3GPP TSG CN Plenary Meeting #22 10th – 12th December 2003 Maui, USA.

Source:	TSG CN WG4
Title:	Corrections on Location Service enhancements
Agenda item:	9.19
Document for:	APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	679		N4-031108	Rel-6	Modification of description for conditions on inclusion of Positioning Data	F	6.3.0
24.030	014	1	N4-031299	Rel-6	Deferred MT-LR Area Event	В	5.1.0
24.080	031	2	N4-031345	Rel-6	Deferred MT-LR Area Event	В	5.4.0
29.002	702	2	N4-031365	Rel-6	Deferred MT-LR Area Event	В	6.3.0
29.002	680	2	N4-031372	Rel6	Addition of CGI to LCS procedures	F	6.3.0
29.002	696	2	N4-031373	Rel6	Include v-gmlc parameter in RESTORE DATA MAP message	F	6.3.0

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Tdoc N4-031299

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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

4.2 Deferred MT-LR Area Event

4.2.1 Area Event Request

The network invokes a Deferred MT-LR Area Event procedure by sending a REGISTER message containing an LCS-Area Event invoke component to the MS.

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

<u>Facility (Invoke = LCS-AreaEventRequest (referenceNumber, r-gmlc-address, h-gmlc-address, deferredLocationEventType, areaEventInfo))</u>
RELEASE COMPLETE
Facility (Return result)
RELEASE COMPLETE
Facility (Return error (Error))
RELEASE COMPLETE
Facility (Reject (Invoke_problem))
RELEASE COMPLETE
Elever 4.0 Anno Energí Demont

4.2.2 Area Event Report

The MS invokes an Area Event Report by sending a REGISTER message to the network containing an LCS-AreaEventReport invoke component. SS Version Indicator value 1 or above shall be used.

The MS may use the Area Event Report also when cancelling the Area Event Request while monitoring the event.

The receiving network entity shall forward the Area Event Report to the H-GMLC which was included in the invoke component directly or via its associated V-GMLC.

The MS may terminate the dialogue by sending a RELEASE COMPLETE message for a single location request (see figure 4.3). The MS may also initiate another Area Event Report operation by sending a FACILITY message to the network containing an LCS-AreaEventReport invoke component (see figure 4.4). After the Area Event Report operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

If the network cannot successfully process the Area Event Report received from the MS, 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 has returned a result to the MS in a FACILITY message but, after some PLMN administered time period has elapsed, the network has not received either a new Area Event Report operation in a FACILITY message or a RELEASE COMPLETE message from the MS, the network may clear the transaction by sending a RELEASE

S	<u>REGISTER</u>
	Facility (Invoke = LCS-AreaEventReport (referenceNumber, r-gmlc-number, h-gmlc-number))
	FACILITY
	< <u>Facility (Return result)</u>
	RELEASE COMPLETE
	<u>Eacility (Return error (Error))</u>
	RELEASE COMPLETE
	<a><u>Facility (Reject (Invoke_problem))</u>
	RELEASE COMPLETE
	Figure 4.3: Single Area Event Report
<u>S</u>	Ν
	<u>REGISTER</u>
	Facility (Invoke = LCS-AreaEventReport (referenceNumber, r-gmlc-number, h-gmlc-number))
	<u>FACILITY</u>
	Facility (Return result)
	<u>RELEASE COMPLETE</u>
	Facility (Return error (Error))
	<u>RELEASE COMPLETE</u>
	Facility (Reject (Invoke_problem))
	Facility (Invoke = LCS-AreaEventReport (referenceNumber, r-gmlc-number, h-gmlc-number))
	FACILITY
	<u>Facility (Return result)</u>
	RELEASE COMPLETE
	Facility (Return error (Error))
	RELEASE COMPLETE
	Facility (Reject (Invoke_problem))

Network

4.2.3 Area Event Cancellation

The network invokes a Deferred MT-LR Area Event Cancellation procedure by sending a REGISTER message containing an LCS-Area Event Cancellation invoke component to the MS.

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

MS

REGISTER

Facility (Invoke = LCS-AreaEventCancellation (referenceNumber, h-gmlc-address))

RELEASE COMPLETE

Facility (Return result)

RELEASE COMPLETE

Facility (Return error (Error))

RELEASE COMPLETE

RELEASE COMPLETE

Figure 4.5: Area Event Cancellation

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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

Table 4.1 summarizes the operations defined for supplementary services in this specification and shows which of these operations are call related and call independent. The terms "call related" and "call independent" are defined in TS 24.010.

Operation name	Call related SS	Call independent SS
registerSS	-	+
eraseSS	-	+
activateSS	-	+
deactivateSS	-	+
interrogateSS	-	+
registerPassword	-	+
getPassword	-	+
processUnstructuredSS-Data	+	+
forwardCheckSS-Indication	-	+
processUnstructuredSS-Request	-	+
unstructuredSS-Request	-	+
unstructuredSS-Notify	-	+
forwardChargeAdvice	+	-
notifySS	+	-
forwardCUG-Info	+	-
buildMPTY	+	-
holdMPTY	+	-
retrieveMPTY	+	-
splitMPTY	+	-
explicitCT	+	-
accessRegisterCCEntry	+	-
eraseCCEntry	-	+
callDeflection	+	-
userUserService	+	-
Ics-LocationNotification	-	+
Ics-MOLR	-	+
Ics-AreaEventRequest	<u> </u>	±
Ics-AreaEventReport	<u>_</u>	±
Lcs-AreaEventCancellation	<u>_</u>	<u>+</u>
NOTE: The processUnstructuredSS-Data or	peration may be used call related	by a GSM Phase 1 MS.

Table 4.1: Relevance of supplementary service operations

The following ASN.1 module defines operations by allocating them a local value. For the involved operations the same local values as in MAP are allocated.

```
SS-Operations {
    itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
    ss-Operations (0) version& (0) v
```

```
informationObjects(5) version1(0)}
```

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4

-- The MAP operations: -- registerSS, eraseSS, activateSS, deactivateSS, interrogateSS, registerPassword, -- getPassword, processUnstructuredSS-Request, unstructuredSS-Request, unstructuredSS-Notify -- forwardCheckSS-Indication -- are imported from MAP-Operations in SS-Protocol module. -- imports SS-data types NotifySS-Arg, ForwardChargeAdviceArg, ForwardCUG-InfoArg, SS-UserData, AccessRegisterCCEntryArg, CallDeflectionArg, UserUserServiceArg, LocationNotificationArg, LocationNotificationRes, LCS-MOLRArg, LCS-MOLRRes, LCS-AreaEventRequestArg, LCS-AreaEventReportArg, LCS-AreaEventCancellationArg FROM SS-DataTypes { itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3) -- imports MAP-SS-data types RegisterCC-EntryRes FROM MAP-SS-DataTypes { itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-SS-DataTypes (14) version 89 (89)} - imports MAP-errors illegalSS-Operation, ss-ErrorStatus, ss-NotAvailable, ss-SubscriptionViolation, ss-Incompatibility, systemFailure, facilityNotSupported, callBarred, unexpectedDataValue, shortTermDenial, longTermDenial, dataMissing, forwardingViolation, forwardingFailed, positionMethodFailure FROM MAP-Errors { itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-Errors (10) version 89 (89) } - imports SS-Errors resourcesNotAvailable, maxNumberOfMPTY-ParticipantsExceeded, deflectionToServedSubscriber, invalidDeflectedToNumber, specialServiceCode, rejectedByUser, rejectedByNetwork FROM SS-Errors { itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3) ss-Errors (1) version 89 (89)} -- operations definition processUnstructuredSS-Data OPERATION ::= { -- Timer T(PUSSD)= 15s to 30s ARGUMENT SS-UserData SS-UserData RESULT -- optional ERRORS { systemFailure unexpectedDataValue} CODE local:19 } notifvSS OPERATION ::= { ARGUMENT NotifySS-Arg CODE local:16 } forwardChargeAdvice OPERATION ::= { -- Timer T(AoC)= 1s to 40s ARGUMENT ForwardChargeAdviceArg RETURN RESULT TRUE CODE local:125 } forwardCUG-Info OPERATION ::= { ARGUMENT ForwardCUG-InfoArg local:120 } CODE buildMPTY OPERATION ::= { -- Timer T(BuildMPTY)= 5s to 30s RETURN RESULT TRUE ERRORS illegalSS-Operation | ss-ErrorStatus | ss-NotAvailable ss-Incompatibility | systemFailure |

