3GPP TSG CN Plenary Meeting #26 **NP-040542**
8th – 10th December 2004 Athens, Greece.

Source: TSG CN WG4

Title: Corrections on LCS2

Agenda item: 9.18

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level N4-040	Phase	Subject	Cat	Ver_C
29.002	747		1272	Rel-6	Incorrect Implementation of CR 731	F	6.7.0
29.002	748	1	1684	Rel-6	LCS Capability Handling for UE's	F	6.7.0
29.002	753	1	1685	Rel-6	Enable NA-ESRD Provision from a GMLC for E911 Location in North America	F	6.7.0
24.080	038		1352	Rel-6	Correction of setting for timer T(LCSL)	F	6.1.0
24.030	020	1	1682	Rel-6	Correction of missing description for T(LCSN) and T(LCSL)	F	6.1.0

3GPP TSG-CN WG4 Meeting #25 ***N4-041272***

Seoul, KOREA. 15th to 19th November 2004.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.002** **CR** **747** ⌘ **rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:	⌘	Incorrect Implementation of CR 731
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	13/10/2004
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:

Ph2	*(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)*
Rel-7	*(Release 7)*

Reason for change:	⌘	CR 731 (N4-040520) approved at CN#24 has not been correctly implemented
Summary of change:	⌘	Remedy the incorrect (incomplete) implementation of CR 731 by adding the missing parts in chapter 17.7.13
Consequences if not approved:	⌘	Emergency calls may be routed to a non-optimal PSAP, resulting ultimately in delays in responses to emergencies. FCC requirements are not met.

Clauses affected:	⌘	17.7.13

		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:
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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.

17.7.13 Location service data types

```
...

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


...
```

```
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,
     slr-ArgExtensionContainer          [7] SLR-ArgExtensionContainer     OPTIONAL,
     ... ,
     add-LocationEstimate               [8] Add-GeographicalInformation   OPTIONAL,
     deferredmt-lrData                  [9] Deferredmt-lrData             OPTIONAL,
     lcs-ReferenceNumber                [10] LCS-ReferenceNumber          OPTIONAL,
     geranPositioningData               [11] PositioningDataInformation   OPTIONAL,
     utranPositioningData               [12] UtranPositioningDataInfo     OPTIONAL,
     na-ESRK-Request                    [16] NULL                         OPTIONAL,
     cellIdOrSai                        [13] CellGlobalIdOrServiceAreaIdOrLAI
     OPTIONAL,
     h-gmlc-Address                     [14] GSN-Address                  OPTIONAL,
     lcsServiceTypeID                   [15] LCSServiceTypeID             OPTIONAL,
     sai-Present                        [17] 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.
     -- sai-Present indicates that the cellIdOrSai parameter contains a Service Area
Identity.
```

3GPP TSG-CN WG4 Meeting #25 ***N4-041352***

Seoul, Korea. 15th to 19th November 2004.

CR-Form-v7.1

CHANGE REQUEST

⌘ **24.080** **CR** **038** ⌘ **rev** **-** ⌘ Current version: **6.1.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of setting for timer T(LCSL)
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	05/11/2004
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:

Ph2	*(GSM Phase 2)*
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R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	The timer T(LCSL), for LCS MO-LR operation, is set to a value between 10 and 30 seconds. This time is less than the maximum allowable position measurement reporting interval for the subsequent positioning procedure, so T(LCSL) could expire before MS has sent a position measurement report to the network, causing failure of the MO-LR operation. In order to avoid introducing a new timer for the lcs-AreaEventReport operation, the change of setting T(LCSL) applies to this operation as well.
Summary of change:	⌘	Setting of T(LCSL) changed from 10-30 seconds to 10-300 seconds.
Consequences if not approved:	⌘	MO-LR positioning operations could fail due to premature expiration of T(LCSL).

Clauses affected:	⌘	4.2

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

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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.

