3GPP TSG CN Plenary Meeting #21 **NP-030427**
17th – 19th September 2003 Frankfurt, GERMANY.

Source: TSG CN WG4

Title: Corrections on Location Services

Agenda item: 9.19

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	654		N4-030824	Rel-6	New LCS Service Types	B	6.2.0
29.002	645	1	N4-031038	Rel-6	Introduction of North American Interim Location Based Routing of Emergency Call	B	6.2.0
29.002	674		N4-031065	Rel-6	Positioning Data for UTRAN LCS	F	6.2.0

3GPP TSG-CN4 Meeting #20 **Tdoc ⌘N4-031038**
Sophia Antipolis, FRANCE, 25th to 29th August 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **645** ⌘**rev** **1** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Introduction of North American Interim Location Based Routing of Emergency Call
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	15/07/2003
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	At CN4 #19, an LS from T1P1 (N4-030586) was received that identified requirements from North America for emergency calls to be routed to the relevant PSAP based on a subscriber's actual position rather than basing this routing on the cell-Id of the cell that the subscriber was attached to. This new functionality would allow the emergency call to be handled by the PSAP that was physically closest to the subscriber making the call, rather than the PSAP closest to the cell.
Summary of change:	⌘	New functionality is introduced to allow the GMLC to replace the NA-ESRK supplied by the MSC (if the MSC allows for this to take place) by interrogating the LCZTF (a new functional element within the GMLC defined in 23.271). New parameters are introduced for Subscriber Location Report to allow the result of the interrogation to be taken back to the MSC.
Consequences if not approved:	⌘	Emergency calls may be routed to a non-optimal PSAP, resulting ultimately in delays in responses to emergencies.

Clauses affected:	⌘	7.6.11.19, 13A.3, 17.7.13			
Other specs affected:	⌘	**Y**	**N**		
		X		Other core specifications	⌘ 23.271 CR 198r3
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.6 Definition of parameters

Following is an alphabetic list of parameters used in the common MAP-services in clause 7.3:

Application context name	7.3.1	Refuse reason	7.3.1
Destination address	7.3.1	Release method	7.3.2
Destination reference	7.3.1	Responding address	7.3.1
Diagnostic information	7.3.4	Result	7.3.1
Originating address	7.3.1	Source	7.3.5
Originating reference	7.3.1	Specific information	7.3.1/7.3.2/7.3.4
Problem diagnostic	7.3.6	User reason	7.3.4
Provider reason	7.3.5		

Following is an alphabetic list of parameters contained in this clause:

Absent Subscriber Diagnostic SM	7.6.8.9	Location Information for GPRS	7.6.2.30a
Access connection status	7.6.9.3	Location update type	7.6.9.6
Access signalling information	7.6.9.5	Long Forwarded-to Number	7.6.2.22A
Additional Absent Subscriber Diagnostic SM	7.6.8.12	Long FTN Supported	7.6.2.22B
Additional LCS Capability Sets	7.6.11.25		
Additional Location Estimate	7.6.11.21	Lower Layer Compatibility	7.6.3.42
Additional number	7.6.2.46	LSA Information	7.6.3.56
Additional signal info	7.6.9.10	LSA Information Withdraw	7.6.3.58
Additional SM Delivery Outcome	7.6.8.11	MC Information	7.6.4.48
Age Indicator	7.6.3.72	MC Subscription Data	7.6.4.47
Alert Reason	7.6.8.8	Mobile Not Reachable Reason	7.6.3.51
Alert Reason Indicator	7.6.8.10	Modification request for CSI	7.6.3.81
Alerting Pattern	7.6.3.44	Modification request for SS Information	7.6.3.82
All GPRS Data	7.6.3.53	More Messages To Send	7.6.8.7
All Information Sent	7.6.1.5	MS ISDN	7.6.2.17
AN-apdu	7.6.9.1	MSC number	7.6.2.11
APN	7.6.2.42	MSIsdn-Alert	7.6.2.29
Authentication set list	7.6.7.1	Multicall Bearer Information	7.6.2.52
B-subscriber Address	7.6.2.36	Multiple Bearer Requested	7.6.2.53
B subscriber Number	7.6.2.48	Multiple Bearer Not Supported	7.6.2.54
B subscriber subaddress	7.6.2.49	MWD status	7.6.8.3
		NA-ESRK request	7.6.11.19
Basic Service Group	7.6.4.40	NbrUser	7.6.4.45
Bearer service	7.6.4.38	Network Access Mode	7.6.3.50
BSSMAP Service Handover	7.6.6.5	Network node number	7.6.2.43
BSSMAP Service Handover List	7.6.6.5A	Network resources	7.6.10.1
Call Barring Data	7.6.3.83	Network signal information	7.6.9.8
Call barring feature	7.6.4.19	New password	7.6.4.20
Call barring information	7.6.4.18	No reply condition timer	7.6.4.7
Call barring support indicator	7.6.3.92	North American Equal Accesspreferred Carrier Id	7.6.2.34
Call Direction	7.6.5.8	Number Portability Status	7.6.5.14

