Technical Specification Group Services and System Aspects   *TSGS#9(00) 0392*
Meeting #9, Hawaii, USA, 25-28 September 2000

Source: **TSG SA1**

Title: **CRs to 22.071 on LCS for R00**

Document for: **Approval**

Agenda Item: **7.1.3**

Spec	CR	Rev	Phase	Cat	Subject	Vers	New Vers	SA1 Doc. No.
22.071	009		R00	C	Provision of Velocity for Location Services	4.0.0	4.1.0	S1-000667
22.071	010		R00	B	External LCS client identity	4.0.0	4.1.0	S1-000670
22.071	011		R00	B	Privacy Control for LCS	4.0.0	4.1.0	S1-000671
22.071	012		R00	F	Privacy Control for LCS	4.0.0	4.1.0	S1-000672
22.071	013		R00	D	Clarifications to LCS on privacy and Service response	4.0.0	4.1.0	S1-000673
22.071	014		R00	F	LCS: Geographic Location	4.0.0	4.1.0	S1-000674
22.071	015		R00	D	Adding statement on "active" and "idle" UE in chapter 4.13	4.0.0	4.1.0	S1-000675
22.071	016		R00	D	Radio Access Network support for LCS	4.0.0	4.1.0	S1-000676
22.071	017		R00	D	LCS, Identification of a Target UE using IP addresses	4.0.0	4.1.0	S1-000677
22.071	018		R00	D	LCS: LCS Open Service Architecture (OSA) and Application Programming Interface.	4.0.0	4.1.0	S1-000678

** Next section with comments or alternative change proposal **

4.2 Location Information

Location Information consists of Geographic Location, Velocity, and Quality of Service information, as described in the subsequent sections.

4.2.1 Geographic Location

Provision of the geographic location of a target MS is applicable to all LCS services.

4.2.2 Velocity

Velocity is the combination of Speed and Heading (direction) of a Target UE. The LCS Server may provide the Velocity of an MS.

For Value Added Services and PLMN Operator Services, the following is applicable:

Provision of the velocity of a target MS is application driven. Location Services may allow an LCS Client to request or negotiate the provision of velocity.

For Emergency Services there is no requirement to provide velocity.

4.3 Quality of Service

** Next section with comments or alternative change proposal **

4.8 Privacy

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The Target MS Subscriber shall be able to restrict access to the ~~l~~Location ~~i~~Information (permanently or on a per attempt basis). The LCS Client access shall be restricted unless otherwise stated in the Target MS Subscription Profile. The home network shall have the capability of defining the default circumstances in which the Target MS's ~~location location~~Location Information is allowed to be provided - as required by various administrations and/or network requirements.

** Next section with comments or alternative change proposal **

6.2 Location Information Provided to the LCS Client

For value added services, the following is applicable:

The LCS Server shall provide, on request, the current or most recent ~~geographic location geographic L~~location Information (if available) of the Target MS or, if ~~location location~~ positioning fails, an error indication plus optional reason for the failure.

For PLMN operator services (where allowed by local regulatory requirements and restrictions on MS privacy), ~~location related information l~~Location related ~~i~~Information for a particular target MS may be provided to a PLMN operator LCS client either on request or on the occurrence of an event in the LCS server that has been defined to equate to such a request.

For emergency services (where required by local regulatory requirements), the ~~location related information~~ geographic location ~~related information~~ may be provided to an emergency services LCS Client either without any request from the client at certain points in an emergency services call (e.g. following receipt of the emergency call request, when the call is answered, when the call is released) or following an explicit request from the client. The former type of provision is referred to as a "push" while the latter is known as a "pull". In the case of a "pull", the emergency service LCS Client shall identify the Target MS as defined in section 6.1. Table 3 shows the information that may be provided to the client for either a "push" or a "pull".

Table 3: Location related information provided to an emergency services LCS Client

Type of Access	Information Items
Push	Current Geographic Location (if available) MSISDN IMSI IMEI NA-ESRK NA-ESRD State of emergency call – unanswered, answered, released (note 1)
Pull	Geographic location (note 2), either: Current location initial location at start of emergency call

NOTE 1: indication of call release means that any NA-ESRK will no longer identify the calling MS subscriber

NOTE 2: which type of location is required will be indicated by the LCS Client

** Next section with comments or alternative change proposal **

6.4.2   Privacy Exception List

To support privacy , the LCS Server shall enable each Target MS Subscriber to subscribe to a "privacy exception list" containing the LCS Client identifiers and classes of LCS Clients to which the MS's ~~location l~~Location Information may be provided. An empty privacy exception list shall signify an intent to withhold ~~l location~~ Location Information from all LCS Clients. The classes that can be included are as follows.