resourcesNotAvailable

5

```
maxNumberOfMPTY-ParticipantsExceeded }
    CODE
           local:124 }
holdMPTY
           OPERATION ::= { -- Timer T(HoldMPTY) = 5s to 30s
    RETURN RESULT TRUE
    ERRORS
           {
            illegalSS-Operation |
            ss-ErrorStatus
            ss-Incompatibility
            facilityNotSupported
            systemFailure}
    CODE
            local:123 }
                OPERATION ::= { -- Timer T(RetrieveMPTY)= 5s to 30s
retrieveMPTY
    RETURN RESULT TRUE
    ERRORS
            illegalSS-Operation |
            ss-ErrorStatus
            ss-Incompatibility
            facilityNotSupported
            systemFailure}
    CODE
           local:122 }
splitMPTY
           OPERATION ::= { -- Timer T(SplitMPTY)= 5s to 30s
    RETURN RESULT TRUE
    ERRORS
           {
            illegalSS-Operation |
            ss-ErrorStatus
            ss-Incompatibility
           facilityNotSupported
           systemFailure}
           local:121 }
    CODE
explicitCT OPERATION ::= { -- Timer T(ECT)= 5s to 15s
    RETURN RESULT TRUE
    ERRORS
            illegalSS-Operation |
            ss-ErrorStatus
            ss-NotAvailable
            ss-Incompatibility
            facilityNotSupported
            systemFailure
           resourcesNotAvailable |
            callBarred}
    CODE
           local:126 }
                       OPERATION ::= { -- Timer T(AccRegCCEntry)= 30s
accessRegisterCCEntry
                AccessRegisterCCEntryArg
    ARGUMENT
                RegisterCC-EntryRes
    RESULT
    ERRORS
                systemFailure
                dataMissing
                unexpectedDataValue |
                callBarred |
                illegalSS-Operation |
                ss-ErrorStatus
                ss-Incompatibility |
                shortTermDenial
                longTermDenial |
                facilityNotSupported}
    CODE
                local:119
-- the timer value is defined by T308, see also in TS 24.008 for definition of timer T308
callDeflection OPERATION ::= { -- Timer T(CD)= 30s
    ARGUMENT
                CallDeflectionArg
    RETURN RESULT TRUE
    ERRORS
                illegalSS-Operation |
                ss-ErrorStatus |
                ss-NotAvailable
                ss-Incompatibility
                facilityNotSupported |
                systemFailure
                resourcesNotAvailable
                forwardingViolation |
                callBarred |
                deflectionToServedSubscriber |
                invalidDeflectedToNumber |
                specialServiceCode |
                forwardingFailed}
```

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local:117 } CODE -- the timer value is defined by T305, see also in TS 24.008 for definition of timer T305 -- extensionContainer shall not be used with this operation OPERATION ::= { -- Timer T(UUS3)= 10s userUserService ARGUMENT UserUserServiceArg RETURN RESULT TRUE ERRORS illegalSS-Operation | ss-ErrorStatus ss-NotAvailable ss-Incompatibility facilityNotSupported | systemFailure resourcesNotAvailable rejectedByNetwork | rejectedByUser} CODE local:118 } -- The timer value for UUS3 is 10s; it is applicable only if UUS3 is activated by FACILITY -- message. If UUS service (UUS1, UUS2 or UUS3) is activated by SETUP message, no timers are -- needed. In those cases Return Result or Return Error must be received within certain call -- control messages, see 3GPP TS 24.087. -- extensionContainer shall not be used with this operation. lcs-LocationNotification OPERATION ::= { -- Timer T(LCSN)= 10s to 20s ARGUMENT LocationNotificationArg RESULT LocationNotificationRes ERRORS { systemFailure unexpectedDataValue} loca1:116 } CODE OPERATION ::= { -- Timer T(LCSL)= 10s to 30s lcs-MOLR ARGUMENT LCS-MOLRArg RESULT LCS-MOLRRes ERRORS systemFailure | unexpectedDataValue | dataMissing facilityNotSupported | ss-SubscriptionViolation | positionMethodFailure} CODE local:115 } OPERATION ::= { -- Timer T(LCSN)= 10s to 20s lcs-AreaEventRequest ARGUMENT LCS-AreaEventRequestArg RETURN RESULT TRUE ERRORS systemFailure | facilityNotSupported | unexpectedDataValue} CODE local:xxx }

 lcs-AreaEventReport OPERATION ::= { -- Timer T(LCSL) = 10s to 30s

 ARGUMENT
 LCS-AreaEventReportArg

 RETURN RESULT TRUE

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

END

4.2.1 Void

4.2.2 Operations description

For each operation this subclause provides a brief prose description.

4.2.2.1 registerSS (MS --> network)

This operation is invoked by an MS to register data related to a supplementary service in the network. When no BasicService parameter is provided, the registration applies to all provisioned and applicable basic services.

4.2.2.2 eraseSS (MS --> network)

This operation is invoked by an MS to erase data related to a supplementary service in the network. When no BasicService parameter is provided, the erasure applies to all provisioned and applicable basic services.

4.2.2.3 activateSS (MS --> network)

This operation is invoked by an MS to request the network for a supplementary service activation. When no BasicService parameter is provided, the activation applies to all provisioned and applicable basic services.

4.2.2.4 deactivateSS (MS --> network)

This operation is invoked by an MS to request the network for a supplementary service deactivation. When no BasicService parameter is provided, the deactivation applies to all provisioned and applicable basic services.

4.2.2.5 interrogateSS (MS --> network)

This operation is invoked by an MS to request the network for a supplementary service interrogation. When no BasicService parameter is provided, the interrogation applies to all provisioned and applicable basic services.

4.2.2.6 notifySS (network --> MS)

This operation is invoked by the network to forward a supplementary service notification towards a mobile subscriber.

4.2.2.7 registerPassword (MS --> network)

This operation is invoked by an MS to register a new password related to the management by the subscriber himself of subscription data in the HLR. The operation "Register password" will be successful if the subscriber can provide the old password, the new password and the new password again as results of 3 subsequent operations "Get password".

4.2.2.8 getPassword (network --> MS)

This operation is invoked by the network to request a password from the mobile subscriber. It may be used to allow the registration of a new password or the management of subscription data by the subscriber himself (e.g. modification of call barring activation status).

4.2.2.9 processUnstructuredSS-Data (MS --> network)

This operation is invoked by an MS to relay unstructured information in order to allow end to end SS operation between the MS and the network following specific rules (e.g. embedding of keypad commands). The operation is used in order to provide backward compatibility (see TS 24.090).

4.2.2.10 processUnstructuredSS-Request (MS --> network)

This operation is invoked by an MS to start an unstructured supplementary service data application in the network.

4.2.2.11 unstructuredSS-Request (network --> MS)

This operation is invoked by the network to request unstructured information from the MS in order to perform an unstructured supplementary service data application.

4.2.2.12 unstructuredSS-Notify (network --> MS)

This operation is invoked by the network to give an unstructured supplementary service notification to the mobile user.

4.2.2.13 forwardCheckSSIndication (network --> MS)

This operation is invoked by the network to indicate to the mobile subscriber that the status of supplementary services may not be correct in the network. The procedures for initiating ForwardCheckSSIndication are specified in TS 29.002.

4.2.2.14 forwardChargeAdvice (network --> MS)

This operation is invoked by the network to forward Advice of Charge information to the mobile subscriber.

4.2.2.15 buildMPTY (MS --> network)

This operation is invoked by an MS to request the network to connect calls in a multi party call.

4.2.2.16 holdMPTY (MS --> network)

This operation is invoked by an MS to put the MS-connection to a multi party call (invoked by that MS) on hold.

4.2.2.17 retrieveMPTY (MS --> network)

This operation is invoked by an MS to request retrieval of a multi party call held by that MS.

4.2.2.18 splitMPTY (MS --> network)

This operation is invoked by an MS to request a private communication with one of the remote parties in a multi party call invoked by that MS.

4.2.2.19 forwardCUG-Info (MS --> network)

This operation is used by an MS to explicitly invoke a CUG call.

4.2.2.20 explicitCT (MS --> Network)

This operation is invoked by an MS to request the network to connect the two calls of the subscriber.

4.2.2.21 accessRegisterCCEntry (MS --> Network)

This operation is invoked by an MS to activate a CCBS request in the network.

4.2.2.22 callDeflection (MS --> Network)

This operation is invoked by an MS to request the network to deflect the incoming call to a specified destination.

4.2.2.23 userUserService (MS --> Network, Network --> MS)

This operation is invoked by an MS to request the network to allow an MS to send/receive information to/from another subscriber in association with a call.

4.2.2.24 Ics-LocationNotification (network --> MS)

This operation is invoked by the network to request a verification from the mobile subscriber for the attempted location request or to notify the subscriber about authorized location request.

4.2.2.25 Ics-MOLR (MS --> Network)

This operation is invoked by an MS to request the network to start location procedure, which is used to provide the MS location estimate, location assistance data or deciphering keys for broadcast assistance data.

4.2.2.26 Ics-AreaEventRequest (network --> MS)

This operation is invoked by the network to request a mobile to start the deferred MT-LR Area Event procedure.