Call Forwarding Data	7.6.3.84
Call Info	7.6.9.9
Call reference	7.6.5.1
Call Termination Indicator	7.6.3.67
Called number	7.6.2.24
Calling number	7.6.2.25
CAMEL Subscription Info	7.6.3.78
CAMEL Subscription Info Withdraw	7.6.3.38
Cancellation Type	7.6.3.52
Category	7.6.3.1
CCBS Feature	7.6.5.8
CCBS Request State	7.6.4.49
Channel Type	7.6.5.9
Chosen Channel	7.6.5.10
Chosen Radio Resource Information	7.6.6.10B
Ciphering mode	7.6.7.7
Cksn	7.6.7.5
CLI Restriction	7.6.4.5
CM service type	7.6.9.2
Complete Data List Included	7.6.3.54
CS Allocation Retention priority	7.6.3.87
CS LCS Not Supported by UE	7.6.11.9
CUG feature	7.6.3.26
CUG index	7.6.3.25
CUG info	7.6.3.22
CUG interlock	7.6.3.24
CUG Outgoing Access indicator	7.6.3.8
CUG subscription	7.6.3.23
CUG Subscription Flag	7.6.3.37
Current location area Id	7.6.2.6
Current password	7.6.4.21
Deferred MT-LR Data	7.6.11.3
Deferred MT-LR Response Indicator	7.6.11.2
eMLPP Information	7.6.4.41
Encryption Information	7.6.6.9
Equipment status	7.6.3.2
Extensible Basic Service Group	7.6.3.5
Extensible Bearer service	7.6.3.3
Extensible Call barring feature	7.6.3.21
Extensible Call barring information	7.6.3.20
Extensible Call barring information for CSE	7.6.3.79
Extensible Forwarding feature	7.6.3.16
Extensible Forwarding info	7.6.3.15
Extensible Forwarding information for CSE	7.6.3.80
Extensible Forwarding Options	7.6.3.18
Extensible No reply condition timer	7.6.3.19
Extensible QoS-Subscribed	7.6.3.74
Extensible SS-Data	7.6.3.29
Extensible SS-Info	7.6.3.14
Extensible SS-Status	7.6.3.17
Extensible Teleservice	7.6.3.4
External Signal Information	7.6.9.4
Failure Cause	7.6.7.9
Forwarded-to number	7.6.2.22
Forwarded-to subaddress	7.6.2.23
Forwarding feature	7.6.4.16
Forwarding information	7.6.4.15
Forwarding Options	7.6.4.6
GERAN Classmark	7.6.6.4
GGSN address	7.6.2.40
GGSN number	7.6.2.41
GMSC CAMEL Subscription Info	7.6.3.34
GPRS enhancements support indicator	7.6.3.73
ODB Data	7.6.3.85
ODB General Data	7.6.3.9
ODB HPLMN Specific Data	7.6.3.10
OMC Id	7.6.2.18
Originally dialled number	7.6.2.26
Originating entity number	7.6.2.10
Override Category	7.6.4.4
P-TMSI	7.6.2.47
PDP-Address	7.6.2.45
PDP-Context identifier	7.6.3.55
PDP-Type	7.6.2.44
Positioning Data	7.6.11.11A
Pre-paging supported	7.6.5.15
Previous location area Id	7.6.2.4
Protocol Id	7.6.9.7
Provider error	7.6.1.3
PS LCS Not Supported by UE	7.6.11.10
QoS-Subscribed	7.6.3.47
Radio Resource Information	7.6.6.10
Radio Resource List	7.6.6.10A
RANAP Service Handover	7.6.6.6
Rand	7.6.7.2
LCS-Reference Number	7.6.11.23
Regional Subscription Data	7.6.3.11
Regional Subscription Response	7.6.3.12
Relocation Number List	7.6.2.19A
Requested Info	7.6.3.31
Requested Subscription Info	7.6.3.86
Roaming number	7.6.2.19
Roaming Restricted In SGSN Due To Unsupported Feature	7.6.3.49
Roaming Restriction Due To Unsupported Feature	7.6.3.13
Current Security Context	7.6.7.8
Selected RAB ID	7.6.2.56
Service centre address	7.6.2.27
Serving Cell Id	7.6.2.37
SGSN address	7.6.2.39
SGSN CAMEL Subscription Info	7.6.3.75
SGSN number	7.6.2.38
SIWF Number	7.6.2.35
SoLSA Support Indicator	7.6.3.57
SM Delivery Outcome	7.6.8.6
SM-RP-DA	7.6.8.1
SM-RP-MTI	7.6.8.16
SM-RP-OA	7.6.8.2
SM-RP-PRI	7.6.8.5
SM-RP-SMEA	7.6.8.17
SM-RP-UI	7.6.8.4
Sres	7.6.7.3
SS-Code	7.6.4.1
SS-Data	7.6.4.3
SS-Event	7.6.4.42
SS-Event-Data	7.6.4.43
SS-Info	7.6.4.24
SS-Status	7.6.4.2
Stored location area Id	7.6.2.5
Subscriber State	7.6.3.30
Subscriber Status	7.6.3.7
Super-Charger Supported in HLR	7.6.3.70
Super-Charger Supported in Serving Network Entity	7.6.3.71
Offered Camel4 CSIs	7.6.3.36D
Offered Camel4 CSIs in interrogating node	7.6.3.36E
Offered Camel4 CSIs in VMSC	7.6.3.36F

GPRS Node Indicator	7.6.8.14
GPRS Subscription Data	7.6.3.46
GPRS Subscription Data Withdraw	7.6.3.45
GPRS Support Indicator	7.6.8.15
Group Id	7.6.2.33
GSM bearer capability	7.6.3.6
gsmSCF Address	7.6.2.58
gsmSCF Initiated Call	7.6.3.c
Guidance information	7.6.4.22
Handover number	7.6.2.21
High Layer Compatibility	7.6.3.43
HLR Id	7.6.2.15
HLR number	7.6.2.13
HO-Number Not Required	7.6.6.7
IMEI	7.6.2.3
IMSI	7.6.2.1
Integrity Protection Information	7.6.6.8
Inter CUG options	7.6.3.27
Intra CUG restrictions	7.6.3.28
Invoke Id	7.6.1.1
ISDN Bearer Capability	7.6.3.41
IST Alert Timer	7.6.3.66
IST Information Withdrawn	7.6.3.68
IST Support Indicator	7.6.3.69
LCS Codeword	7.6.11.18
LCS Information	7.6.3.60
LCS Service Type Id	7.6.11.15
Kc	7.6.7.4
Linked Id	7.6.1.2
LMSI	7.6.2.16
Location Information	7.6.2.30
Offered Camel4 CSIs in VLR	7.6.3.36B
Offered Camel4 CSIs in SGSN	7.6.3.36C
Offered Camel4 Functionalities	7.6.3.36G
Supported CAMEL Phases	7.6.3.36H
Supported CAMEL Phases in VLR	7.6.3.36
Supported CAMEL Phases in SGSN	7.6.3.36A
Supported CAMEL Phases in interrogating node	7.6.3.36I
Supported GAD Shapes	7.6.11.20
Supported LCS Capability Sets	7.6.11.17
Suppress Incoming Call Barring	7.6.3.b
Suppress T-CSI	7.6.3.33
Suppress VT-CSI	7.6.3.a
Suppression of Announcement	7.6.3.32
Target cell Id	7.6.2.8
Target location area Id	7.6.2.7
Target RNC Id	7.6.2.8A
Target MSC number	7.6.2.12
Teleservice	7.6.4.39
TMSI	7.6.2.2
Trace reference	7.6.10.2
Trace type	7.6.10.3
User error	7.6.1.4
USSD Data Coding Scheme	7.6.4.36
USSD String	7.6.4.37
UU Data	7.6.5.12
UUS CF Interaction	7.6.5.13
VBS Data	7.6.3.40
VGCS Data	7.6.3.39
VLR CAMEL Subscription Info	7.6.3.35
VLR number	7.6.2.14
VPLMN address allowed	7.6.3.48
Zone Code	7.6.2.28

****** *Next Changed section* ******

7.6.11.19 NA-ESRK Request~~Void~~

This parameter allows the MSC to indicate that it requires the GMLC to allocate a NA-ESRK based on the target MS location estimate. This parameter only applies to emergency services calls in North America.

