Work to be done in TSG SA

3.4.1.1 Work to be done by WG S1

To transfer the GSM Specification 02.03 on teleservices containing the CBS stage 1 description to a 3GPP TS 22.103. As a new radio interface is used possible adaptations may be needed. For this case S1 has to identify those new service requirements and to modify the stage 1 description in TS 22.103.

[To be agreed in S1]

3.4.1.2 Work to be done by WG S2

The working assumption has been taken to incorporate the CBS into the core network. This working assumption has to stabalize and other architecture issues has to be resolved in order to reach an agreed architecture for CBS.

[To be agreed in S2]

3.4.1.3 Work to be done by WG S3

None identified.

3.4.1.4 Work to be done by WG S4

None identified.

3.4.1.5 Work to be done by WG S5

None identified.

3.4.2 Work to be done in TSG RAN

3.4.2.1 Work to be done by WG R1

None identified.

3.4.2.2 Work to be done by WG R2

RNC/UE protocols

To specify the layer 2 of the air interface and to identify the needed changes for CBS in the area of radio resource control - RRC - and radio link control - RLC. The Broadcast/Multicast control has to be specified.

[To be agreed in RAN2]

3.4.2.3 Work to be done by WG R3

To define the IP based protocol between Cell Broadcast Center and the RNC (equivalent of 03.49) based on the requirements defined by T2. Coordination with N1 and N2 is needed.

To consider the influence on the Iu protocol and the SGSN IP routing.

[Comment from Per Willars:] There is a general architectural issue to sort out. In principle, UTRAN offers its services to the CN via the Iu interface. This should, in principle, include also the UTRAN support for the SMS CB service. Since the RNC terminates the protocol requesting SMS CB services from the CBC, this protocol should be part of the Iu protocols, and thus be specified by R3. It should be further discussed if the proposed approach for the SMS CB is the way to go.*[To be agreed in RAN3]*

3.4.2.4 Work to be done by WG R4

None identified.

3.4.3 Work to be done in TSG CN

3.4.3.1 Work to be done by WG N1

To define the IP based protocol between Cell Broadcast Center and the RNC (equivalent of 03.49) based on the requirements defined by T2. Coordination with R3 and N2 is needed.

To consider the influence on the Iu protocol and the SGSN IP routing.

[To be agreed in N1]

3.4.3.2 Work to be done by WG N2

To define the IP based protocol between Cell Broadcast Center and the RNC (equivalent of 03.49) based on the requirements defined by T2. Coordination with R3 and N1 is needed.

To consider the influence on the Iu protocol and the SGSN IP routing.

[To be agreed in N2]

3.4.3.3 Work to be done by WG N3

None identified.

3.4.3.4 Work to be done by WG N-SS

None identified.

3.4.4 Work to be done by TSG T

3.4.4.1 Work to be done by WG T1

None identified

3.4.4.2 Work to be done by WG T2

To transfer the GSM Specification 03.41 to a 3GPP TS 23.041 version3.0.0.

To define the application level protocol between CBC and UE (message id, serial number etc. as per 03.41).

To identify requirements for CBC/RNC protocol (as per 03.41 requirements for BSC/CBC interface, outlining functions like write/replace),

Confirmation that technical solutions proposed in other groups can meet S1's requirements.

[To be agreed in T2]

3.4.4.3 Work to be done by WG T3

None identified

3.5 CBS - List of R99 deliverables on CBS in UMTS

List of deliberables					
Del #	**Title**	**Working Group**	**Editor**	**Completion date**	**Comment**
TR25.925	Report on Broadcast/Multicast services	R2	Peter Krishan, D2 Mannesmann	12/99	Approval unclear
TS 22.103 Stage 1	Teleservices supported by a GSM Public Land Mobile Network (PLMN)	S1	???	12/99	Release 99 version, UMTS specific requirements to be added. Approval of Changes planed for October SA Meeting.