4.2.2.27 Ics-AreaEventReport (MS --> network)

This operation is invoked by an MS to respond that the requested Area Event has occurred.

4.2.2.28 Ics-AreaEventCancellation (network --> MS)

This operation is invoked by the network to request a mobile to cancel the deferred MT-LR Area Event procedure.

**** NEXT MODIFIED SECTION ****

4.3.1 Errors ASN.1 specification

The following ASN.1 module provides an ASN.1 specification of errors. Errors from MAP are imported in the SS-Protocol module in subclause 4.5. The module defines errors by allocating them a local value. For the involved errors the same local values as in MAP are allocated.

```
SS-Errors {
   itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
   ss-Errors (1) version 89 (89)
DEFINITIONS ::=
BEGIN
IMPORTS
ERROR FROM
Remote-Operations-Information-Objects { joint-iso-itu-t remote-operations(4)
  informationObjects(5) version1(0)};
-- The MAP errors
-- unknownSubscriber, bearerServiceNotProvisioned, teleserviceNotProvisioned,
-- illegalSS-Operation, ss-ErrorStatus, ss-NotAvailable, ss-SubscriptionViolation,
-- ss-Incompatibility, systemFailure, dataMissing, unexpectedDataValue, facilityNotSupported,
-- pw-RegistrationFailure, negativePW-Check, callBarred, numberOfPW-AttemptsViolation,
-- absentSubscriber, illegalSubscriber, illegalEquipment, ussd-Busy, unknownAlphabet,
-- forwardingViolation, forwardingFailed
-- are imported from MAP-Errors in SS-Protocol module.
-- errors definition
resourcesNotAvailable
                         ERROR ::= {
             local:127 }
    CODE
maxNumberOfMPTY-ParticipantsExceeded ERROR ::= {
             local:126 }
    CODE
invalidDeflectedToNumber ERROR ::= {
```

```
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```
CODE local:125 }
specialServiceCode ERROR ::= {
   CODE local:124 }
deflectionToServedSubscriber ERROR ::= {
   CODE local:123 }
rejectedByNetwork ERROR ::= {
   CODE local:122 }
rejectedByUser ERROR ::= {
   CODE local:121 }
```

END

**** NEXT MODIFIED SECTION ****

4.4.2 ASN.1 data types

This subclause provides an ASN.1 module defining the abstract data types in operations and errors specification. Only data types which are specific for this specification are defined. All other data types are imported from MAP together with the import of operations and errors.

```
SS-DataTypes {
     itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
     ss-DataTypes (2) version 89 (89)}
  DEFINITIONS
  IMPLICIT TAGS ::=
  BEGIN
  -- exports all data types defined in this module
  IMPORTS
  SS-Code
  FROM MAP-SS-Code {
     itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
    map-SS-Code (15) version - (+ 9) }
  -- imports MAP-SS-DataTypes
  SS-Status, USSD-DataCodingScheme, USSD-String, CCBS-Feature
  -- USSD-DataCodingScheme, USSD-String were introduced because of CNAP.
  FROM MAP-SS-DataTypes {
     itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
     map-SS-DataTypes (14) version - (+9)
GSN-Address,
  CUG-Index,
  NotificationToMSUser
  FROM MAP-MS-DataTypes {
    itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
map-MS-DataTypes (11) version 89 (89)
  maxSignalInfoLength.
  ISDN-AddressString
  ISDN-SubaddressString,
  AlertingPattern,
  LCSClientExternalID,
  AddressString,
  LCSServiceTypeID
  FROM MAP-CommonDataTypes {
     itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
     map-CommonDataTypes (18) version (+9) }
  LocationType,
 DeferredLocationEventType,
  LCSClientName,
  LCS-OoS,
  Horizontal-Accuracy,
  ResponseTime,
  Ext-GeographicalInformation,
  SupportedGADShapes,
  Add-GeographicalInformation,
  LCSRequestorID,
```

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11

```
LCS-ReferenceNumber,
LCSCodeword,
AreaEventInfo
FROM MAP-LCS-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-LCS-DataTypes (25) version &9 (&9)}
;
-- data types definition
SS-UserData ::= IA5String (SIZE (1.. maxSignalInfoLength))
NotifySS-Arg ::= SEQUENCE{
                                  [1] SS-Code OPTIONAL,
[4] SS-Status OPTIONAL,
    ss-Code
    ss-Status
    ss-Notification
                                  [5]
                                          SS-Notification OPTIONAL,
    callIsWaiting-Indicator
                                 [14] NULL OPTIONAL,
    callOnHold-Indicator
                                 [15] CallOnHold-Indicator OPTIONAL,
[16] NULL OPTIONAL,
    mpty-Indicator
    cug-Index [17] CUG-Index OPTI
clirSuppressionRejected [18] NULL OPTIONAL,
                                          CUG-Index OPTIONAL,
    . . .
                                [19] ECT-Indicator OPTIONAL,
[20] NameIndicator OPTIONAL,
[21] CCBS-Feature OPTIONAL,
[22] AlertingPattern OPTIONAL,
[23] Multicall-Indicator OPTIC
    ect-Indicator
    nameIndicator
    ccbs-Feature
    alertingPattern
    multicall-Indicator
                                          Multicall-Indicator OPTIONAL}
-- The nameIndicator is defined because of CNAP.
Multicall-Indicator ::= ENUMERATED {
        nbr-SNexceeded (0),
        nbr-Userexceeded (1)}
ForwardChargeAdviceArg ::= SEQUENCE{
    ss-Code
                                  [0]
                                           SS-Code,
    chargingInformation
                                  [1]
                                          ChargingInformation,
    ...}
SS-Notification ::= OCTET STRING (SIZE (1))
     Bit 8 7 6 5 4 00000 (Unused)
-- Bit 3 Call is forwarded indication to A-subscriber
_ _
        (calling subscriber)
-- 0
        No information content
       Outgoing call has been forwarded to C
_ _
   1
-- Bit 2 Call is forwarded indication to B-subscriber
_ _
        (forwarding subscriber)
-- 0
        No information content
-- 1
       Incoming call has been forwarded to C
           Call is forwarded indication to C-subscriber
-- Bit 1
_ _
        (forwarded-to subscriber)
-- 0 No information content
        Incoming call is a forwarded call
    7
ChargingInformation ::= SEQUENCE{
       [1] E1 OPTIONAL,
    e1
    e2 [2] E2 OPTIONAL,
    e3 [3] E3 OPTIONAL,
    e4 [4] E4 OPTIONAL,
    e5 [5] E5 OPTIONAL,
    e6 [6] E6 OPTIONAL,
        [7] E7 OPTIONAL,
    e7
    ...}
E1 ::= INTEGER (0..max10TimesUnitsPerTime)
max10TimesUnitsPerTime INTEGER ::= 8191
E2 ::= INTEGER (0..max10TimesTimeInterval)
max10TimesTimeInterval INTEGER ::= 8191
E3 ::= INTEGER (0..max100TimesScalingFactor)
max100TimesScalingFactor INTEGER := 8191
E4 ::= INTEGER (0..max10TimesIncrement)
max10TimesIncrement INTEGER ::= 8191
E5 ::= INTEGER (0..max10TimesIncrementPerDataInterval)
```

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max10TimesIncrementPerDataInterval INTEGER ::= 8191

```
E6 ::= INTEGER (0..maxNumberOfSegmentsPerDataInterval)
maxNumberOfSegmentsPerDataInterval INTEGER ::= 8191
E7 ::= INTEGER (0..max10TimesInitialTime)
max10TimesInitialTime INTEGER ::= 8191
                        ::= ENUMERATED {
CallOnHold-Indicator
             callRetrieved (0),
             callOnHold (1)}
ForwardCUG-InfoArg ::= SEQUENCE \{
    cug-Index[0]CUG-Index OPTIONAL,suppressPrefCUG[1]NULL OPTIONAL,suppressOA[2]NULL OPTIONAL,
    ...}
ECT-Indicator ::= SEQUENCE {
    ect-CallState [0] ECT-CallState,
    rdn [1] RDN OPTIONAL,
    ...}
ECT-CallState ::= ENUMERATED {
        alerting (0),
        active (1)}
    NameIndicator ::= SEQUENCE {
        callingName [0] Name OPTIONAL,
         ...}
    Name ::= CHOICE {
        namePresentationAllowed [0] NameSet,
presentationRestricted [1] NULL,
nameUnavailable [2] NULL,
        namePresentationRestricted [3] NameSet}
    NameSet ::= SEQUENCE {
         dataCodingScheme [0] USSD-DataCodingScheme,
lengthInCharacters [1] INTEGER,
nameString [2] USSD-String,
        dataCodingScheme
        nameString
        ...}
-- NameIndicator, Name and NameSet are defined because of CNAP.
-- 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|
_ _
_ _
RDN ::= CHOICE {
    presentationAllowedAddress
                                                 [0] RemotePartyNumber,
    presentationRestricted
                                                 [1] NULL,
    numberNotAvailableDueToInterworking
                                                 [2] NULL,
                                                 [3] RemotePartyNumber}
    presentationRestrictedAddress
RemotePartyNumber ::= SEQUENCE {
                          [0] ISDN-AddressString,
    partyNumber
    partyNumberSubaddress [1] ISDN-SubaddressString OPTIONAL,
    ...}
AccessRegisterCCEntryArg := SEQUENCE {
    ...}
CallDeflectionArg ::= SEQUENCE {
    deflectedToNumber [0] AddressString,
deflectedToSubaddress [1] ISDN-SubaddressString OPTIONAL,
    ...}
UserUserServiceArg ::= SEQUENCE {
    uUS-Service [0] UUS-Service,
uUS-Required [1] BOOLEAN,
    ...}
UUS-Service ::= ENUMERATED {
    uUS1 (1),
uUS2 (2),
    uUS3 (3),
    ...}
-- exception handling:
-- In case of UUS-Service with any other value, indicated as "UUS required",
```

```
-- but not understood by the MS, the call will be cleared.
```