****** *Next Changed section* ******

13A.3 MAP-SUBSCRIBER-LOCATION-REPORT Service

13A.3.1 Definition

This service is used by a VMSC or SGSN to provide the location of a target MS to a GMLC when a request for location is either implicitly administered or made at some earlier time. This is a confirmed service using the primitives from table 13A.3/1.

13A.3.2 Service Primitives

Table 13A.3/1: Subscriber_Location_Report

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
LCS Event	M	M(=)		
LCS Client ID	M	M(=)		
Network Node Number	M	M(=)		
IMSI	C	C(=)		
MSISDN	C	C(=)		
NA-ESRD	C	C(=)		
NA-ESRK	C	C(=)	C	C(=)
IMEI	U	C(=)		
Location Estimate	C	C(=)		
Positioning Data	C	C(=)		
Age of Location Estimate	C	C(=)		
LMSI	U	C(=)		
GPRS Node Indicator	C	C(=)		
Additional Location Estimate	C	C(=)		
Deferred MT-LR Data	C	C(=)		
LCS-Reference Number	C	C(=)		
NA-ESRK Request	C	C(=)		
User error			C	C(=)
Provider error				O

13A.3.3 Parameter Definition and Use

All parameters are defined in clause 7.6. The use of these parameters and the requirements for their presence are specified in. 3GPP TS 23.271

LCS Event

This parameter indicates the event that triggered the Subscriber Location Report.

LCS Client ID

This parameter provides information related to the identity of the recipient LCS client.

Network Node Number

See definition in clause 7.6.2. This parameter provides the address of the sending node.

IMSI

The IMSI shall be provided if available to the VMSC or SGSN.

MSISDN

The MSISDN shall be provided if available to the VMSC or SGSN.

NA-ESRD

If the target MS has originated an emergency service call in North America, the NA-ESRD shall be provided by the VMSC if available.

NA-ESRK

If the target MS has originated an emergency service call in North America, the NA-ESRK shall be provided by the VMSC if assigned.

If the target MS has originated an emergency service call in North America and NA-ESRK Request is included in Subscriber_Location_Report-Arg, NA-ESRK may also be included in the response to the MSC, see 3GPP TS 23.271 [26a].

IMEI

Inclusion of the IMEI is optional.

Location Estimate

This parameter provides the location estimate. The absence of this parameter implies that a location estimate was not available or could not be successfully obtained. If the obtained location estimate is not encoded in one of the supported geographical shapes then this parameter shall consist of one octet, which shall be discarded by the receiving node.

Positioning Data

This parameter indicates the usage of each positioning method that was attempted to determine the location estimate either successfully or unsuccessfully. It may be included in the message only if the access network is GERAN, see 3GPP TS 23.271 [26a].

Age of Location Estimate

This parameter indicates how long ago the location estimate was obtained.

LMSI

The LMSI may be provided if assigned by the VLR.

GPRS Node Indicator

See definition in clause 7.6.8. This presence of this parameter is mandatory only if the SGSN number is sent in the Network Node Number.

Additional Location Estimate

This parameter provides the location estimate when not provided by the Location Estimate parameter..

Deferred MT-LR Data

See definition in clause 7.6.11.3.

LCS-Reference Number

This parameter shall be included if the Subscriber Location Report is the reponse to a deferred MT location request.

NA-ESRK Request

If the target MS has originated an emergency service call in North America, NA-ESRK Request may be included to indicate that the MSC is able to accept NA-ESRK in the Response message, see section 7.6.11.19.

User error

This parameter is sent by the responder when the received message contains an error, cannot be forwarded or stored for an LCS client or cannot be accepted for some other reason and if present, takes one of the following values defined in clause 7.6.1.

- System Failure;
- Data Missing;
- Unexpected Data Value;
- Resource Limitation;
- Unknown Subscriber;
- Unauthorised requesting network;
- Unknown or unreachable LCS Client.

Provider error

These are defined in clause 7.6.1.

****** *Next Changed Section* ******

17.7.13 Location service data types

```
MAP-LCS-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-LCS-DataTypes (25) version9 (9)}

DEFINITIONS
IMPLICIT TAGS
::=
BEGIN

EXPORTS
   RoutingInfoForLCS-Arg,
   RoutingInfoForLCS-Res,
   ProvideSubscriberLocation-Arg,
   ProvideSubscriberLocation-Res,
   SubscriberLocationReport-Arg,
   SubscriberLocationReport-Res,
   LocationType,
   LCSClientName,
   LCS-QoS,
   Horizontal-Accuracy,
   ResponseTime,
   Ext-GeographicalInformation,
   SupportedGADShapes,
   Add-GeographicalInformation,
   LCSRequestorID,
   LCSCodeword
;

IMPORTS
   AddressString,
   ISDN-AddressString,
   IMEI,
   IMSI,
   LMSI,
   SubscriberIdentity,
   AgeOfLocationInformation,
   LCSClientExternalID,
   LCSClientInternalID,
   LCSServiceTypeID,
   SupportedLCS-CapabilitySets
FROM MAP-CommonDataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-CommonDataTypes (18) version9 (9)}

   ExtensionContainer
FROM MAP-ExtensionDataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version9 (9)}

   USSD-DataCodingScheme,
   USSD-String
FROM MAP-SS-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-SS-DataTypes (14) version9 (9)}

   APN,
   GSN-Address
FROM MAP-MS-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-MS-DataTypes (11) version9 (9)}

   Additional-Number
FROM MAP-SM-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SM-DataTypes (16) version9 (9)}
;