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CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

	22.071	CR	010		Current Version:	4.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	SA #9		for approval	X		strategic		*(for SMG*
list expected approval meeting # here ↑			for information			non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network **X**
(at least one should be marked with an X)

Source:	TSG SA1	**Date:**	14 August 2000

Subject: External LCS client identity

Work item: External LCS client identity (Support of Location Services in UMTS Release 2000)

Category:	F	Correction		**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature	X		Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification			Release 99	
					Release 00	X

Reason for change:	LCS features shall be supported in PS domain in R00. Therefore, external LCS client identity in the PS domain shall be clarified.

Clauses affected: 3.2

Other specs Affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

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<--------- double-click here for help and instructions on how to create a CR.

3.2 Definitions

For the purposes of the present document the following definitions apply:

Current Location: after a location attempt has successfully delivered a location estimate and its associated time stamp, the location estimate and time stamp is referred to as the 'current location' at that point in time.

Deferred location request: a location request where the location response (responses) is (are) not required immediately.

Immediate location request: a location request where a single location response only is required immediately.

Initial Location: in the context of an originating emergency call the location estimate and the associated time stamp at the commencement of the call set-up is referred to as 'initial location'.

Last Known Location: The current location estimate and its associated time stamp for Target MS stored in the LCS Server is referred to as the 'last known location' and until replaced by a later location estimate and a new time stamp is referred to as the 'last known location'.

LCS Client: a software and/or hardware entity that interacts with a LCS Server for the purpose of obtaining location information for one or more Mobile Stations. LCS Clients subscribe to LCS in order to obtain location information. LCS Clients may or may not interact with human users. The LCS Client is responsible for formatting and presenting data and managing the user interface (dialogue). LCS Client is identified by a unique international identification, e.g. E.164, number or Access Point Name (APN).

NOTE: The LCS Client may reside inside or outside the PLMN.

LCS Client Access barring list: an optional list of MSISDNs per LCS Client where the LCS Client is not allowed to locate any MSISDN therein.

LCS Client Subscription Profile: a collection of subscription attributes of LCS related parameters that have been agreed for a contractual period of time between the LCS client and the service provider.

LCS Feature: the capability of a PLMN to support LCS Client/server interactions for locating Target MSs.

LCS Server: a software and/or hardware entity offering LCS capabilities. The LCS Server accepts requests, services requests, and sends back responses to the received requests. The LCS server consists of LCS components which are distributed to one or more PLMN and/or service provider.

Location Estimate: the geographic location of an MS and/or a valid Mobile Equipment (ME), expressed in latitude and longitude data. The Location Estimate shall be represented in a well-defined universal format. Translation from this universal format to another geographic location system may be supported, although the details are considered outside the scope of the primitive services.

North American Emergency Services Routing Digits (NA-ESRD): a telephone number in the North American Numbering Plan (NANP) that can be used to identify a North American emergency services provider and its associated LCS client. The ESRD also identifies the base station, cell site or sector from which a North American emergency call originates.

North American Emergency Services Routing Key (NA-ESRK): a telephone number in the North American Numbering Plan (NANP) assigned to an emergency services call by a North American VPLMN for the duration of the call. The NA-ESRK is used to identify (e.g. route to) both the emergency services provider and the switch in the VPLMN currently serving the emergency caller. During the lifetime of an emergency services call, the NA-ESRK also identifies the calling mobile subscriber.

PLMN Access barring list: an optional list of MSISDN per PLMN where any LCS Client is not allowed to locate any MSISDN therein except for certain exceptional cases.

Privacy Class: list of LCS Clients defined within a privacy exception class to which permission may be granted to locate the target MS. The permission shall be granted either on activation by the target MS or permanently for a contractual period of time agreed between the target MS and the service provider.

Privacy Exception List: a list consisting of various types of privacy classes (i.e. operator related, personal etc.). Certain types of classes may require agreement between the service provider and the target MS.

Target MS: The MS being positioned.

Target MS Subscription Profile: the profile detailing the subscription to various types of privacy classes.