LocationNotificationArg ::= SEQUENCE { notificationType [0] NotificationToMSUser, locationType [1] LocationType, lcsClientExternalID [2] LCSClientExternalID OPTIONAL, lcsClientName [3] LCSClientName OPTIONAL. lcsRequestorID[4]LCSRequestorIDlcsCodeword[5]LCSCodewordlcsServiceTypeID[6]LCSServiceTypeID OPTIONAL, OPTIONAL. OPTIONAL } -- exception handling: -- At reception of an unrecognised notificationType value the receiver shall reject the -- operation with a return error cause of unexpected data value. -- At reception of an unrecognised locationType value the receiver shall reject the -- operation with a return error cause of unexpected data value. LocationNotificationRes ::= SEQUENCE { verificationResponse [0] VerificationResponse OPTIONAL, ...} VerificationResponse::= ENUMERATED { permissionDenied (0), permissionGranted (1), ... } -- exception handling: -- an unrecognized value shall be treated the same as value 0 (permissionDenied) LCS-MOLRArg ::= SEQUENCE { molr-Type [0] MOLR-Type, locationMethod [1] LocationMethod OPTIONAL, lcs-OoS [2] LCS-OoS OPTIONAL, lcsClientExternalID [3] LCSClientExternalID OPTIONAL, [4] ISDN-AddressString OPTIONAL, [5] GPSAssistanceData OPTIONAL, mlc-Number mlc-Number [4] ISDN-AddressString gpsAssistanceData [5] GPSAssistanceData . . . , supportedGADShapes [6] SupportedGADShapes OPTIONAL } -- The parameter locationMethod shall be included if and only if the molr-Type is set to value -- deCipheringKeys or assistanceData. -- The parameter gpsAssistanceData shall be included if and only if the molr-Type is set to value -- assistanceData and locationMethod is set to value assistedGPS. MOLR-Type::= ENUMERATED { locationEstimate (0), assistanceData (1), deCipheringKeys (2), -- exception handling: -- an unrecognized value shall be rejected by the receiver with a return error cause of -- unexpected data value. LocationMethod::= ENUMERATED { msBasedEOTD (0), msAssistedEOTD (1), assistedGPS (2), . . . , msBasedOTDOA (3) ł -- exception handling: -- When this parameter is received with value msBasedEOTD or msAssistedEOTD and the MS -- is camped on an UMTS Service Area then the receiver shall reject it -- with a return error cause of unexpected data value. -- When this parameter is received with value msBasedOTDOA and the MS -- is camped on a GSM Cell then the receiver shall reject it with a return error cause of -- unexpected data value. -- an unrecognized value shall be rejected by the receiver with a return error cause of -- unexpected data value. GPSAssistanceData::= OCTET STRING (SIZE (1..38)) -- Octets 1 to 38 are coded in the same way as the octets 3 to 7+2n of Requested GPS Data IE -- in 3GPP TS 49.031. LCS-MOLRRes::= SEQUENCE { locationEstimate [0] Exclosed boxingKeys [1] DecipheringKeys [0] Ext-GeographicalInformation OPTIONAL, OPTIONAL, add-LocationEstimate [2] Add-GeographicalInformation OPTTONAL} -- Parameters locationEstimate or add-LocationEstimate (one but not both) -- shall be included if and only if the -- molr-Type in LocationRequestArg was set to value locationEstimate. -- Parameter add-LocationEstimate shall not be included if the supportedGADShapes

 parameter was not received The locationEstimate and th the supportedGADShapes para and the shape encoded in lo as supported in supportedGA shall be rejected with error shapeOfLocationEstimateNotS Parameter decipheringKeys similar in LocationRequestArg was similar 	in the LCS-MOLRArg. e add-locationEstimate meter has been receive cationEstimate or add- DShapes. In such a cas r FacilityNotSupported upported. nall be included if an et to value deCipherir	e parameters shall not be sent if red in LCS-MOLRArg LocationEstimate is not marked se LCS-MOLRArg d with additional indication nd only if the molr-Type ngKeys.	
DecipheringKeys::= OCTET STRIN	G (SIZE (15))		
Octets in DecipheringKeys as	re coded in the same w	way as the octets 3 to 17 of Deciphering Key	ΙE
in 3GPP TS 49.031. I.e. the	se octets contain Curr	rent Deciphering Key, Next Deciphering Key an	d
Ciphering Key Flag.			
I CO Avera E contra contra contra CE			
LCS-AreaEventRequestArg ::= SE	<u>JUENCE {</u>		
h mla addread	[0] LCS-ReferenceNum	mber,	
	[1] GSN-Address,	ODTI ONA I	
	[2] GSN-Address	DPIIONAL,	
	[3] DeterredLocation	<u>nevenciype,</u>	
	[4] AreaEventinio,		
<u>····}</u>			
the maluailableWalue in the	Deferredieget i on Event	twwn is not applicable for this procedure	
	Dererredhocacionevend	crype is not applicable for this procedure	
LCS-AreaEventReportArg ::= SE	DIENCE {		
referenceNumber	[0] LCS-ReferenceNum	mber.	
h-gmlc-address	[1] GSN-Address		
r-gmlc-address	[2] GSN-Address	OPTIONAL	
LCS-AreaEventCancellationArg	::= SEOUENCE {		
referenceNumber	[0] LCS-ReferenceNum	mber,	
h-gmlc-address	[1] GSN-Address.	<u> </u>	
···· }			
END			

**** NEXT MODIFIED SECTION ****

4.5 Operations and errors implementation

For the actual implementation of supplementary services, operations and errors have to be defined by value. The following ASN.1 module, imports operation from the ASN.1 module described in subclause 4.2 and operations and errors from MAP.

```
SS-Protocol {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Access (2) modules (3) ss-Protocol (3) version (89)
DEFINITIONS ::=
BEGIN
IMPORTS
OPERATION
FROM Remote-Operations-Information-Objects {
   joint-iso-itu-t remote-operations(4) informationObjects(5) version1(0)}
-- imports operations
-- imports operation from MAP-MobileServiceOperations
{\tt forwardCheckSS-Indication}
FROM MAP-MobileServiceOperations
   itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
  map-MobileServiceOperations (5) version 89 (89) }
-- imports operations from MAP-SupplementaryServiceOperations
registerSS, eraseSS, activateSS, deactivateSS, interrogateSS, registerPassword, getPassword,
```

registerss, erasess, activatess, deactivatess, interrogatess, registerPassword, getPassword, processUnstructuredSS-Request, unstructuredSS-Request, unstructuredSS-Notify, eraseCC-Entry FROM MAP-SupplementaryServiceOperations {