TR 23.920	Evolution of the GSM platform towards UMTS	S2	Liz Daniel, Lucent	12/99	Containing the CBS Architecture
TS 23.301	Radio Interface Protocol Architecture	R2		12/99	Changes already performed
TS 23.303	UE functions and inter-layer procedures in connected mode	R2		12/99	Changes needed!
TS 23.304	UE procedures in Idle Mode	R2		12/99	Changes needed!
TS 23.321	Description of the MAC protocol	R2		12/99	Work has started but additinal changes are needed!
TS 23.322	Description of the RLC protocol	R2		12/99	Minor changes needed!
TS 23.324	Broadcast/Multicast Control	R2		12/99	New Specification, to be done!
TS 23.331	RRC protocol	R2		12/99	Changes needed!
TS 23.041	Technical realization of Short Message Service Cell Broadcast (SMSCB)	T2		12/99	Has to be moved from GSM 03.41 to 3GPP
TS 23.049	Protocol Stack for interconnecting Cell Broadcast Center (CBC) and Radio Network Controler (RNC)	Responsibility unclear!		???	Spec has to be created!

3.6 CBS - Time plan

The time plan below is for illustration only at this stage. The format of the table is for further study and should be in line with the format of the meeting schedule maintained by the MCC.

(Proposed) Main milestones to develop LCS in UMTS:

- Stage 1 on CBS as part of the teleservice specification for UMTS approved in December 1999
- Detailed UTRAN specifications to support CBS approved in December 1999
- Detailed Core Network specification to support CBS approved in ?

This time plan is a project plan, including the completion date of all the deliverables.

	Calender week (week 50= 13.12. to 19.12.99)																	
Document	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5
25.925 Report					R2													
22.103 Stage1									S1									
23.920				S2					S2									
23.301					R2					R2								
23.303					R2					R2								

23.304					R2					R2								
23.321					R2					R2								
23.322					R2					R2								
23.324					R2					R2								
23.331					R2					R2								
23.041	T2							T2										
23.049																		

An underlined entry in the table indicates that the listed document is planned for completion in that meeting.

For the involved groups the following meetings have been scheduled so far:

	Calender week (week 50= 13.12. to 19.12.99)															
Week/ Group	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3
T1P1.5							X									
S1									S1							
S2				S2					S2							
S3				S3						S3						
S5				S5							S5					
R1		R1							R1							
R2					R2					R2						
R3				R3						R3						
T2	T2							T2								
N1																
N2							N2									

Note: Possible adhocs planned by these groups are not indicated

4 Release 2000

4.1.1 Work identified to fullfill the requirements for R00

4.1.1.1 Work to be done by TSG SA

4.1.1.1.1 Work to be done by WG S1

To be defined by SA1.

[The stage 1 service description of location services in UMTS has to be elaborated based on input from the report 25.293, GSM 02.71 and the LCS requirements of UMTS in 22.105, 23.110, 23.121 and 23.920. A related specification is also GSM 03.32, which specifies the Universal Geographical Area Description.

UMTS is required to provide enhanced location services, both regarding accuracy and regarding service capabilities. ARIB has studied location services for the 3rd generation system and the outcome of that work is available in the study report ARIB/AIF-WG/SWG2/ST9 "Third generation (3G) mobile communication system; Technical study report on the location services and technologies". The Services Working Group of the North American Interest Group of the GSM MoU Association is elaborating on selected location based services and is producing a service requirements document (TSG S1#4 (99)423).

It is seen important to enable service continuity going from GSM to UMTS. It is preferable that services and

applications developed based on GSM LCS features can be used also in UMTS.]

4.1.1.1.2 WG SA2

The following work is foreseen in SA to generate Release 2000 specifications on location services in UMTS:

[Stage 2 on LCS in UMTS, release 2000.]

4.1.1.1.3 WG SA3

4.1.1.1.4 WG SA5

[To be agreed in SA5]

Network management and operational aspects of location services.

- network management of LCS functions, e.g. idle period downlink and network assisted GPS
- O&M of location services network elements

4.1.2 List of R00 deliverables on LCS in UMTS

LCS support is to be included in the specifications listed below.