```

```
RoutingInfoForLCS-Arg ::= SEQUENCE {
     mlcNumber                          [0] ISDN-AddressString,
     targetMS                           [1] SubscriberIdentity,
     extensionContainer                 [2] ExtensionContainer            OPTIONAL,
     ...}

RoutingInfoForLCS-Res ::= SEQUENCE {
     targetMS                           [0] SubscriberIdentity,
     lcsLocationInfo                    [1] LCSLocationInfo,
     extensionContainer                 [2] ExtensionContainer            OPTIONAL,
     ...,
     v-gmlc-Address                     [3]  GSN-Address                  OPTIONAL,
     h-gmlc-Address                     [4]  GSN-Address                  OPTIONAL,
     ppr-Address                        [5]  GSN-Address                  OPTIONAL }

LCSLocationInfo ::= SEQUENCE {
     networkNode-Number                 ISDN-AddressString,
     -- NetworkNode-number can be either msc-number or sgsn-number
     lmsi                               [0] LMSI                          OPTIONAL,
     extensionContainer                 [1] ExtensionContainer            OPTIONAL,
     ... ,
     gprsNodeIndicator                  [2] NULL                          OPTIONAL,
     -- gprsNodeIndicator is set only if the SGSN number is sent as the Network Node Number
     additional-Number                  [3] Additional-Number             OPTIONAL,
     supportedLCS-CapabilitySets        [4]  SupportedLCS-CapabilitySets  OPTIONAL,
     additional-LCS-CapabilitySets      [5]  SupportedLCS-CapabilitySets  OPTIONAL
     }

ProvideSubscriberLocation-Arg ::= SEQUENCE {
     locationType                       LocationType,
     mlc-Number                         ISDN-AddressString,
     lcs-ClientID                       [0] LCS-ClientID                  OPTIONAL,
     privacyOverride                    [1] NULL                          OPTIONAL,
     imsi                               [2] IMSI                          OPTIONAL,
     msisdn                             [3] ISDN-AddressString            OPTIONAL,
     lmsi                               [4] LMSI                          OPTIONAL,
     imei                               [5] IMEI                          OPTIONAL,
     lcs-Priority                       [6] LCS-Priority                  OPTIONAL,
     lcs-QoS                            [7] LCS-QoS                       OPTIONAL,
     extensionContainer                 [8] ExtensionContainer            OPTIONAL,
     ... ,
     supportedGADShapes                 [9]  SupportedGADShapes           OPTIONAL,
     lcs-ReferenceNumber                [10] LCS-ReferenceNumber          OPTIONAL,
     lcsServiceTypeID                   [11] LCSServiceTypeID             OPTIONAL,
     lcsCodeword                        [12] LCSCodeword                  OPTIONAL,
     lcs-PrivacyCheck                   [13] LCS-PrivacyCheck             OPTIONAL }

     -- one of imsi or msisdn is mandatory
     -- If a location estimate type indicates activate deferred location or cancel deferred
     -- location, a lcs-Reference number shall be included.

LocationType ::= SEQUENCE {
     locationEstimateType               [0] LocationEstimateType,
     ...,
     deferredLocationEventType          [1] DeferredLocationEventType     OPTIONAL }

LocationEstimateType ::= ENUMERATED {
     currentLocation                    (0),
     currentOrLastKnownLocation         (1),
     initialLocation                    (2),
     ...,
     activateDeferredLocation           (3),
     cancelDeferredLocation             (4) }
--   exception handling:
--   a ProvideSubscriberLocation-Arg containing an unrecognized LocationEstimateType
--   shall be rejected by the receiver with a return error cause of unexpected data value

DeferredLocationEventType ::= BIT STRING {
     msAvailable                        (0) } (SIZE (1..16))
-- exception handling
-- a ProvideSubscriberLocation-Arg containing other values than listed above in
-- DeferredLocationEventType shall be rejected by the receiver with a return error cause of
-- unexpected data value.

LCS-ClientID ::= SEQUENCE {
     lcsClientType                      [0] LCSClientType,
     lcsClientExternalID                [1] LCSClientExternalID           OPTIONAL,
     lcsClientDialedByMS                [2] AddressString                 OPTIONAL,
```

```
    lcsClientInternalID                 [3] LCSClientInternalID          OPTIONAL,
    lcsClientName                       [4] LCSClientName                OPTIONAL,
    ...,
    lcsAPN                              [5] APN                          OPTIONAL,
    lcsRequestorID                      [6] LCSRequestorID               OPTIONAL }

LCSClientType ::= ENUMERATED {
    emergencyServices                   (0),
    valueAddedServices                  (1),
    plmnOperatorServices                (2),
    lawfulInterceptServices             (3),
    ... }
    --   exception handling:
    --   unrecognized values may be ignored if the LCS client uses the privacy override
    --   otherwise, an unrecognized value shall be treated as unexpected data by a receiver
    --   a return error shall then be returned if received in a MAP invoke

LCSClientName ::= SEQUENCE {
    dataCodingScheme                    [0] USSD-DataCodingScheme,
    nameString                          [2] NameString,
    ...,
    lcs-FormatIndicator                 [3] LCS-FormatIndicator          OPTIONAL }

-- The USSD-DataCodingScheme shall indicate use of the default alphabet through the
-- following encoding
--   bit  7 6 5 4 3 2 1 0
--        0 0 0 0 1 1 1 1

NameString ::= USSD-String (SIZE (1..maxNameStringLength))

maxNameStringLength  INTEGER ::= 63

LCSRequestorID ::= SEQUENCE {
    dataCodingScheme                    [0] USSD-DataCodingScheme,
    requestorIDString                   [1] RequestorIDString,
    ...,
    lcs-FormatIndicator                 [2] LCS-FormatIndicator          OPTIONAL }

RequestorIDString ::= USSD-String (SIZE (1..maxRequestorIDStringLength))

maxRequestorIDStringLength  INTEGER ::= 127

LCS-FormatIndicator ::= ENUMERATED {
    logicalName                         (0),
    e-mailAddress                       (1),
    msisdn                              (2),
    url                                 (3),
    sipUrl                              (4),
    ... }

LCS-Priority ::= OCTET STRING (SIZE (1))
    -- 0 = highest priority
    -- 1 = normal priority
    -- all other values treated as 1

LCS-QoS ::= SEQUENCE {
    horizontal-accuracy                 [0] Horizontal-Accuracy          OPTIONAL,
    verticalCoordinateRequest           [1] NULL                         OPTIONAL,