TSG-SA WG 1 (Services) meeting #9/#10   S1-000671
Orlando, USA 13th to 17th November 2000   Agenda Item:

3GPP/TSG SA WG1 LCS Ad Hoc   *Document* **S1-LCS000020**
Austin, USA, 14-15 August 2000   *e.g. for 3GPP use the format TP-99xxx*
                                                                        or for SMG, use the format P-99-xxx

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	22.071	CR	011	Current Version:	4.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to:	SA #9	for approval	X	strategic		(for SMG
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Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM [ ]   ME [X]   UTRAN / Radio [X]   Core Network [X]
(at least one should be marked with an X)

Source: TSG SA1   **Date:**   17 July 2000

Subject: Privacy Control for LCS

Work item: Privacy Control for LCS (Support of Location Services in UMTS Release 2000)

Category: F Correction   **Release:** Phase 2   [ ]
                 A Corresponds to a correction in an earlier release   [ ]   Release 96   [ ]
(only one category   B Addition of feature   [X]   Release 97   [ ]
shall be marked   C Functional modification of feature   [ ]   Release 98   [ ]
with an X)   D Editorial modification   [ ]   Release 99   [ ]
                                                                                    Release 00   [X]

Reason for change: Privacy control is an important feature for LCS. There are varieties of requirements for privacy and it shall be possible for the users to control privacy level. The requirements need to be clearly described.

Clauses affected: 4.8   5.2.4   6.4.2   7.2.3

Other specs Affected:	Other 3G core specifications	[ ]	→ List of CRs:	
	Other GSM core specifications	[ ]	→ List of CRs:	
	MS test specifications	[ ]	→ List of CRs:	
	BSS test specifications	[ ]	→ List of CRs:	
	O&M specifications	[ ]	→ List of CRs:	

Other comments:

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4.8 Privacy

Specific local, national, and regional privacy regulations must be complied with, and multiple layers of permissions may be required.

Location information must always be available to the network service provider.

Means shall be provided for the MS subscriber to control privacy for value added services.

The user shall be able to change the setting of the Privacy exception list at any time.

Unless required by local regulatory requirements, or overridden by the target MS User, the target MS may be positioned only if allowed in the MS subscription profile. In general, for valued added location services, the target MS being positioned should be afforded the maximum possible privacy, and should not be positioned unless the positioning attempt is explicitly authorized. In the absence of specific permission to position the target MS, the target MS should not be positioned.

It may also be possible for a target MS to authorize positioning attempts after the target MS is notified of a positioning request and the target MS grants permission for positioning. This notification condition (notification with privacy verification) shall be specified in the Target MS Subscription Profile. (see the subsequent "target subscriber notification" section of this document for charging and billing aspects).

The privacy of an inanimate asset for an embedded target MS may be completely defined by the MS subscriber.

Additionally, specific privacy exceptions may exist for compliance with mandated location based services (such as for emergency services or lawful intercept) which are required by national or local regulatory requirements.
For Value Added Services, the following is applicable:
The Target MS Subscriber shall be able to restrict access to the location information (permanently or on a per attempt basis). The LCS Client access shall be restricted unless otherwise stated in the Target MS Subscription Profile. The home network shall have the capability of defining the default circumstances in which the Target MS's location is allowed to be provided - as required by various administrations and/or network requirements.
It shall be possible for location services to support conditional positioning. Under these conditions, an application that is granted conditional positioning authorization must notify and obtain positioning authorization from the user of the target MS prior to performing the positioning process. Thus the user of the target MS shall be able to accept or reject the positioning attempt.

The default treatment, which is applicable in the absence of a response from the Target MS, shall be specified in the LCS Subscription Profile. Thus for some location services the default treatment may be to accept the positioning request, whereas for other location services the default treatment may be to reject the positioning attempt.

However, considering that in general, users shall be afforded the maximum possible privacy, and shall not be positioned unless the target subscriber authorizes the requesting location application to perform positioning, the default condition shall normally be to deny the positioning attempt.
For PLMN operator services, the target MS subscriber may be able to restrict access to location information used to enhance or support particular types of service. The LCS client access shall be restricted unless stated otherwise in the Target MS subscription profile. The target MS user shall not be notified of any authorized location attempt.
For Emergency Services (where required by local regulatory requirements) Target MSs making an emergency call may be positioned regardless of the privacy attribute value of the subscriber associated with the Target MS (or ME) making the call.
For Lawful Interception Services (where required by local regulatory requirements), target MSs may be positioned under all circumstances required by local regulatory requirements. The target MS user shall not be notified of any location attempt.