4.2 Operation types

[…]

```
lcs-MOLR    OPERATION ::= { -- Timer T(LCSL)= 10s to 300s
    ARGUMENT    LCS-MOLRArg
    RESULT      LCS-MOLRRes
    ERRORS      {
                systemFailure |
                unexpectedDataValue |
                dataMissing |
                facilityNotSupported |
                ss-SubscriptionViolation |
                positionMethodFailure}
    CODE        local:115 }


lcs-AreaEventRequest    OPERATION ::= { -- Timer T(LCSN)= 10s to 20s
    ARGUMENT    LCS-AreaEventRequestArg
    RETURN RESULT TRUE
    ERRORS      {
                systemFailure |
                facilityNotSupported |
                unexpectedDataValue}
    CODE        local:114 }


lcs-AreaEventReport OPERATION ::= { -- Timer T(LCSL)= 10s to 300s
    ARGUMENT    LCS-AreaEventReportArg
    RETURN RESULT TRUE
    ERRORS      {
                systemFailure |
                unexpectedDataValue |
                facilityNotSupported}
    CODE        local:113 }


lcs-AreaEventCancellation   OPERATION ::= { -- Timer T(LCSN)= 10s to 20s
    ARGUMENT    LCS-AreaEventCancellationArg
    RETURN RESULT TRUE
    ERRORS      {
                systemFailure |
                facilityNotSupported |
                unexpectedDataValue}
    CODE        local:112 }


END
```

3GPP TSG-CN WG4 Meeting #25 ***N4-041682***

Seoul, Korea. 15th to 19th November 2004. ***(N4-041357)***

CR-Form-v7.1

CHANGE REQUEST

⌘ **24.030** **CR** **020** ⌘ **rev** **1** ⌘ Current version: **6.1.0** ⌘

*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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Correction of missing description for T(LCSN) and T(LCSL)
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	19/11/2004
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:

Ph2	*(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)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Essential Correction. Handling of SS timer T(LCSN) and T(LCSL) for LCS operation are not defined, which may lead to incorrect implementations and errors in operation.
Summary of change:	⌘	Reference to T(LCSN) for Location Notification is added. Description for handling of T(LCSL) added. This makes the failure notification to the user mandatory.
Consequences if not approved:	⌘	Handling of LCS SS timer T(LCSN) and T(LCSL) remains unspecified, which may lead to incorrect interpretations and may result in an inability to reliably use LCS Supplementary Services operation.

Clauses affected:	⌘	4.1.1, 5.1.1			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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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.

4 Network initiated location services operations

4.1 Location Notification

4.1.1 Normal operation

The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the MS. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

In case of privacy verification the MS shall respond to the request by sending a RELEASE COMPLETE message containing the mobile subscriber's response in a return result component (figure 4.1).

If the timer T(LCSN) expires in the network before any response from the MS (e.g. due to no response from the user), the network shall interprete this by applying the default treatment defined in TS 23.271 (i.e. dissallow location if barred by subscription and allow location if allowed by subscription).

In the case of location notification no response is required from the MS, the MS shall terminate the dialoque by sending a RELEASE COMPLETE message containing a LocationNotification return result.

If the MS is unable to process the request received from the network, it shall return an error indication by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3GPP TS 24.080