    vertical-accuracy                   [2] Vertical-Accuracy            OPTIONAL,
    responseTime                        [3] ResponseTime                 OPTIONAL,
    extensionContainer                  [4] ExtensionContainer           OPTIONAL,
    ...}

Horizontal-Accuracy ::= OCTET STRING (SIZE (1))
    -- bit 8 = 0
    -- bits 7-1 = 7 bit Uncertainty Code defined in 3GPP TS 23.032. The horizontal location
    -- error should be less than the error indicated by the uncertainty code with 67%
    -- confidence.

Vertical-Accuracy ::= OCTET STRING (SIZE (1))
    -- bit 8 = 0
    -- bits 7-1 = 7 bit Vertical Uncertainty Code defined in 3GPP TS 23.032.
    -- The vertical location error should be less than the error indicated
    -- by the uncertainty code with 67% confidence.
```

```
ResponseTime ::= SEQUENCE {
     responseTimeCategory                ResponseTimeCategory,
     ...}
--   note: an expandable SEQUENCE simplifies later addition of a numeric response time.
```

```
ResponseTimeCategory ::= ENUMERATED {
     lowdelay  (0),
     delaytolerant  (1),
     ... }
--   exception handling:
--   an unrecognized value shall be treated the same as value 1 (delaytolerant)
```

```
SupportedGADShapes ::= BIT STRING {
     ellipsoidPoint  (0),
     ellipsoidPointWithUncertaintyCircle (1),
     ellipsoidPointWithUncertaintyEllipse (2),
     polygon (3),
     ellipsoidPointWithAltitude (4),
     ellipsoidPointWithAltitudeAndUncertaintyElipsoid (5),
     ellipsoidArc  (6) } (SIZE (7..16))
-- A node shall mark in the BIT STRING all Shapes defined in 3GPP TS 23.032 it supports.
-- exception handling: bits 7 to 15 shall be ignored if received.
```

```
LCS-ReferenceNumber::= OCTET STRING (SIZE(1))
```

```
LCSCodeword ::= SEQUENCE {
     dataCodingScheme                    [0] USSD-DataCodingScheme,
     lcsCodewordString                   [1] LCSCodewordString,
     ...}
```

```
LCSCodewordString ::= USSD-String (SIZE (1..maxLCSCodewordStringLength))
```

```
maxLCSCodewordStringLength  INTEGER ::= 127
```

```
LCS-PrivacyCheck ::= SEQUENCE {
     callSessionUnrelated                [0] PrivacyCheckRelatedAction,
     callSessionRelated                  [1] PrivacyCheckRelatedAction     OPTIONAL,
     ...}
```

```
PrivacyCheckRelatedAction ::= ENUMERATED {
     allowedWithoutNotification (0),
     allowedWithNotification (1),
     allowedIfNoResponse (2),
     restrictedIfNoResponse (3),
     notAllowed (4),
     ...}
--   exception handling:
--   a ProvideSubscriberLocation-Arg containing an unrecognized PrivacyCheckRelatedAction
--   shall be rejected by the receiver with a return error cause of unexpected data value
```

```
ProvideSubscriberLocation-Res ::= SEQUENCE {
     locationEstimate                    Ext-GeographicalInformation,
     ageOfLocationEstimate               [0] AgeOfLocationInformation      OPTIONAL,
     extensionContainer                  [1] ExtensionContainer            OPTIONAL,
     ... ,
     add-LocationEstimate                [2] Add-GeographicalInformation   OPTIONAL,
     deferredmt-lrResponseIndicator      [3] NULL                          OPTIONAL,
     positioningData                     [4] PositioningDataInformation    OPTIONAL }

--   if deferredmt-lrResponseIndicator is set, locationEstimate is ignored.

-- the add-LocationEstimate parameter shall not be sent to a node that did not indicate the
-- geographic shapes supported in the ProvideSubscriberLocation-Arg
-- The locationEstimate and the add-locationEstimate parameters shall not be sent if
-- the supportedGADShapes parameter has been received in ProvideSubscriberLocation-Arg
-- and the shape encoded in locationEstimate or add-LocationEstimate is not marked
-- as supported in supportedGADShapes. In such a case ProvideSubscriberLocation
-- shall be rejected with error FacilityNotSupported with additional indication
-- shapeOfLocationEstimateNotSupported
```

```
Ext-GeographicalInformation ::= OCTET STRING (SIZE (1..maxExt-GeographicalInformation))
    -- Refers to geographical Information defined in 3GPP TS 23.032.
    -- This is composed of 1 or more octets with an internal structure according to
    -- 3GPP TS 23.032
    -- Octet 1: Type of shape, only the following shapes in 3GPP TS 23.032 are allowed:
    --       (a) Ellipsoid point with uncertainty circle
    --       (b) Ellipsoid point with uncertainty ellipse
    --       (c) Ellipsoid point with altitude and uncertainty ellipsoid
    --       (d) Ellipsoid Arc
    --       (e) Ellipsoid Point
    -- Any other value in octet 1 shall be treated as invalid
    -- Octets 2 to 8 for case (a) – Ellipsoid point with uncertainty circle
    --       Degrees of Latitude                                    3 octets
    --       Degrees of Longitude                                   3 octets
    --       Uncertainty code                                       1 octet
    -- Octets 2 to 11 for case (b) – Ellipsoid point with uncertainty ellipse:
    --       Degrees of Latitude                                    3 octets
    --       Degrees of Longitude                                   3 octets
    --       Uncertainty semi-major axis                            1 octet
    --       Uncertainty semi-minor axis                            1 octet
    --       Angle of major axis                                    1 octet
    --       Confidence                                             1 octet
    -- Octets 2 to 14 for case (c) – Ellipsoid point with altitude and uncertainty ellipsoid
    --       Degrees of Latitude                                    3 octets
    --       Degrees of Longitude                                   3 octets
    --       Altitude                                               2 octets
    --       Uncertainty semi-major axis                            1 octet
    --       Uncertainty semi-minor axis                            1 octet
    --       Angle of major axis                                    1 octet
    --       Uncertainty altitude                                   1 octet
    --       Confidence                                             1 octet
    -- Octets 2 to 13 for case (d) – Ellipsoid Arc
    --       Degrees of Latitude                                    3 octets
    --       Degrees of Longitude                                   3 octets
    --       Inner radius                                           2 octets
    --       Uncertainty radius                                     1 octet
    --       Offset angle                                           1 octet
    --       Included angle                                         1 octet