List of deliberables					
Del #	Title	**Working Group**	**Editor**	**Completion date**	**Comment**
TR 30.806	Project plan on Location and cell Broadcast Services	S2	Jan Kåll, Nokia		
22.xxx Stage 1	Location Services (LCS); Service description, Stage 1	S1	Randolph Wohlert, Pacific Bell Wireless		
23.xxx Stage 2	Location Services (LCS); Functional description, Stage 2	S2	Jan Kåll, Nokia		
25.923	Stage 2 Functional Specification of Location Services in UTRAN	R2	David Steer, Nortel Networks		
tbd		S3			
tbd		S5			
25.214	FDD; Physical layer procedures	R1			
25.215	Physical layer; measurements (FDD)	R1			
25.224	TDD; Physical layer procedures	R1			
25.225	Physical layer; measurements (TDD)	R1			
? 25.231	Physical layer; measurements	R1			Shall this specification inlcude LCS measurements?
25.301	Radio Interface Protocol Architecture	R2			
25.302	Services provided by the physical layer	R2			
23.303	UE functions and inter-layer procedures in connected mode	R2			
23.304	UE procedures in Idle Mode	R2			
23.331	RRC protocol	R2			
? 25.922	Radio resource management strategies	R2			will LCS support be visible in this specification?
? 23.049	Protocol Stack for interconnecting Cell Broadcast Center (CBC) and Radio Network Controler (RNC)	Responsibility unclear!			Shall this specification also include support for LCS signaling GMLC- RNC?

? 25.401	UTRAN overall description	R3			Shall this specification include an LCS overall description?
25.410	UTRAN Iu interface: general aspects and principles	R3			
25.413	UTRAN Iu interface RANAP signalling	R3			Support for location request and response included.
25.420	UTRAN Iur inter-face: general aspects and principles	R3			
25.423	UTRAN Iur interface RNSAP signalling	R3			
? 25.425	UTRAN Iur interface user plane protocols for CCH data streams	R3			will LCS support be visible in this specification?
25.430	UTRAN Iub inter-face: general aspects and principles	R3			
25.433	UTRAN Iub inter-face NBAP signalling	R3			
? 25.931	UTRAN functions, examples on signalling procedures	R3			Shall this specification include examples on LCS signalling procedures?
tbd		T2			
tbd		N1			
tbd		N2			

4.1.3 Time plan

Time plan is for illustration only at this stage. Format is for further study and should be in line with the format of the meeting schedule maintained by the MCC.

This time plan is a project plan, including the completion date of all the deliverables.

	Calender week 99 (week 50= 13.12. to 19.12.99)																		
Document	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6

5 Change history

Change history					
	Date			**New version**	**Subject/Comments**
	July 1999			0.0.0	First draft, Tdoc SA2-99613
	July 1999			0.0.1	According to agreed document structure
	August 1999			0.0.2	Added Stage 1 and 2 for R99 and information on work in RAN WGs, Rephrased S1, added N1and N-SS.
	August 1999			0.1.0	Changed text on positioning method(s) in release 99
	Sept. 99			0.1.2	Outcome of joint meeting S2/R2 27.9.1999
	Sept. 99			0.1.3	Comments received before 15.9.99
	Sept. 99			0.1.4	Cell Broadcasting added, Martin Guntermann Added list of specifications for LCS in rel ease 99 and release 2000
	Sept. 99			0.1.5	More detailed task description added for N1 and N2

Annex A:
Scope of the UMTS Location and Cell Broadcasting Services inter group co-ordination ad hoc group

The UMTS LCS and CBS inter group co-ordination ad hoc group shall co-ordinate the work on location services in UMTS and ensure that all 3GPP groups relevant for location services get involved in a timely manner. The ongoing work in T1P1.5 on GSM LCS Phase II shall be taken in account as well.

The UMTS LCS and CBS inter group co-ordination ad hoc group shall also co-ordinate the work on cell broadcasting services in UMTS and ensure that all 3GPP groups relevant for cell broadcasting services get involved in a timely manner.

The LCS and CBS ad hoc group shall evaluate the UMTS location services and cell broadcast services in order to identify what issues are to be standardized and what are the appropriate Work Groups for this and set up a time plan for the work.

The *Location services* feature in UMTS is mainly a release 2000 issue, but the LCS and CBS ad hoc shall also seek to identify what LCS system functions should be included in Release 99 and the affected WGs and specifications.

The *Cell Broadcast* Service (CBS) is a release 99 requirement and shall be provided seamlessly (as far as the user or the users terminal equipment is concerned) across the UMTS and GSM network in order to guarantee the continuity of the corresponding GSM services in UMTS.

LCS and CBS ad hoc reports to TSG SA WG2.

Annex B:
Contact persons

Group	Chair person/ Contact person*	Email
T1P1.5	Sonia Doshi	sdoshi@nortel.com
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