5.2.4 Target MS

The Target MS is the object to be positioned by the LCS Server. For network based positioning methods, no support for LCS is required by the target MS. For mobile assisted and mobile based positioning methods, the target MS actively supports LCS. For all positioning methods, the ability to control privacy may be required to be given to the MS user for each location request and/or to the MS subscriber through the Target MS subscription profile to satisfy local regulatory requirements (see the previous section on Privacy).

6.4.2 Privacy exception list

To support privacy, the LCS Server shall enable each Target MS Subscriber to subscribe to a "privacy exception list"

containing the LCS Client identifiers, and classes of LCS Clients, the target subscriber notification setting (with/without notification) and the default treatment, which is applicable in the absence of a response from the Target MS for each LCS Client identifiers to which the MS's location may be provided. If the target subscriber notification is set as "notification with verification", each positioning request from the LCS Client shall be notified to the target MS before positioning. The treatment for location request from the LCS Client, which is not registered in the privacy exception list, shall also be specified in the privacy exception list. An empty privacy exception list shall signify an intent to withhold location from all LCS Clients. The classes that can be included are as follows.

- Universal Class: location services may be provided to all LCS Clients;

- Call/session-related Class: location services may be provided to any particular value added LCS client or particular group of value added LCS Clients – where each LCS Client or group of LCS Clients is identified by a unique international identification, e.g. E.164 or Access Point Name (APN) that currently has a temporary association with the Target MS in the form of an established voice or, data call or PS session originated by the Target MS.

- Call/session-unrelated Class – location services may be provided to a particular value added LCS Client or particular group of value added LCS Clients – where each LCS Client or group of LCS Clients is identified by a unique international identification, e.g. E.164, number or Access Point Name (APN). For each identified LCS Client or group of LCS Clients, one of the following geographical restrictions shall apply:

    a) Location request allowed from an LCS Client served by identified PLMN only;

    b) Location request allowed from an LCS Client served in the home country only;

    c) Location request allowed from any LCS Client;

PLMN Operator Class – location services may be provided by particular types of LCS clients supported within the HPLMN or VPLMN. The following types of clients are distinguished (see note):
- Clients broadcasting location related information to the MSs in a particular geographic area – e.g. on weather, traffic, hotels, restaurants;

    a) O&M client (e.g. an Operations System) in the HPLMN

    b) O&M client (e.g. an Operations System) in the VPLMN

    c) Clients recording anonymous location information (i.e. without any MS identifiers) – e.g. for traffic engineering and statistical purposes

    d) Clients enhancing or supporting any supplementary service, IN service, bearer service or teleservice subscribed to by the target MS subscriber.

    NOTE: The definitions of the various PLMN operator categories may be supplemented by more precise language in contractual agreements both between MS subscribers and their home service providers and between individual network operators with inter-PLMN roaming agreements. Such classification of the PLMN operator categories is outside the scope of this specification.

7 Provisioning and Administration

7.2.3 User Control

The user shall be able to change the following settings in the privacy exception list.
- the LCS Client and/or group of LCS Clients list
- the target subscriber notification setting (with/without notification)
- the default treatment, which is applicable in the absence of a response from the Target MS for each LCS Client identifiers

3GPP/TSG SA WG1 LCS Ad Hoc
Austin, USA, 14-15 August 2000

Document *S1- LCS000021*

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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				Current Version:	4.0.0
22.071	**CR**	**012**			

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	SA #9	for approval	**X**		strategic		*(for SMG*
list expected approval meeting # here ↑		for information			non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME **X**   UTRAN / Radio **X**   Core Network **X**
(at least one should be marked with an X)

Source:	TSG SA1	**Date:**	17 July 2000

Subject:	PS Session Support for LCS

Work item:	LCS support in the core network PS domain (Support of Location Services in UMTS Release 2000)

Category:	F	Correction		**X**	**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release				Release 96	
(only one category	B	Addition of feature				Release 97	
shall be marked	C	Functional modification of feature				Release 98	
with an X)	D	Editorial modification				Release 99	
						Release 00	**X**

Reason for change:	LCS enhancement for R00 includes applicability for PS domain and location estimation during communication. Therefore, the clause 8 and 9 need to be corrected accordingly.