    --       Confidence                                             1 octet
    -- Octets 2 to 7 for case (e) – Ellipsoid Point
    --       Degrees of Latitude                                    3 octets
    --       Degrees of Longitude                                   3 octets

    --
    -- An Ext-GeographicalInformation parameter comprising more than one octet and
    -- containing any other shape or an incorrect number of octets or coding according
    -- to 3GPP TS 23.032 shall be treated as invalid data by a receiver.
    --
    -- An Ext-GeographicalInformation parameter comprising one octet shall be discarded
    -- by the receiver if an Add-GeographicalInformation parameter is received
    -- in the same message.
    --
    -- An Ext-GeographicalInformation parameter comprising one octet shall be treated as
    -- invalid data by the receiver if an Add-GeographicalInformation parameter is not
    -- received in the same message.

maxExt-GeographicalInformation  INTEGER ::= 20
    -- the maximum length allows for further shapes in 3GPP TS 23.032 to be included in later
    -- versions of 3GPP TS 29.002

PositioningDataInformation ::= OCTET STRING (SIZE (2..maxPositioningDataInformation))
    -- Refers to the Positioning Data defined in 3GPP TS 49.031.
    -- This is composed of 2 or more octets with an internal structure according to
    -- 3GPP TS 49.031.

maxPositioningDataInformation INTEGER ::= 10
    --
```

```
Add-GeographicalInformation ::= OCTET STRING (SIZE (1..maxAdd-GeographicalInformation))
     -- Refers to geographical Information defined in 3GPP TS 23.032.
     -- This is composed of 1 or more octets with an internal structure according to
     -- 3GPP TS 23.032
     -- Octet 1: Type of shape, all the shapes defined in 3GPP TS 23.032 are allowed:
     -- Octets 2 to n (where n is the total number of octets necessary to encode the shape
     -- according to 3GPP TS 23.032) are used to encode the shape itself in accordance with
the
     -- encoding defined in 3GPP TS 23.032
     --
     -- An Add-GeographicalInformation parameter, whether valid or invalid, received
     -- together with a valid Ext-GeographicalInformation parameter in the same message
     -- shall be discarded.
     --
     -- An Add-GeographicalInformation parameter containing any shape not defined in
     -- 3GPP TS 23.032 or an incorrect number of octets or coding according to
     -- 3GPP TS 23.032 shall be treated as invalid data by a receiver if not received
     -- together with a valid Ext-GeographicalInformation parameter in the same message.

maxAdd-GeographicalInformation  INTEGER ::= 91
     -- the maximum length allows support for all the shapes currently defined in 3GPP TS
23.032

SubscriberLocationReport-Arg ::= SEQUENCE {
     lcs-Event                          LCS-Event,
     lcs-ClientID                       LCS-ClientID,
     lcsLocationInfo                    LCSLocationInfo,
     msisdn                             [0] ISDN-AddressString            OPTIONAL,
     imsi                               [1] IMSI                          OPTIONAL,
     imei                               [2] IMEI                          OPTIONAL,
     na-ESRD                            [3] ISDN-AddressString            OPTIONAL,
     na-ESRK                            [4] ISDN-AddressString            OPTIONAL,
     locationEstimate                   [5] Ext-GeographicalInformation   OPTIONAL,
     ageOfLocationEstimate              [6] AgeOfLocationInformation      OPTIONAL,
     extensionContainer                 [7] ExtensionContainer            OPTIONAL,
     ... ,
     add-LocationEstimate               [8] Add-GeographicalInformation   OPTIONAL,
     deferredmt-lrData                  [9] Deferredmt-lrData             OPTIONAL,
     lcs-ReferenceNumber                [10] LCS-ReferenceNumber          OPTIONAL,
     positioningData                    [11] PositioningDataInformation   OPTIONAL,
     na-ESRK-Request                    [12] NULL                         OPTIONAL }

     -- one of msisdn or imsi is mandatory
     -- a location estimate that is valid for the locationEstimate parameter should
     -- be transferred in this parameter in preference to the add-LocationEstimate.
     -- the deferredmt-lrData parameter shall be included if and only if the lcs-Event
     -- indicates a deferredmt-lrResponse.
     -- if the lcs-Event indicates a deferredmt-lrResponse then the locationEstimate
     -- and the add-locationEstimate parameters shall not be sent if the
     -- supportedGADShapes parameter had been received in ProvideSubscriberLocation-Arg
     -- and the shape encoded in locationEstimate or add-LocationEstimate was not marked
     -- as supported in supportedGADShapes. In such a case terminationCause
     -- in deferredmt-lrData shall be present with value
     -- shapeOfLocationEstimateNotSupported.
     -- If a lcs event indicates deferred mt-lr response, the lcs-Reference number shall be
     -- included.

Deferredmt-lrData ::= SEQUENCE {
     deferredLocationEventType          DeferredLocationEventType,
     terminationCause                   [0] TerminationCause              OPTIONAL,
     lcsLocationInfo                    [1] LCSLocationInfo               OPTIONAL,
     ...}
     -- lcsLocationInfo may be included only if a terminationCause is present
     -- indicating mt-lrRestart.

LCS-Event ::= ENUMERATED {
     emergencyCallOrigination  (0),
     emergencyCallRelease  (1),
     mo-lr  (2),
     ...,
     deferredmt-lrResponse  (3) }
     --   exception handling:
     --   a SubscriberLocationReport-Arg containing an unrecognized LCS-Event
     --   shall be rejected by a receiver with a return error cause of unexpected data value
```

```
TerminationCause ::= ENUMERATED {
     normal  (0),
     errorundefined  (1),
     internalTimeout  (2),
     congestion  (3),
     mt-lrRestart  (4),
     privacyViolation  (5),
     ...,
     shapeOfLocationEstimateNotSupported (6) }
-- mt-lrRestart shall be used to trigger the GMLC to restart the location procedure,
-- either because the sending node knows that the terminal has moved under coverage
-- of another MSC or SGSN (e.g. Send Identification received), or because the subscriber
-- has been deregistered due to a Cancel Location received from HLR.
--
-- exception handling
-- an unrecognized value shall be treated the same as value 1 (errorundefined)
```

```
SubscriberLocationReport-Res ::= SEQUENCE {
     extensionContainer                      ExtensionContainer          OPTIONAL,
     ...,
     na-ESRK                            [x] ISDN-AddressString          OPTIONAL }
```

```
END
```