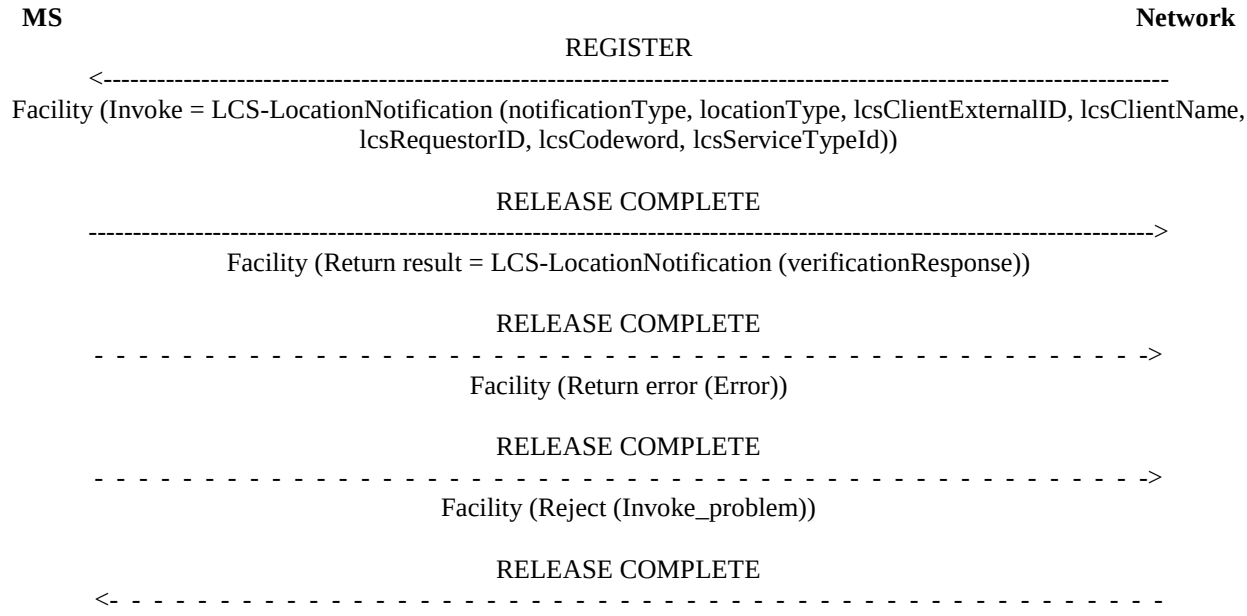

Figure 4.1: Location Notification

[Next modified section]

5 Mobile initiated location services operations

5.1 Mobile Originated Location Request (MO-LR)

5.1.1 Normal operation

The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component. SS Version Indicator value 1 or above shall be used.

The receiving network entity shall initiate the handling of location request in the network. The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

The network shall pass the result of the location procedure to the MS only if the location estimate is given in a format that the MS supports, as indicated by either the presence (and content) or the absence of the parameter supportedGADShapes, which may be sent by the MS in the LCS-MOLR operation.

The MS may terminate the dialogue by sending a RELEASE COMPLETE message in the case of single location request (see figure 5.1). The MS may also initiate another location request operation by sending a FACILITY message to the network containing a LCS-MOLR invoke component (see figure 5.2). After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

If the network is unable to successfully fulfil the request received from the MS (e.g. to provide a location estimate or location assistance information), it shall clear the transaction by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3GPP TS 24.080. If the network is unable to provide a location estimate due to lack of support in the MS for the type of shape of the location estimate, then it shall use the error Facility Not Supported.

If the network has returned a result to the MS in a FACILITY message but, after some PLMN administered time period has elapsed, has not received either a new location request operation in a FACILITY message or a RELEASE COMPLETE message from the MS, the network may clear the transaction by sending a RELEASE COMPLETE message.

During the MO-LR operation the MS shall run a timer T(LCSL). This timer is started when the operation is sent, and stopped when a response is received from the network. If this timer expires the MS shall assume that the operation has failed, and may terminate the dialogue by sending a RELEASE COMPLETE message, and shall inform the user of the failure.