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```
itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
map-SupplementaryServiceOperations (8) version&9 ($9)}
-- imports operations from SS-Operations
processUnstructuredSS-Data, notifySS, forwardChargeAdvice, buildMPTY, holdMPTY, retrieveMPTY,
splitMPTY, explicitCT, forwardCUG-Info, accessRegisterCCEntry, callDeflection, userUserService,
lcs-LocationNotification, lcs-MOLR
FROM SS-Operations {
    itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
    ss-Operations (0) version&9 ($9)}
;
Supported-SS-Operations OPERATION ::= {forwardCheckSS-Indication | registerSS | eraseSS |
    activateSS | deactivateSS | interrogateSS | registerPassword | getPassword |
    processUnstructuredSS-Request | unstructuredSS-Request | unstructuredSS-Notify | eraseCC-Entry |
    processUnstructuredSS-Data | notifySS | forwardChargeAdvice | buildMPTY | holdMPTY |
    retrieveMPTY | splitMPTY | explicitCT | forwardCUG-Info | accessRegisterCCEntry |
    callDeflection | userUserService | lcs-AreaEventRequest |
    lcs-AreaEventReport | lcs-AreaEventCancellation}
```

END

1

3GPP TSG CN WG4 Meeting #21 Bangkok, THAILAND, 27th – 31st October 2003

N4-031108

C														
	CHANGE REQUEST													
ж	29	<mark>.002</mark> CR	<mark>679</mark>	жrev	-	ж	Current vers	^{ion:} 6.3	.0	ж				
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 X														
Title:	fe Mo	dification of o	description for	condition	s on i	nclus	ion of Positic	oning Data						
Source:	fe <mark>CN</mark>	J 4												
Work item code:	€ <mark>LC</mark>	S2					Date: ೫	10/09/20	03					
Category:	K F Use Deta be fo	one of the folk F (correction) A (correspond B (addition of C (functional D (editorial mailed explanation bund in 3GPP	owing categories ds to a correctio feature), modification of f odification) ons of the above <u>TR 21.900</u> .	s: n in an ear feature) categories	rlier re s can	lease	Release: % Use <u>one</u> of 2 (P) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-6 the following (GSM Phas (Release 19 (Release 19 (Release 19 (Release 4, (Release 5, (Release 6)	g rele se 2) 996) 997) 998) 999)))	ases:				
Reason for chang	Reason for change: % Following CN4 #20, CR674 to 29.002 was approved by e-mail. However, during that approval, some minor comments were made relating to aspects of that change that could be handled better or clarified. This CR is intended to address													

	that approval, some minor comments were made relating to aspects of that change that could be handled better or clarified. This CR is intended to address those points. The comments related mostly to the value of the discriminator used in UTRAN. In 25.413 there is a statement that says that the discriminator has a value of 0000 if positioning methods are included in Positioning Data, and that a different value of the discriminator implies that no methods are included. This would seem to imply that the Positioning Data Parameter in MAP could also carry no positioning methods and so the minimum length of the parameter defined in the ASN.1 should be 1 (as opposed to the value that is currently set as 2). However, given that the parameter is only useful to the GMLC if there is at least one positioning method included, it is better to state that for discriminator values not defined in RAN specs (be that GERAN or UTRAN) or where no positioning method information is included by the RAN, the parameter is excluded from MAP messages.
Summary of changes 9	The conditions for inclusion of Resitioning Data in MAR messages are added
Summary of change. a	The conditions for inclusion of Positioning Data in MAP messages are added
Consequences if %	Misalignment between RAN and CN specifications. Positioning Data may be
not approved:	included in messages when it contains no information.
Clauses affected: 9	7 6 11 11 0
Unduses allected: 两	7.0.11.11A
	YN
Other specs %	X Other core specifications %
affected:	X Test specifications

	X O&M Specifications	
Other comments:	 92	
Other comments.	ፙ	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

13A.2.3 Parameter Definition and Use

...

Positioning Data

This parameter indicates the usage of each positioning method that was attempted to determine the location estimate either successfully or unsuccessfully. <u>If Positioning Data received from the RAN contains no Positioning Methods</u>, <u>Positioning Data is excluded from the MAP message</u>.</u>

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

13A.3.3 Parameter Definition and Use

•••

Positioning Data

This parameter indicates the usage of each positioning method that was attempted to determine the location estimate either successfully or unsuccessfully. <u>If Positioning Data received from the RAN contains no Positioning Methods</u>, <u>Positioning Data is excluded from the MAP message</u>.</u>

3GPP TSG CN WG4 Meeting #21 Bangkok, THAILAND, 27th – 31st October 2003

N4-031372

													CR-Form-v7	
ж		29	.002	CR	680	жr	ev	2	ж	Curren	t versi	ion:	6.3.0	ж
For <u>HELP</u> 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 X														
Title:	ж	Ad	dition	of CGI	to LCS prod	cedures	;							
Source:	ж	CN	4											
Work item code:	ж	LC	S2							Da	te: ೫	29/	09/2003	
Category:	ж	F								Releas	se: Ж	Rel	-6	
Actegory: Release: Rel-6 Use one of the following categories: Use one of the following release F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900. Rel-5 (Release 5) Rel-6 (Release 6) Rel-6									eases:					
Reason for chan	ge	: #	The	current	3GPP spec	ification	is do	not a	allow	the opti	on of	send	ing the se	erving

Reason for change. ж	cell id of the originating MS. In North America this information (serving cell id) is required to be passed to the emergency centers (PSAPs) as part of the FCC E911 phase 1 mandate.
	The cell id is needed because the NA-ESRD (which is used to provide the phase1 information) is not always sent by the MSC to GMLC, and if an NA-ESRK is sent, the GMLC only has the phase2 information and not phase1 information (cell id or ESRD).
	This is an essential correction.
Summary of change: #	A new optional paramater (Cell ID) is added.
Consequences if # not approved:	Emergency Call Location Information will not be available to phase 1 PSAPs.

Clauses affected:	% 7.6.11.22, 13A.2, 13A.3, 17.7.13 Y N
Other specs affected:	X Other core specifications % 23.271 CR 226 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 <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

7.6.11.22 7.6.11.22 VoidCell Id Or SAI

For GERAN access, this parameter contains the Global Cell Identifier for the cell that the 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.

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

13A.2 MAP-PROVIDE-SUBSCRIBER-LOCATION Service

13A.2.1 Definition

This service is used by a GMLC to request the location of a target MS from the visited MSC or SGSN at any time. This is a confirmed service using the primitives from table 13A.2/1.

13A.2.2 Service Primitives

Parameter name	Request	Indication	Response	Confirm
Invoke id	М	M(=)	M(=)	M(=)
Location Type	М	M(=)		
MLC Number	М	M(=)		
LCS Client ID	М	M(=)		
Privacy Override	U	C(=)		
IMSI	С	C(=)		
MSISDN	С	C(=)		
LMSI	С	C(=)		
LCS Priority	С	C(=)		
LCS QoS	С	C(=)		
IMEI	U	C(=)		
Supported GAD Shapes	С	C(=)		
LCS-Reference Number	С	C(=)		
LCS Codeword	С	C(=)		
LCS Service Type Id	С	C(=)		
LCS Privacy Check	С	C(=)		
Location Estimate			М	M(=)
Positioning Data			С	C(=)
Age of Location Estimate			С	C(=)
Additional Location			С	C(=)
Estimate				
Deferred MT-LR			С	C(=)
Response Indicator				
Cell Id Or SAI			<u>C</u>	<u>C(=)</u>
User error			C	C(=)
Provider error				0

Table 13A.2/1: Provide_Subscriber_Location

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.

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.

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].

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.3MAP-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

Parameter name	Request	Indication	Response	Confirm		
Invoke id	Μ	M(=)	M(=)	M(=)		
LCS Event	Μ	M(=)				
LCS Client ID	Μ	M(=)				
Network Node Number	Μ	M(=)				
IMSI	С	C(=)				
MSISDN	С	C(=)				
NA-ESRD	С	C(=)				
NA-ESRK	С	C(=)	С	C(=)		
IMEI	U	C(=)				
Location Estimate	С	C(=)				
Positioning Data	С	C(=)				
Age of Location Estimate	С	C(=)				
LMSI	U	C(=)				
GPRS Node Indicator	С	C(=)				
Additional Location Estimate	С	C(=)				
Deferred MT-LR Data	С	C(=)				
LCS-Reference Number	С	C(=)				
NA-ESRK Request	С	C(=)				
Cell Id Or SAI	<u>C</u>	<u>C(=)</u>				
User error			С	C(=)		
Provider error				Ó		

Table 13A.3/1: Subscriber_Location_Report

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.

<u>IMSI</u>

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.

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.

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].

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

extensionContainer