Clauses affected:	8 9.2.7

Other specs Affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	This CR contains changes related to Provisioning of IP-based multimedia services and could be part of R5.

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8 Interactions with bearer and teleservices and other services

LCS shall support location of any Target MS that is idle or has established ~~a voice call~~ any CS teleservice, bearer service or PS session. ~~Location of a Target MS that has a call using any other circuit switched teleservice or any other circuit switched bearer service is for further study.~~

Location of a GPRS terminal or an MS using SMS may be supported.

Provision of location services to assist supplementary services and CAMEL is outside the scope of this specification.

The operation of location services shall be independent of other services - including Number Portability, private numbering, CAMEL, supplementary services, teleservices, and bearer services.

9 Cross phase compatibility for R99

This section details the cross phase compatibility requirements relating to the service requirements in this document.

> Note: When a change is introduced which affects the 3GPP specifications, it is said to be 'backward compatible' if existing equipment can continue to operate and perform correctly with equipment that conforms to the new implementation.

~~9.2.7 PS services~~

~~LCS shall support location services for packet switched services in future releases.~~

3GPP/TSG SA WG1 LCS Ad Hoc
Austin, USA, 14-15 August 2000

Document *S1-LCS000022*

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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22.071	**CR**	**013**		Current Version:	**4.0.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to:	**SA #9**	for approval	**X**	strategic		*(for SMG*
list expected approval meeting # here ↑		for information		non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM ☐   ME ☐   UTRAN / Radio ☐   Core Network ☐
(at least one should be marked with an X)

Source:	TSG SA1	**Date:**	17 July 2000

Subject: Clarifications to LCS on privacy and Service response

Work item: Privacy for LCS (Support of Location Services in UMTS Release 2000)

Category:	F	Correction		**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification	**X**		Release 99	
					Release 00	**X**

Reason for change:	

Clauses affected:	4.8, 5.3.2.1

Other specs Affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

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4.8   Privacy

Specific local, national, and regional privacy regulations must be complied with, and multiple layers of permissions may be required.

Location information must always be available to the network service provider.

Means shall be provided for the MS subscriber to control privacy for value added services.

Unless required by local regulatory requirements, or overridden by the target MS User, the target MS may be positioned only if allowed in the MS subscription profile. In general, for valued added location services, the target MS being positioned should be afforded the maximum possible privacy, and should not be positioned unless the positioning attempt is explicitly authorized. In the absence of specific permission to position the target MS, the target MS should not be positioned.

It may also be possible for a target MS to authorize positioning attempts after the target MS is notified of a positioning request and the target MS grants permission for positioning (see the subsequent "target subscriber notification" section of this document).

The privacy of an inanimate asset for an embedded target MS may be completely defined by the MS subscriber.

Additionally, specific privacy exceptions may exist for compliance with mandated location based services (such as for emergency services or lawful intercept) which are required by national or local regulatory requirements.
For Value Added Services, the following is applicable:
The Target MS Subscriber shall be able to restrict access to the location information (permanently or on a per attempt basis). The LCS Client access shall be restricted unless otherwise stated in the Target MS Subscription Profile. The home network shall have the capability of defining the default circumstances in which the Target MS's location is allowed to be provided - as required by various administrations and/or network requirements.
It shall be possible for location services to support conditional positioning. Under these conditions, an application that is granted conditional positioning authorization must notify and obtain positioning authorization from the user of the target MS prior to performing the positioning process. Thus the user of the target MS shall be able to accept or reject the positioning attempt.

The default treatment, which is applicable in the absence of a response from the Target MS, shall be specified in the ~~LCS~~ Target MS Subscription Profile. Thus for some location services the default treatment may be to accept the positioning request, whereas for other location services the default treatment may be to reject the positioning attempt.

However, considering that in general, users shall be afforded the maximum possible privacy, and shall not be positioned unless the target subscriber authorizes the requesting location application to perform positioning, the default condition shall normally be to deny the positioning attempt.
For PLMN operator services, the target MS subscriber may be able to restrict access to location information used to enhance or support particular types of service. The LCS client access shall be restricted unless stated otherwise in the Target MS subscription profile. The target MS user shall not be notified of any authorized location attempt.
For Emergency Services (where required by local regulatory requirements) Target MSs making an emergency call may be positioned regardless of the privacy attribute value of the subscriber associated with the Target MS (or ME) making the call.
For Lawful Interception Services (where required by local regulatory requirements), target MSs may be positioned under all circumstances required by local regulatory requirements. The target MS user shall not be notified of any location attempt.