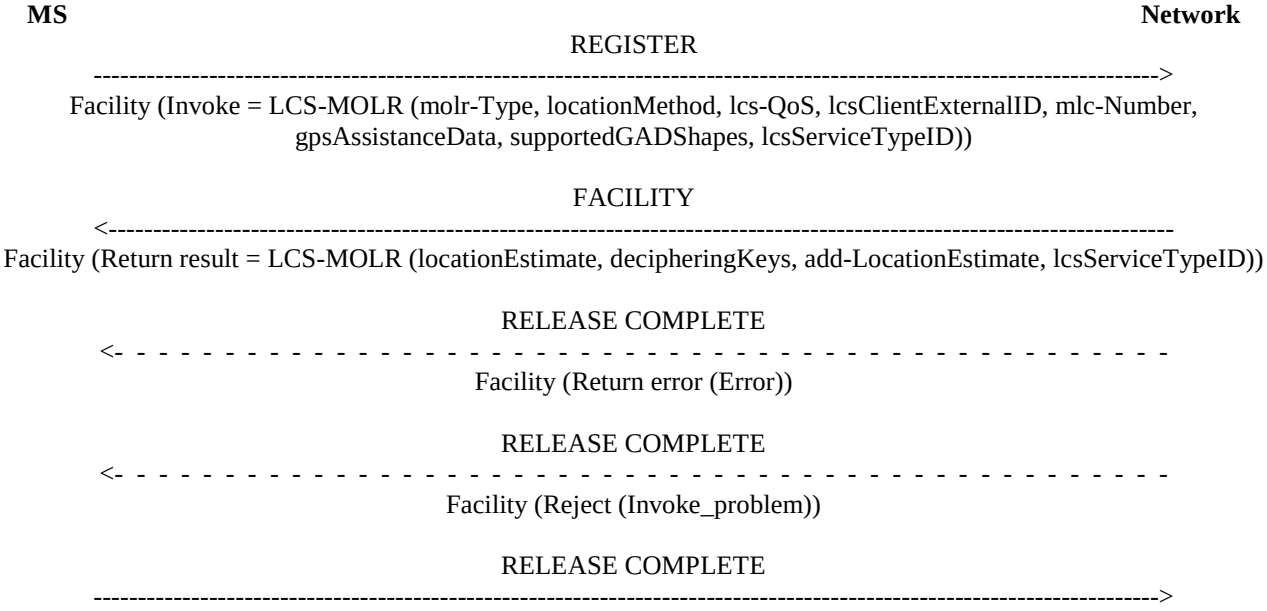

Figure 5.1: Single mobile originated location request

3GPP TSG-CN WG4 Meeting #25
Seoul, KOREA, 15th – 19th November 2004

Tdoc ⌘N4-041684

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.002** **CR** **748** ⌘ **rev** **1** ⌘ Current version: **6.7.0** ⌘

*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:	⌘	LCS Capability Handling for UE's
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	15/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	LCS support indication in the UE capability and UE classmark 3 information is only applicable for the A and Gb mode and not for Iu interfaces. An MSC or SGSN supporting only Iu interfaces should not report CS or PS LCS Not Supported by UE.
Summary of change:	⌘	VLR and SGSN should consider access technology supported as well when providing CS and PS LCS Not Supported by UE.
Consequences if not approved:	⌘	The positioning attempt may unnecessarily fail if an MSC or SGSN supporting Iu interface reports LCS Not Supported.

Clauses affected:	⌘	7.6.11.9, 7.6.11.10

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	Behaviour of a combined 2G 3G SGSN supporting both Gb and Iu-ps is FFS.

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******FIRST MODIFIED SECTION ******

7.6.11.10 PS LCS Not Supported by UE

This parameter is used by the SGSN to indicate to the HLR that the UE does not support neither UE Based nor UE Assisted positioning metheds for Packet Switched Location Services. SGSN defines the presence of this parameter on the basis of the UE capability information and the access technology supported by the SGSN.

3GPP TSG CN4#25
Seoul, Korea, 15-19 November 2004

Tdoc ⌘N4-041685

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **753** ⌘**rev** **1** ⌘ Current version: **6.7.0** ⌘

*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:	⌘	Enable NA-ESRD Provision from a GMLC for E911 Location in North America
Source:	⌘	CN4
Work item code:	⌘	LCS2
Date:	⌘	19/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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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 support location based routing for emergency calls in North America, an MSC can request an ESRK from the GMLC using the NI-LR procedure defined in 3GPP TS 23.271. If an ESRK is not provided, an MSC would use a default ESRK associated, for example, with the originating cell for the emergency call. Since signaling to a PSAP may have to use an ESRD rather than ESRK, the location based NI-LR procedure needs to be extended to support return of an ESRD from a GMLC instead of an ESRK. With this capability, an MSC does not need to provision, store, and administer NA-ESRDs or send an NA-ESRD to a GMLC. As long an MSC sends a GMLC the cell identity, the GMLC can translate the cell identity to an NA-ESRD.
Summary of change:	⌘	An NA-ESRD parameter is added to the Subscriber Location Report response as a new optional parameter. In the description of the Subscriber Location Report, it is clarified that in response to an ESRK request in a Subscriber Location Report invoke, the Subscriber Location Report response may include an NA-ESRK or NA-ESRD, but not both. Error handling is defined for the case when both parameters are returned.
Consequences if not approved:	⌘	It will not be possible to support location based routing to a PSAP with call setup signaling based on an ESRD rather than an ESRK. It will not be possible to simplify the VMSC or MSC server by removing ESRD administration.