```
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,
   GlobalCellIdOrServiceAreaIdOrLAI
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,
```

[2] ExtensionContainer

OPTIONAL,

RoutingInfoForLCS-Res ::= SEQUENCE {			
targetMS	[0]	SubscriberIdentity	
	[0]	Subscriberidencicy,	
ICSLOCATIONINIO	[1]	Leslocationinio,	00000
extensionContainer	[2]	ExtensionContainer	OPTIONAL,
· · · · /			
v-gmlc-Address	[3]	GSN-Address	OPTIONAL,
h-gmlc-Address	[4]	GSN-Address	OPTIONAL.
nnr-Address	[5]	GSN-Address	OPTIONAL }
ppi Address	[]]	GDIN Addi CDD	of Honal J
LCSLocationInfo ::= SEQUENCE {			
networkNode-Number	ISD	N-AddressString,	
NetworkNode-number can be either	msc-	number or sqsn-number	
lmsi	[0]	TWST	OPTIONAL.
extensionContainer	[1]	ExtensionContainer	OPTIONAL.
CACCIDIONCONCULICI		Excelibiolicolicatilet	or rrowin,
•••• /	[0]		00000
gprsNodeIndicator	[2]	NULL	OPTIONAL,
gprsNodeIndicator is set only if	the	SGSN number is sent as the Net	work Node Number
additional-Number	[3]	Additional-Number	OPTIONAL,
supportedLCS-CapabilitySets	[4]	SupportedLCS-CapabilitySets	OPTIONAL.
additional-LCS-CapabilitySets	[5]	SupportedLCS-CapabilitySets	OPTIONAL.
addicional-heb-capabilitysees	[]]	Supporceules-capabilitysees	OFIIONAL
}			
ProvideSubscriberLocation-Arg ::= SE	QUENC	E {	
locationType	Loc	ationType,	
mlc-Number	 T Q D	N-AddressString	
lag_ClientID	101	LCS_ClientID	ODTIONAT
	[U]		OFIIONAL,
privacyOverride	[1]	NULL	OPTIONAL,
imsi	[2]	IMSI	OPTIONAL,
msisdn	[3]	ISDN-AddressString	OPTIONAL,
lmsi	[4]	LMSI	OPTIONAL.
imei	[5]	 TMFT	
lag Driemitu	[6]	I GG Drienity	
ICS-PITOTICY	[0]	LCS-PIIOTILY	OPTIONAL,
lcs-QoS	[7]	LCS-QoS	OPTIONAL,
extensionContainer	[8]	ExtensionContainer	OPTIONAL,
· · · · /			
supportedGADShapes	[9]	SupportedGADShapes	OPTIONAL.
las-PeferenceNumber	[10	LCS-ReferenceNumber	
	[10		OPTIONAL,
IcsServiceTypeID	ί⊥⊥] LCSServiceTypeID	OPTIONAL,
lcsCodeword	[12] LCSCodeword	OPTIONAL,
lcs-PrivacyCheck	[13] LCS-PrivacyCheck	OPTIONAL }
one of imsi or msisdn is mandato	rv		
If a logation optimate type indi	astor	activate deferred location or	annal deferred
II a location estimate type indi	Cales	activate deferred incation of	cancer dererred
location, a ics-Reference number	Slia	.1 De Included.	
LocationType ::= SEQUENCE {			
locationEstimateType	[0]	LocationEstimateType,	
		11.,	
doformodi ogoti opErroptTrmo	[1]	Deferred east i on Event Turne	
deterredLocationEventType	ίΙJ	DeterredLocationEventlype	OPTIONAL }
LocationEstimateType ::= ENUMERATED {			
currentLocation	(0)	,	
currentOrLastKnownLocation	(1)		
initialLocation	(1)	'	
	(2)	1	
••••			
activateDeferredLocation	(3)	/	
cancelDeferredLocation	(4)	}	
exception handling:			
a ProvideSubscriberLocation-Arg con	itaini	ng an unrecognized LocationFet	imateType
shall be rejected by the receiver w		return error cause of unormod	ted data value
SHALL DE LEJECLEU DY LHE LECEIVEL W	- LLI C	iccum ciror cause or unexpec	ccu uuca vaiue
DeferredLocationEventType ::= BIT STRING	3 {		
msAvailable	(0)	} (SIZE (116))	
exception handling	,		
a Provide SubscriberLocation-Arg cont	inin	a other values than listed above	re in
Deferred eastionErrortErrortErrort		d by the receiver with - with	\sim 111
- DeterreulocationEventType shall be re	Jecte	ed by the receiver with a retur	n error cause or
unexpected data value.			
LCS-ClientID ::= SEQUENCE {			
lcsClientType	[]]	LCSClient Type	
	[U]	LOCAL CONTRACTOR	ODUTONAL
ICSCIIentExternalID	[]]	LCSCIIentExternalID	OPTIONAL,
lcsClientDialedByMS	[2]	AddressString	OPTIONAL,
lcsClientInternalID	[3]	LCSClientInternalID	OPTIONAL,
lcsClientName	[4]	LCSClientName	OPTIONAL,
lcsAPN	וכי	A DN	ODTIONAT
LUSAPIN	[2]		
			A A A A A A A A A A A A A A A A A A A

LCSClientType ::= ENUMERATED {	
emergencyServices	(0),
waluelddedSerwiges	(1)
	(-)
pimnoperatorServices	(Z),
lawfulInterceptServices	(3),
}	
evention handling.	
exception nanoling:	
unrecognized values may be ign	ored if the LCS client uses the privacy override
otherwise, an unrecognized val	ue shall be treated as unexpected data by a receiver
a return error shall then be re	eturned if received in a MAP invoke
LCSClientName ::= SEQUENCE {	
dataCodingScheme	[0] USSD-DataCodingScheme
datacouringScheme	
nameString	[2] NameString,
• • • /	
lcs-FormatIndicator	[3] LCS-FormatIndicator OPTIONAL }
	· · · ,
The USSD-DataCodingScheme shall indic following encoding bit 7 6 5 4 3 2 1 0 0 0 0 0 1 1 1 1	ate use of the default alphabet through the
NameString :- HSSD String (STZE /1 mor	NameStringLength))
Mameburing USSD-Sting (SIZE (1Max	
maxnamestringLength INTEGER := 63	
-	
LCSRequestorID ::= SEQUENCE {	
dataCodingScheme	[0] USSD-DataCodingScheme.
requestorIDString	[1] BoguatorIDString
requescorrestring	[1] Requestorinstring,
••••	
lcs-FormatIndicator	[2] LCS-FormatIndicator OPTIONAL }
RequestorIDString ::= USSD-String (SIZE	(1maxRequestorIDStringLength))
maxRequestorTDStringLength INTEGER ::=	63
maxiequescorrestringhengen integen	05
LCS-FormatIndicator ::= ENUMERATED {	
LCS-FormatIndicator ::= ENUMERATED { logicalName	(0).
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress	(0),
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress	<pre>(0), (1), (2)</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn	(0), (1), (2),
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url	<pre>(0), (1), (2), (3),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl	<pre>(0), (1), (2), (3), (4).</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl l	<pre>(0), (1), (2), (3), (4),</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl }</pre>	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl }	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1))	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority l = normal priority	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1	<pre>(0), (1), (2), (3), (4),</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QOS ::= SEQUENCE {	(0), (1), (2), (3), (4),
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal=accuracy	(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy untiaglogendiateDecemption	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NUL OPTIONAL,</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NULL OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL,</pre>
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime ortanaionContainar</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] FutangianContainor OPTIONAL</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer v }</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer }</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [4] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer }</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [4] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, ZZE (1))</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bit 5 7-1 = 7 bit Uncertainty Cod </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [5] ExtensionContainer OPTIONAL, [5] ExtensionContainer OPTIONAL, [6] ExtensionContainer OPTIONAL,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod accuracy responseTime</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [5] [5] [5] [5] [5] [5] [5] [5] [5] [5]</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, ZE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67%</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, EZE (1)) De defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67%</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [5] [5] [5] [5] [5] [5] [5] [5] [5] [5</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, EZE (1)) de defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% (1))</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, ZZE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% : (1))</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 -</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [5] ExtensionContainer OPTIONAL, [5] ExtensionContainer OPTIONAL, [5] ExtensionContainer OPTIONAL, [6] ExtensionCont</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, ZEE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% </pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert The vertical location error should</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, EZE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% E (1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 b</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [5] Code defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% [5] (1)) ainty Code defined in 3GPP TS 23.032. [6] be less than the error indicated confidence.</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI - bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bits 7-1 = 7 bit Vertical Vertical Vertical bits 7-1 = 7 bit Vertical </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, [5] Content of the second s</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, ZEE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% [(1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated confidence.</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert rent should be less than the er confidence. ResponseTime ::= SEQUENCE { ResponseTime ::= SEQUENCE { ResponseTime ::= SEQUENCE { ResponseTime ::= SEQUENCE {</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, ZZE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% [] (1)) ainty Code defined in 3GPP TS 23.032. [] d be less than the error indicated confidence. [] [] [] [] [] [] [] [] [] [] [] [] [] [</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert rhe vertical location error shou by the uncertainty code with 67% ResponseTime ::= SEQUENCE { responseTimeCategory vertical comments vertical comments vertical comments vertical comments vertical location error shou by the uncertainty code with 67%</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIONAL, (4), [1] NULL OPTIONAL, [2] Vertical-Accuracy OPTIONAL, [3] ResponseTime OPTIONAL, [4] ExtensionContainer OPTIONAL, [4] ExtensionContainer OPTIONAL, ZZE (1)) e defined in 3GPP TS 23.032. The horizontal location ror indicated by the uncertainty code with 67% [: (1)) ainty Code defined in 3GPP TS 23.032. Id be less than the error indicated confidence. ResponseTimeCategory,</pre>