5.3.2.2   Location Service Response

The Location Service Response provides the result of ~~an immediate~~ Location Service Request from the LCS Server to the LCS Client.
A LCS response is either '*immediate'* or '*deferred'*. The LCS Request indicates the type of response the LCS Client wishes to receive. The two types of location response are described in table 2.

Table 2: Types of LCS Response

Response	Description
Immediate	A Location Response is referred to as 'immediate ', when a response to a request for location information is answered immediately (within a set time). The response shall be single and not dependent to any event.
Deferred	A Location Response is referred to as 'deferred', when a response to a request for location information is returned after the occurrence of an event specified by the LCS client. The response can be single or periodic.

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| 22.071 | CR | 014 | | Current Version: | 4.0.0 |

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **TSG #9**
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for approval	X
for information	

Strategic	
non-strategic	

(for SMG use only)

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Proposed change affects: (at least one should be marked with an X)

(U)SIM **X**   ME **X**   UTRAN / Radio **X**   Core Network **X**

Source:	TSG SA1	**Date:**	15/8/00

Subject:	LCS: Geographic Location

Work item:	LCS UTRAN

Category:

(only one category shall be marked with an X)

F	Correction	**X**
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	
Release 00	**X**

Reason for change:	Incorporated modifications to section 4.2.1 Geographic location from modified section 9.2.2

Clauses affected:	4, 9.2

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

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4   Functional Requirements

4.2.1   Geographic Location

Provision of the geographic location of a target MS is applicable to all LCS services.

> Note: For services other than LCS the network may also determine within which Cell or Service Area the Target UE is located ("Service Area" is a UTRAN concept and it may consist of one (in R99) or more than one cell). The Service Area information or Cell ID may be used for routing of calls or for CAMEL applications.

It should be noted that the Service Area concept is different from the Localized Service Area concept used for SoLSA.

9.2.2   Location identification in UTRAN and/or ME

….
When location identification is supported by UTRAN, the following apply,

UTRAN obtains 'Area ID' and/or geographic co-ordinates with uncertainty parameters for identification of the likely location of ME, to be sent to the NAS entity side of the CN (i.e., edge node) 'Area ID' represents either a radio access cell/sector or a geographic area. 'Area ID' is coded in the same format as Cell Global Identification (CGI).

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

22.071	**CR**	**015**	Current Version:	**4.0.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **TSG #9**
list expected approval meeting # here
↑

for approval	**X**
for information	

strategic	
non-strategic	

(for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects:
(at least one should be marked with an X)

(U)SIM **X**   ME **X**   UTRAN / Radio **X**   Core Network **X**

Source: TSG SA1   **Date:**   15/8/00

Subject: Adding statement on "active" and "idle" UE in chapter 4.13

Work item: LCS UTRAN

Category:

(only one category shall be marked with an X)

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	**X**

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	
Release 00	**X**

Reason for change: This change is to section 4.13,Support for all MSs. Added the following statement from chapter 9.2: It shall be possible for the location service to be used by both "active" UE and by "idle" UE.

Clauses affected: 4, 9.2

Other specs Affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

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4.13 Support for all MSs

For value added services, and PLMN operator services, the LCS feature may be supported for all MSs.
For Emergency Services (where required by local regulatory requirements), positioning shall be supported for all MSs (i.e. including legacy MSs) where coverage is provided, and also MSs without a SIM/USIM.

[From chapter 9.2.]:
~~It shall be possible for the location service to be used by both "active" UE and by "idle" UE.~~Both "active" and "idle" UEs shall be capable of being positioned.
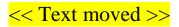
9.2.1 UTRAN support

…

~~It shall be possible for the location service to be used by both "active" UE and by "idle" UE.~~

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

22.071	**CR**	**016**	Current Version: **4.0.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   ↑ *CR number as allocated by MCC support team*

For submission to: **TSG #9**
list expected approval meeting # here
↑

for approval	**X**
for information	

strategic	
non-strategic	

(for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM **X**   ME **X**   UTRAN / Radio **X**   Core Network **X**
(at least one should be marked with an X)

Source:	TSG SA1	**Date:**	15/8/00

Subject: Radio Access Network support for LCS

Work item: LCS UTRAN

Category:

(only one category shall be marked with an X)

				Release:		
F	Correction				Phase 2	
A	Corresponds to a correction in an earlier release				Release 96	
B	Addition of feature				Release 97	
C	Functional modification of feature				Release 98	
D	Editorial modification	**X**			Release 99	
					Release 00	**X**

Reason for change:	This editorial change is to section 4.19, moved text from chapter 9.2, inserted as section 4.19: Radio Access Network support for LCS.