Clauses affected:	⌘	13A.3.2, 13A.3.3, 17.7.13

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	23.271 CR 294
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	The proposed change does not affect a PLMN in which only an ESRK but not ESRD is provided by GMLC to support location based routing since the GMLC can continue to return only an ESRK or nothing in a MAP Subscriber Location Report response. In the latter case, the VMSC or MSC server is able to route to a PSAP using a default ESRK or ESRD as before.

***** FIRST MODIFIED 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(=)	C	C(=)
NA-ESRK	C	C(=)	C	C(=)
IMEI	U	C(=)		
Location Estimate	C	C(=)		
GERAN Positioning Data	C	C(=)		
UTRAN 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(=)		
Cell Id Or SAI	C	C(=)		
H-GMLC Address	C	C(=)		
LCS Service Type Id	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 [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.

If the target MS has originated an emergency service call in North America and NA-ESRK Request is included in Subscriber_Location_Report-Arg, an NA-ESRK or NA-ESRD, but not both, may also be included in the response to the MSC, see 3GPP TS 23.271 [26a].

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, an NA-ESRK or NA-ESRD, but not both, may also be included in the response to the MSC, see 3GPP TS 23.271 [26a].

IMEI

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

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.

GERAN Positioning Data

This parameter indicates the usage of each positioning method that was attempted to determine the location estimate either successfully or unsuccessfully. If Positioning Data received from the RAN contains no Positioning Methods, Positioning Data is excluded from the MAP message. It may be included in the message only if the access network is GERAN, see 3GPP TS 23.271 [26a].

UTRAN Positioning Data

This parameter indicates the usage of each positioning method that was successfullyattempted to determine the location estimate. If Position Data received from the RAN contains no Positioning Methods, UTRAN Positioning Data is excluded from the MAP message. It may be included in the message only if the access network is UTRAN, 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 response 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.

Cell Id Or SAI

For GERAN access, this parameter indicates Global Cell Identifier of the cell that the served subscriber is currently attached to. For UTRAN access, this parameter contains the Service Area Identifier for the cell that the subscriber is currently attached to. This parameter is included only for North American Emergency Calls as described in 3GPP TS 23.271 [26a].

H-GMLC address

See definition in clause 7.6.2. The parameter shall be included if the Subscriber Location Report is the response to a deferred MT location request for a UE available event or an area event.

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].

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 MODIFIED 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,
   DeferredLocationEventType,
   LCSClientName,
   LCS-QoS,
   Horizontal-Accuracy,
   ResponseTime,
   Ext-GeographicalInformation,
   SupportedGADShapes,
   Add-GeographicalInformation,
   LCSRequestorID,
   LCS-ReferenceNumber,
   LCSCodeword,
   AreaEventInfo
;

IMPORTS
   AddressString,
   ISDN-AddressString,
   IMEI,
   IMSI,
   LMSI,
   SubscriberIdentity,
   AgeOfLocationInformation,
   LCSClientExternalID,
   LCSClientInternalID,
   LCSServiceTypeID,
   CellGlobalIdOrServiceAreaIdOrLAI
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,
   SupportedLCS-CapabilitySets
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,
     additional-v-gmlc-Address          [6]  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,
     areaEventInfo                      [14] AreaEventInfo              OPTIONAL,
     h-gmlc-Address                     [15] GSN-Address                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) ,
     enteringIntoArea                     (1),
     leavingFromArea                      (2),
     beingInsideArea                      (3) } (SIZE (1..16))
-- beingInsideArea is always treated as oneTimeEvent regardless of the possible value
-- of occurrenceInfo inside areaEventInfo.
-- 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 ::= 63
```