3GPP TSG CN WG4 Meeting #20 ***N4-030824***
Sophia Antipolis, FRANCE, 25th – 29th August 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** 654 ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	New LCS Service Types
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	04/08/2003
Category:	⌘	**B**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	To align with 22.071
Summary of change:	⌘	Add new service types
Consequences if not approved:	⌘	New LCS Service Types cannot be used

Clauses affected:	⌘	17.7.8			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.7.8 Common data types

.....

```
LCSServiceTypeID ::= INTEGER (0..127)
     -- the integer values 0-63 are reserved for Standard LCS service types
     -- the integer values 64-127 are reserved for Non Standard LCS service types
```

```
-- Standard LCS Service Types
emergencyServices                           LCSServiceTypeID ::= 0
emergencyAlertServices                      LCSServiceTypeID ::= 1
personTracking                              LCSServiceTypeID ::= 2
fleetManagement                             LCSServiceTypeID ::= 3
assetManagement                             LCSServiceTypeID ::= 4
trafficCongestionReporting                  LCSServiceTypeID ::= 5
roadsideAssistance                          LCSServiceTypeID ::= 6
routingToNearestCommercialEnterprise        LCSServiceTypeID ::= 7
navigation                                  LCSServiceTypeID ::= 8
     --this service type is reserved for use in previous releases
citySightseeing                             LCSServiceTypeID ::= 9
localizedAdvertising                        LCSServiceTypeID ::= 10
mobileYellowPages                           LCSServiceTypeID ::= 11
trafficAndPublicTransportationInfo          LCSServiceTypeID ::= 12
weather                                     LCSServiceTypeID ::= 13
assetAndServiceFinding                      LCSServiceTypeID ::= 14
gaming                                      LCSServiceTypeID ::= 15
findYourFriend                              LCSServiceTypeID ::= 16
dating                                      LCSServiceTypeID ::= 17
chatting                                    LCSServiceTypeID ::= 18
routeFinding                                LCSServiceTypeID ::= 19
whereAmI                                    LCSServiceTypeID ::= 20

-- The values of LCSServiceTypeID are defined according to 3GPP TS 22.071.
```

```
-- Non Standard LCS Service Types
serv64                                          LCSServiceTypeID ::= 64
serv65                                          LCSServiceTypeID ::= 65
serv66                                          LCSServiceTypeID ::= 66
serv67                                          LCSServiceTypeID ::= 67
serv68                                          LCSServiceTypeID ::= 68
serv69                                          LCSServiceTypeID ::= 69
serv70                                          LCSServiceTypeID ::= 70
serv71                                          LCSServiceTypeID ::= 71
serv72                                          LCSServiceTypeID ::= 72
serv73                                          LCSServiceTypeID ::= 73
serv74                                          LCSServiceTypeID ::= 74
serv75                                          LCSServiceTypeID ::= 75
serv76                                          LCSServiceTypeID ::= 76
serv77                                          LCSServiceTypeID ::= 77
serv78                                          LCSServiceTypeID ::= 78
serv79                                          LCSServiceTypeID ::= 79
serv80                                          LCSServiceTypeID ::= 80
serv81                                          LCSServiceTypeID ::= 81
serv82                                          LCSServiceTypeID ::= 82
serv83                                          LCSServiceTypeID ::= 83
serv84                                          LCSServiceTypeID ::= 84
serv85                                          LCSServiceTypeID ::= 85
serv86                                          LCSServiceTypeID ::= 86
serv87                                          LCSServiceTypeID ::= 87
serv88                                          LCSServiceTypeID ::= 88
serv89                                          LCSServiceTypeID ::= 89
serv90                                          LCSServiceTypeID ::= 90
serv91                                          LCSServiceTypeID ::= 91
serv92                                          LCSServiceTypeID ::= 92
serv93                                          LCSServiceTypeID ::= 93
serv94                                          LCSServiceTypeID ::= 94
serv95                                          LCSServiceTypeID ::= 95
serv96                                          LCSServiceTypeID ::= 96
serv97                                          LCSServiceTypeID ::= 97
serv98                                          LCSServiceTypeID ::= 98
serv99                                          LCSServiceTypeID ::= 99
serv100                                         LCSServiceTypeID ::= 100
serv101                                         LCSServiceTypeID ::= 101
serv102                                         LCSServiceTypeID ::= 102
serv103                                         LCSServiceTypeID ::= 103
serv104                                         LCSServiceTypeID ::= 104
serv105                                         LCSServiceTypeID ::= 105
serv106                                         LCSServiceTypeID ::= 106
serv107                                         LCSServiceTypeID ::= 107
serv108                                         LCSServiceTypeID ::= 108
serv109                                         LCSServiceTypeID ::= 109
serv110                                         LCSServiceTypeID ::= 110
serv111                                         LCSServiceTypeID ::= 111
serv112                                         LCSServiceTypeID ::= 112
serv113                                         LCSServiceTypeID ::= 113
serv114                                         LCSServiceTypeID ::= 114
serv115                                         LCSServiceTypeID ::= 115
serv116                                         LCSServiceTypeID ::= 116
serv117                                         LCSServiceTypeID ::= 117
serv118                                         LCSServiceTypeID ::= 118
serv119                                         LCSServiceTypeID ::= 119
serv120                                         LCSServiceTypeID ::= 120
serv121                                         LCSServiceTypeID ::= 121
serv122                                         LCSServiceTypeID ::= 122
serv123                                         LCSServiceTypeID ::= 123
serv124                                         LCSServiceTypeID ::= 124
serv125                                         LCSServiceTypeID ::= 125
serv126                                         LCSServiceTypeID ::= 126
serv127                                         LCSServiceTypeID ::= 127
```

I s3GPP TSG CN WG4 Meeting #20 **N4-031065**
Sophia Antipolis, FRANCE, 25th – 29th August 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **674** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Positioning Data for UTRAN LCS		
Source:	⌘	CN4		
Work item code:	⌘	LCS2	***Date:*** ⌘	07/08/2003
Category:	⌘	**F**	***Release:*** ⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

In CR's 500r5 (Rel-5) and 568r4 (Rel-6), changes were approved to introduce the Positioning Data parameter into MAP messaging so that the parameter can be passed on to the GMLC and ultimately to provide that information to the PSAP in North America to meet FCC requirments. However, at that time only the GERAN case was addressed, following an agreement that only GERAN access would be addressed in R5, and that the equivalent changes for UTRAN access required more work and so could not be addressed in any release earlier than R6.

This change now addresses the required changes to support the transport of the matching information from the UTRAN network. The data format for UTRAN is to be set as the same as that for the GERAN Access network, and so the parameter that was introduced in 500r5 and 568r4 can be re-used (the GMLC has no need to know which form of access the location estimate is coming from).

However, because the definition of the parameter is currently in GERAN specs, it is against the working practices of 3GPP to reference this from UTRAN specifications. Therefore, to maintain a single definition of the parameter, the definition of the encoding of the parameter is moved into 29.002 so that both 49.031 and 25.413 can include a reference to a single definition and remove the possibility of duplication of definition which could result in misalignment between UTRAN and GERAN definitions.

Summary of change: ⌘ The restrictions on usage of Positioning Info as applying to just GERAN access are removed. The definition of the parameter is moved into 29.002.

Consequences if not approved: ⌘ FCC regulatory requirements for networks with UTRAN access are not met.