Clauses affected: 4, 9.2

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

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4.19 Network support for LCS

~~It shall be possible to enable the introduction of new positioning methods later, with minimum impact on systems in operation.~~

~~It shall be possible for the location service to be used by the majority of mobile terminals~~The provision of location services shall be possible ~~ME within the UTRAN area~~without ~~compromising~~significantly adversely impacting the radio transmission or the signalling capabilities of the ~~radio system~~network. ~~The location service is not an occasional "emergency only" service.~~

Chapter 9.2.1 deleted

~~9.2.1~~ ~~UTRAN support~~

~~UTRAN shall support, or at least be prepared for, important location services features in 3GPP Release 99. The measurement method(s) concluded to be feasible for UTRAN shall be selected and standardized in 3GPP Release 99. It shall be possible to enable the introduction of more positioning methods later, with minimum impact on systems in operation.~~

~~It shall be possible for the location service to be used by the majority of ME within the UTRAN area without compromising the radio transmission or the signalling capabilities of the radio system. The location service is not an occasional "emergency only" service.~~

CHANGE REQUEST

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22.071 CR **017**   Current Version: **4.0.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **TSG #9**   for approval **X**   strategic [ ]   *(for SMG use only)*
list expected approval meeting # here ↑   for information [ ]   non-strategic [ ]

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM **X**   ME **X**   UTRAN / Radio **X**   Core Network **X**
(at least one should be marked with an X)

Source: TSG SA1   **Date:** 15/8/00

Subject: LCS, Identification of a Target UE using IP addresses

Work item: LCS support in the IM CN subsystem

Category: F   Correction
          A   Corresponds to a correction in an earlier release
(only one category   B   Addition of feature
shall be marked   C   Functional modification of feature
with an X)   D   Editorial modification **X**

Release: Phase 2 [ ]
          Release 96 [ ]
          Release 97 [ ]
          Release 98 [ ]
          Release 99 [ ]
          Release 00 **X**

Reason for change: This editorial change is added section 6.1: Identification of a Target UE using IP addresses

Clauses affected: 6

Other specs affected:
Other 3G core specifications	[ ] → List of CRs:	
Other GSM core specifications	[ ] → List of CRs:	
MS test specifications	[ ] → List of CRs:	
BSS test specifications	[ ] → List of CRs:	
O&M specifications	[ ] → List of CRs:	

Other comments: This CR contains changes related to Provisioning of IP-based multimedia services and could be part of R5.

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6.1 Identification of a Target UE

The LCS Client shall be able to identify the target UE using IP addressing.

CHANGE REQUEST

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22.071	CR	018	Current Version:	4.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ ↑ *CR number as allocated by MCC support team*

For submission to:	TSG #9	for approval	X	strategic		(for SMG
list expected approval meeting # here ↑		for information		non-strategic		use only)

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM **X** ME **X** UTRAN / Radio **X** Core Network **X**
(at least one should be marked with an X)

Source:	TSG SA1	**Date:**	15/8/00

Subject: LCS: LCS Open Service Architecture (OSA) and Application Programming Interface.

Work item: LCS application interfaces (LCS-OSA)

Category:	F	Correction		**Release:**	Phase 2	
	A	Corresponds to a correction in an earlier release			Release 96	
(only one category	B	Addition of feature			Release 97	
shall be marked	C	Functional modification of feature			Release 98	
with an X)	D	Editorial modification	X		Release 99	
					Release 00	X

Reason for change:	Added section 6.7: LCS Open Service Architecture and Application Programming Interface

Clauses affected: 6

Other specs affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

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<< New added section >>

6.7 LCS Open Service Architecture and Application Programming Interface

LCS shall support t~~T~~he Open Service Architecture (OSA) ~~shall support LCS over a~~ standardized Application Programming Interface (API). The OSA and Virtual Home Environment (VHE) service aspects of LCS are described in 22.121.