```
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 ::= 20
```

```
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
```

```
AreaEventInfo ::= SEQUENCE {
     areaDefinition                     [0]  AreaDefinition,
     occurrenceInfo                     [1]  OccurrenceInfo               OPTIONAL,
     intervalTime                       [2]  IntervalTime                 OPTIONAL,
     ...}
```

```
AreaDefinition ::= SEQUENCE {
    areaList                        [0]  AreaList,
    ...}

AreaList ::= SEQUENCE SIZE (1..maxNumOfAreas) OF Area

maxNumOfAreas  INTEGER ::= 10

Area ::= SEQUENCE {
    areaType                        [0]  AreaType,
    areaIdentification              [1]  AreaIdentification,
    ...}

AreaType ::= ENUMERATED {
    countryCode                     (0),
    plmnId                          (1),
    locationAreaId                  (2),
    routingAreaId                   (3),
    cellGlobalId                    (4),
    ...}

AreaIdentification ::= OCTET STRING (SIZE (2..7))
    -- The internal structure is defined as follows:
    -- octet 1 bits 4321            Mobile Country Code 1st digit
    --         bits 8765            Mobile Country Code 2nd digit
    -- octet 2 bits 4321            Mobile Country Code 3rd digit
    --         bits 8765            Mobile Network Code 3rd digit if 3 digit MNC included
    --                              or filler (1111)
    -- octet 3 bits 4321            Mobile Network Code 1st digit
    --         bits 8765            Mobile Network Code 2nd digit
    -- octets 4 and 5               Location Area Code (LAC)
    -- octet 6                      Routing Area Code (RAC) for Routing Area Id
    -- octets 6 and 7               Cell Identity (CI) for Cell Global Id

OccurrenceInfo ::= ENUMERATED {
    oneTimeEvent                    (0),
    multipleTimeEvent               (1),
    ...}

IntervalTime ::= INTEGER (1..32767)
    -- minimum interval time between area reports in seconds

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,
    geranPositioningData            [4] PositioningDataInformation    OPTIONAL,
    utranPositioningData            [5] UtranPositioningDataInfo      OPTIONAL,
    cellIdOrSai                     [6] CellGlobalIdOrServiceAreaIdOrLAI   OPTIONAL,
    sai-Present                     [7] NULL                          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.
-- sai-Present indicates that the cellIdOrSai parameter contains a Service Area Identity.
```

```
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
     --

UtranPositioningDataInfo ::= OCTET STRING (SIZE (3..maxUtranPositioningDataInfo))
     -- Refers to the Position Data defined in 3GPP TS 25.413.
     -- This is composed of the positioningDataDiscriminator and the positioningDataSet
     -- included in positionData as defined in 3GPP TS 25.413.

maxUtranPositioningDataInfo INTEGER ::= 11
     --
```

```
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,
     geranPositioningData               [11] PositioningDataInformation   OPTIONAL,
     utranPositioningData               [12] UtranPositioningDataInfo     OPTIONAL,
     na-ESRK-Request                    [16] NULL                         OPTIONAL,
     cellIdOrSai                        [13] CellGlobalIdOrServiceAreaIdOrLAI  OPTIONAL,
     h-gmlc-Address                     [14] GSN-Address                  OPTIONAL,
     lcsServiceTypeID                   [15] LCSServiceTypeID             OPTIONAL,
     sai-Present                        [17] 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.
     -- sai-Present indicates that the cellIdOrSai parameter contains a Service Area Identity.
```

```
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                             [0] ISDN-AddressString            OPTIONAL,
     na-ESRD                             [1] ISDN-AddressString            OPTIONAL }

-- na-ESRK and na-ESRD are mutually exclusive
--
-- exception handling
-- receipt of both na-ESRK and na-ESRD shall be treated the same as a return error


END
```