Clauses affected:	⌘	7.6.11.11A, 13A.2.3, 13A.3.3, 17.7.13			
Other specs affected:	⌘	**Y** / **N**		⌘	25.413 CR 586
		X /	Other core specifications		
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.6.11.11A Positioning Data

This parameter provides positioning data associated with a successful or unsuccessful location attempt for a target MS. ~~as described in 3GPP TS 49.031 [59a].~~ For GERAN this parameter contains positioning data as described in 3GPP TS 49.031 [59a]. For UTRAN this parameter contains positioning data as described in 3GPP TS 25.413 [120].

******* Next Changed Section *******

13A.2.3 Parameter Definition and Use

All parameters are defined in clause 7.6. The use of these parameters and the requirements for their presence are specified in. 3GPP TS 23.271

Location Type

This parameter identifies the type of location information requested.

MLC Number

This is the E.164 number of the requesting GMLC.

LCS Client ID

This parameter provides information related to the identity of an LCS client.

Privacy Override

This parameter indicates if MS privacy is overridden by the LCS client when the GMLC and VMSC or SGSN for an MT-LR are in the same country.

IMSI

The IMSI is provided to identify the target MS. At least one of the IMSI or MSISDN is mandatory.

MSISDN

The MSISDN is provided to identify the target MS. At least one of the IMSI or MSISDN is mandatory.

LMSI

The LMSI shall be provided if previously supplied by the HLR. This parameter is only used in the case of the MT-LR for CS domain.

LCS Priority

This parameter indicates the priority of the location request.

LCS QoS

This parameter indicates the required quality of service in terms of response time and accuracy.

IMEI

Inclusion of the IMEI is optional.

Supported GAD Shapes

This parameter indicates which of the shapes defined in 3GPP TS 23.032 [122] are supported.

LCS-Reference Number

This parameter shall be included if a deferred mt-lr procedure is performed.

LCS Codeword

See definition in clause 7.6.11.18. The requirements for its presence are specified in 3GPP TS 23.271 [26a].

LCS Service Type Id

See definition in clause 7.6.11.15. The requirements for its presence are specified in 3GPP TS 23.271 [26a].

LCS Privacy Check

See definition in clause 7.6.11. The requirements for its and its components presence are specified in 3GPP TS 23.271 [26a].

Location Estimate

This parameter provides the location estimate if this is encoded in one of the supported geographical shapes. Otherwise this parameter shall consist of one octet, which shall be discarded by the receiving node.

Positioning Data

This parameter indicates the usage of each positioning method that was attempted to determine the location estimate either successfully or unsuccessfully. ~~It may be included in the message only if the access network is GERAN, see 3GPP TS 23.271 [26a].~~

Age of Location Estimate

This parameter indicates how long ago the location estimate was obtained.

Additional Location Estimate

This parameter provides the location estimate when not provided by the Location Estimate parameter. It may be sent only if the parameter Supported GAD Shapes has been received in the Provide Subscriber Location indication and the shape to be included is supported by the GMLC.

Deferred MT-LR Response Indicator

See definition in clause 7.6.11.2.

User error

This parameter is sent by the responder when the location request has failed or cannot proceed and if present, takes one of the following values defined in clause 7.6.1.

- System Failure;
- Data Missing;
- Unexpected Data Value;
- Facility Not Supported;
- Unidentified Subscriber;
- Illegal Subscriber;
- Illegal Equipment;
- Absent Subscriber (diagnostic information may also be provided);
- Unauthorised requesting network;
- Unauthorised LCS Client with detailed reason;
- Position method failure with detailed reason.

Provider error

These are defined in clause 7.6.1.

****** *Next Changed Section* ******

13A.3.3 Parameter Definition and Use

All parameters are defined in clause 7.6. The use of these parameters and the requirements for their presence are specified in. 3GPP TS 23.271 [26a].

LCS Event

This parameter indicates the event that triggered the Subscriber Location Report.

LCS Client ID

This parameter provides information related to the identity of the recipient LCS client.

Network Node Number

See definition in clause 7.6.2. This parameter provides the address of the sending node.

IMSI

The IMSI shall be provided if available to the VMSC or SGSN.

MSISDN

The MSISDN shall be provided if available to the VMSC or SGSN.

NA-ESRD

If the target MS has originated an emergency service call in North America, the NA-ESRD shall be provided by the VMSC if available.

NA-ESRK

If the target MS has originated an emergency service call in North America, the NA-ESRK shall be provided by the VMSC if assigned.

IMEI

Inclusion of the IMEI is optional.

Location Estimate

This parameter provides the location estimate. The absence of this parameter implies that a location estimate was not available or could not be successfully obtained. If the obtained location estimate is not encoded in one of the supported geographical shapes then this parameter shall consist of one octet, which shall be discarded by the receiving node.

Positioning Data

This parameter indicates the usage of each positioning method that was attempted to determine the location estimate either successfully or unsuccessfully. ~~It may be included in the message only if the access network is GERAN, see 3GPP TS 23.271 [26a].~~

Age of Location Estimate

This parameter indicates how long ago the location estimate was obtained.

LMSI

The LMSI may be provided if assigned by the VLR.

GPRS Node Indicator

See definition in clause 7.6.8. This presence of this parameter is mandatory only if the SGSN number is sent in the Network Node Number.

Additional Location Estimate

This parameter provides the location estimate when not provided by the Location Estimate parameter..

Deferred MT-LR Data

See definition in clause 7.6.11.3.

LCS-Reference Number

This parameter shall be included if the Subscriber Location Report is the reponse to a deferred MT location request.

User error

This parameter is sent by the responder when the received message contains an error, cannot be forwarded or stored for an LCS client or cannot be accepted for some other reason and if present, takes one of the following values defined in clause 7.6.1.

- System Failure;
- Data Missing;
- Unexpected Data Value;
- Resource Limitation;
- Unknown Subscriber;
- Unauthorised requesting network;
- Unknown or unreachable LCS Client.

Provider error

These are defined in clause 7.6.1.

****** *Next Changed Section* ******

17.7.13 Location service data types

…

```
PositioningDataInformation ::= OCTET STRING (SIZE (2..maxPositioningDataInformation))
    -- Refers to the Positioning Data defined in 3GPP TS 49.031 for GERAN or 3GPP TS 25.413
    -- for UTRAN.
    -- This is composed of 2 or more octets with an internal structure according to
    -- 3GPP TS 49.031 for GERAN and 25.413 for UTRAN. Note that the internal structure
    -- of the parameter is identical for GERAN and UTRAN, but the defined code points differ
    -- for GERAN and UTRAN to allow for Radio Technology specific location methods.
```