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert The vertical location error shou by the uncertainty code with 67%</pre>	<pre>(0), (1), (2), (3), (4),</pre>

ResponseTimeCategory ::= ENUMERATED {				
lowdolaw (0)				
10wderay (0),				
delaytolerant (1),				
••• }				
exception handling:				
an unrecognized value shall be treat	ted the same as value 1 (delaytoler	ant)		
SupportedGADShapes ::= BIT STRING {				
ellipsoidPoint (0),				
ellipsoidPointWithUncertaintyCircle	(1),			
ellipsoidPointWithUncertaintyEllipse	e (2),			
polygon (3),				
ellipsoidPointWithAltitude (4),				
ellipsoidPointWithAltitudeAndUncerta	aintyElipsoid (5),			
ellipsoidArc (6) {SIZE (716)	1 1 1 1 1			
A node shall mark in the BIT STRING a	11 Shapes defined in 3GPP TS 23.032	it supports.		
exception handling: hits 7 to 15 shall	l be ignored if received	10 pappores:		
exception handling. Dies / to is shall	i be ignored if received.			
LUS-KEIEIENCENUMDER::= OCTET STRING (S	12E(1))			
LCSCodeword ::= SEQUENCE {				
dataCodingScheme	<pre>[0] USSD-DataCodingScheme,</pre>			
lcsCodewordString	LCSCodewordString,			
}				
LCSCodewordString ::= USSD-String (SIZE	(1maxLCSCodewordStringLength))			
maxLCSCodewordStringLength INTEGER ::= 2	20			
LCS-PrivacyCheck ::= SEQUENCE {				
callSessionUnrelated	[0] PrivacyCheckRelatedAction			
callSessionRelated	[1] PrivacyCheckRelatedAction			
		of Honad,		
••••				
	ſ			
PrivacycheckRelatedAction ··= ENOMERATED	1			
allowedwithoutNotification (0),				
allowedWithNotification (1),				
allowedIfNoResponse (2),				
restrictedIfNoResponse (3),				
notAllowed (4),				
}				
exception handling:				
a ProvideSubscriberLocation-Arg cont	caining an unrecognized PrivacyChec	kRelatedAction		
shall be rejected by the receiver wi	ith a return error cause of unexpec	ted data value		
ProvideSubscriberLocation-Res ::= SEQ	QUENCE {			
locationEstimate	Ext-GeographicalInformation,			
ageOfLocationEstimate	[0] AgeOfLocationInformation	OPTIONAL,		
extensionContainer	[1] ExtensionContainer	OPTIONAL.		
	(_,	,		
add-LocationEstimate	[2] Add-GeographicalInformation	OPTIONAL		
deferredmt-lrResponseIndicator	[3] NIILL	OPTIONAL.		
nogitioningData	[4] DegitioningDataInformation	OPTIONAL,		
postcioninguaca	[F] ClobalCollIdorCorrigoDectION			
Cellidorsal	[5] GIODAICEIIIdOrServiceAreaidori	SAL OPTIONAL }		
if deferredmt-lrResponseIndicator is	s set. locationEstimate is ignored			
the add-LocationEstimate parameter sh	all not be sent to a node that did	not indicate the		
geographic shapes supported in the Pro	ovideSubscriberLocation-Ara			
The locationEstimate and the add location	tionEstimate narameters shall not h	e sent if		
- the supportedCADShaped parameter has	hear received in Provide Cubersibert	ogation-Arg		
on the support cutor bar long of a long to the support of the supp				
and the shape encoded in incationEstin	nate of aug-hocalionEstimate IS Not	tion		
as supported in supportedGADSnapes. If	n such a case providesubscriberLoca			
Shall be rejected with error facility	worsupported with additional indica	C1011		
snapeornocacronescrimatenocsupported				

Ext-Ge	ographicalInformation ::= OCTET STRING (SIZE (1maxExt-Geographic	calInformation))					
	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	е					
	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 ellip	pse:					
	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 unce	ertainty 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 of	ctet and					
	containing any other shape or an incorrect number of octets or codi.	ng 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 rece	ived					
	in the same message.						
	An Ext-GeographicalInformation parameter comprising one octet shall	be treated as					
	invalid data by the receiver if an Add-GeographicalInformation para	meter 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	e included in later					
	versions of 3GPP TS 29.002						
L							
Positio	ningDataInformation ::= OCTET STRING (SIZE (2maxPositioningDataInf	ormation))					
	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 account	ording to					
	3GPP TS 49.031 for GERAN and 25.413 for UTRAN. Note that the intern	al 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.					
L							
maxPost	tioningDataInformation INTEGER ::= 10						
Add-Co	ographical Information : - OCTET STOTIC (STRE (1 movide Coordentie	alInformation \\					
Aud-Ge	Refers to geographical Information defined in 2000 TG 22 022	arring (macton))					
	This is composed of 1 or more octate with an internal structure and	ording to					
	ACDD TC 23 032	craing co					
1	5611 10 25.052						

- -- 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

+ h -								
ne encoding defined in 3GPP TS 23 032								
An Add-GeographicalInformation parameter, whether valid or invalid, received								
together with a valid Ext-Geogr	aphicalInformation 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	g to						
3GPP TS 23.032 shall be treated	as invalid data by a receiver if no	ot received						
together with a valid Ext-Geogr	aphicalInformation parameter in the	same message.						
maxAdd-GeographicalInformation INTEGER	::= 91							
the maximum length allows suppo	rt for all the shapes currently defi	ined in 3GPP TS						
23.032								
· · ·								
SubscriberLocationReport-Arg ::= SEG	QUENCE {							
lcs-Event	LCS-Event,							
lcs-ClientID	LCS-ClientID,							
	LCSLOCATIONINIO,							
imai	[U] ISDN-AddressString	OPTIONAL,						
imei		OPTIONAL,						
na-ESRD	[2] INDI [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,						
cellIdOrSai	[13] GlobalCellIdOrServiceAreaIdO	rLAI OPTIONAL }						
and of mainda an imai in mondat								
a location estimate that is wal	ory id for the locationEstimate naramete	ar should						
be transferred in this paramete	r in preference to the add-Location	Istimate						
the deferredmt-lrData parameter	shall be included if and only if the	he lcs-Event						
indicates a deferredmt-lrRespon	se.							
if the lcs-Event indicates a de	ferredmt-lrResponse then the location	onEstimate						
and the add-locationEstimate pa	and the add-locationEstimate parameters shall not be sent if the							
supportedGADShapes parameter ha	d been received in ProvideSubscriber	rLocation-Arg						
and the shape encoded in locati	onEstimate or add-LocationEstimate w	vas not marked						
as supported in supportedGADSha	pes. In such a case terminationCause	e						
in deferredmt-lrData shall be p	resent with value							
shapeOfLocationEstimateNotSuppo	rted.							
II a ICS event indicates deferr	ed mt-ir response, the ics-keierence	e number snall be						
included.								
Deferredmt-lrData ··- SEQUENCE (
deferredLocationEventType	DeferredLocationEventType							
terminationCause	[0] TerminationCause	ODTIONAL.						
lcsLocationInfo	[1] LCSLocationInfo	OPTIONAL,						
}								
lcsLocationInfo may be included	only if a terminationCause is prese	ent						
indicating mt-lrRestart.	-							
LCS-Event ::= ENUMERATED {								
<pre>emergencyCallOrigination (0),</pre>								
<pre>emergencyCallRelease (1),</pre>								
mo-lr (2),								
,								
<pre>deterredmt-lrResponse (3) }</pre>								
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),
••••
<pre>shapeOfLocationEstimateNotSupported (6) }</pre>
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 }					

END

3GPP TSG CN WG4 Meeting #21 Bangkok, THAILAND, 27th – 31st October 2003

N4-031373

CHANGE REQUEST								CR-Form-v7	
ж	29.002 CR	696	жrev	2	ж	Current versi	ion: 6.	3.0	ж
For <u>HELP</u> or	using this form, se	e bottom of this	s page or l	look a	at the	e pop-up text	over the	ж syn	nbols.
Proposed chang	e affects: UICC	apps #	ME	Rad	io A	ccess Networ	k Co	ore Ne	twork X
Title:	Include v-gmlc	parameter in R	ESTORE	DAT	A M/	AP message			
Source:	ж <mark>CN4</mark>								
Work item code:	策 LCS2					Date: ೫	30/10/2	2003	
Category:	 F Use <u>one</u> of the form <i>F</i> (correction <i>A</i> (correspond <i>B</i> (addition of <i>C</i> (functiona <i>D</i> (editorial <i>r</i> Detailed explanation be found in 3GPP) 	llowing categories n) nds to a correctio of feature), I modification of f modification) ions of the above <u>TR 21.900</u> .	s: n in an ean eature) categories	<i>lier re</i> . s can	lease	Release: % Use <u>one</u> of 1 2 (e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-6 the followin (GSM Pha (Release (Release (Release (Release (Release (Release	ng rele ase 2) 1996) 1997) 1998) 1999) 4) 5)	ases:

Reason for change: 3	MSC/VLR should be possible to inform HLR about the V-GMLC IP address also in RESTORE DATA message apart from LOCATION UPDATE.
Summary of change: 3	The information regarding the V-GMLC address that is transferred from VLR to HLR via the MAP operation UPDATE LOCATION shall be also transferred via the RESTORE DATA operation.
Consequences if solution of approved:	HLR will not be updated with the correct data until the next LOCATION UPDATE is received, which may take some time.
Clauses affected:	ж 8.10.3.2, 8.10.3.3, 17.7
Other specs	Y N X Other core specifications % X Test specifications % X O&M Specifications %
Other comments:	fe

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.10.3 MAP_RESTORE_DATA service

8.10.3.1 Definition

This service is invoked by the VLR on receipt of a MAP_PROVIDE_ROAMING_NUMBER indication for an unknown IMSI, or for a known IMSI with the indicator "Confirmed by HLR" set to "Not confirmed". The service is used to update the LMSI in the HLR, if provided, and to request the HLR to send all data to the VLR that are to be stored in the subscriber's IMSI record.

The MAP_RESTORE_DATA service is a confirmed service using the service primitives defined in table 8.10/3.

8.10.3.2 Service primitives

Parameter name	Request	Indication	Response	Confirm
Invoke Id	М	M(=)	M(=)	M(=)
IMSI	М	M(=)		
LMSI	U	C(=)		
Supported CAMEL phases	С	C(=)		
SoLSA Support Indicator	С	C(=)		
IST Support Indicator	С	C(=)		
Super-Charger Supported in Serving Network Entity	С	C(=)		
Long FTN Supported	С	C(=)		
Supported LCS Capability Sets	С	C(=)		
HLR number			e	C(=)
Offered CAMEL 4 CSIs	С	C(=)		
V-GMLC Address	<u>C</u>	<u>C(=)</u>		
HLR number			<u>C</u>	<u>C(=)</u>
MS Not Reachable Flag			С	C(=)
User error			С	C(=)
Provider error				0

Table 8.10/3: MAP_RESTORE_DATA

8.10.3.3 Parameter definitions and use

Invoke Id

See definition in clause 7.6.1.

IMSI

See definition in clause 7.6.2.

LMSI

See definition in clause 7.6.2. It is an operator option to provide the LMSI from the VLR; it is mandatory for the HLR to support the LMSI handling procedures.

Supported CAMEL Phases

This parameter indicates which phases of CAMEL are supported. Must be present if a CAMEL phase different from phase 1 is supported. Otherwise may be absent.

SoLSA Support Indicator

This parameter is used by the VLR to indicate to the HLR in the Restore Data indication that SoLSA is supported. If this parameter is not included in the Restore Data indication then the HLR shall not perform any specific error handling.

This SoLSA Support Indicator shall be stored by the HLR per VLR where there are Subscribers roaming. If a Subscriber is marked as only allowed to roam in Subscribed LSAs while roaming in a VLR and no SoLSA Support indicator is stored for that VLR, the location status of that Subscriber shall be set to Restricted.

IST Support Indicator

This parameter is used to indicate to the HLR that the VMSC supports basic IST functionality, that is, the VMSC is able to terminate the Subscriber Call Activity that originated the IST Alert when it receives the IST alert response indicating that the call(s) shall be terminated. If this parameter is not included in the Restore Data indication and the Subscriber is marked as an IST Subscriber, then the HLR may limit the service for the subscriber (by inducing an Operator Determined barring of Outgoing calls), or allow service assuming the associated risk of not having the basic IST mechanism available.

This parameter can also indicate that the VMSC supports the IST Command service, including the ability to terminate all calls being carried for the identified subscriber by using the IMSI as a key. If this additional capability is not included in the Restore Data indication and the HLR supports the IST Command capability, then the HLR may limit the service for the subscriber (by inducing an Operator Determined barring of Outgoing calls), or allow service assuming the associated risk of not having the IST Command mechanism available.

Long FTN Supported

This parameter indicates that the VLR supports Long Forwarded-to Numbers.

Super-Charger Supported in Serving Network Entity

This parameter is used by the VLR to indicate to the HLR that the VLR supports the Super-Charger functionality and that subscriber data is required.

If this parameter is absent then the VLR does not support the Super-Charger functionality.

Supported LCS Capability Sets

This parameter indicates, if present, the capability sets of LCS which are supported. If the parameter is sent but no capability set is marked as supported then the VLR does not support LCS at all.

If this parameter is absent then the VLR may support at most LCS capability set 1, that is LCS Release98 or Release99 version.

Offered CAMEL 4 CSIs

This parameter indicates the CAMEL phase 4 CSIs offered in the VMSC/VLR (see clause 7.6.3.36D).

HLR number

See definition in clause 7.6.2. The presence of this parameter is mandatory in case of successful outcome of the service.

MS Not Reachable Flag

See definition in clause 7.6.8. This parameter shall be present in case of successful outcome of the service, if the "MS Not Reachable flag" was set in the HLR.

V-GMLC address

See definition in clause 7.6.2.

User error

In case of unsuccessful outcome of the service, an error cause shall be returned by the HLR. The following error causes defined in clause 7.6.1 may be used, depending on the nature of the fault:

- unknown subscriber;
- system failure;
- unexpected data value;
- data missing.

Provider error

For definition of provider errors see clause 7.6.1.

.....

17.7 MAP constants and data types

17.7.1 Mobile Service data types

.....

-- fault recovery types

.....

ResetArg ::= SEQUENCE {		
hlr-Number	ISDN-AddressString,	
hlr-List	HLR-List	OPTIONAL,
}		
RestoreDataArg ::= SEQUENCE {		
imsi	IMSI,	
lmsi	LMSI	OPTIONAL,
extensionContainer	ExtensionContainer	OPTIONAL,
,		
vlr-Capability	[6] VLR-Capability	OPTIONAL,
v-gmlc-Address	[x] GSN-Address	OPTIONAL }
RestoreDataRes ::= SEQUENCE {		
hlr-Number	ISDN-AddressString,	
msNotReachable	NULL	OPTIONAL,
extensionContainer	ExtensionContainer	OPTIONAL,
}		

*** End of Document ***

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N4-031365

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		B (add	dition of	feature),					R97	(Rele	ease 1997)	
		C (fun	ctional	modification	of fe	ature)			R98	(Rele	ease 1998)	
		D (edi	torial m	odification)		,			R99	(Rele	ease 1999)	
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		be found in	3GPP	TR 21.900.		Ŭ			Rel-5	(Rele	ease 5)	
			-						Rel-6	, (Rele	ease 6)	

Reason for change: ೫	SA2 has approved the Deferred MT-LR Area Event consept. This CR, together with the companion CRs, provides the corresponding Stage 3 modifications.
Summary of change: #	Addition of area event specific parameters to Provide Subscriber Location and Subscriber Location Report MAP services.
Consequences if #	The functionalities defined at Stage2 would not be implemented in Stage3
not approved:	creating misalignment.
Clauses affected: #	7.6.2, 7.6.11, 13A.2, 13A.3, 17.7.13
	YN
Other specs #	X Other core specifications # 24.030 CR 014, 24.080 CR 031
affected:	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 <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

7.6.2.59 V-GMLC Address

This parameter refers to the IP address of a V-GMLC.

7.6.2.60 ¥R-GMLC Address

This parameter refers to the IP address of a $\frac{\forall \mathbf{R}}{\mathbf{R}}$ -GMLC.

7.6.2.61 H-GMLC Address

This parameter refers to the IP address of a H-GMLC.

7.6.2.62 PPR Address

This parameter refers to the IP address of a Privacy Profile Register.

**** NEXT MODIFIED SECTION ****

7.6.11 Location Service Parameters

7.6.11.1 Age of Location Estimate

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

7.6.11.2 Deferred MT-LR Response Indicator

This parameter shows that this is a response to a deferred mt-lr request.

7.6.11.3 Deferred MT-LR Data

This parameter is used to report the deferred location event type, the location information and reason why the serving node aborted monitoring the event to the GMLC. The termination cause mt-lrRestart shall be used to trigger the GMLC to restart the location procedure in all the cases where the sending node detects that the location procedure cannot be successfully performed anymore by the sending node and that it could be successfully performed by another node (as for example when. Cancel Location or Send Identification has been received). The location information shall be included only if the termination cause is mt-lrRestart. The network node number contained in the location information refers to the node where the MS/UE has moved to and shall be included if available, like in case Send Identification has been received.

7.6.11.4 LCS Client ID

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

7.6.11.5 LCS Event

This parameter identifies an event associated with the triggering of a location estimate.

7.6.11.6 Void

7.6.11.7 LCS Priority

This parameter gives the priority of the location request.

7.6.11.8 LCS QoS

This parameter defines the Quality of Service (QoS) for any location request. It is composed of the following elements.

1) Response Time

Indicates the category of response time – "low delay" or "delay tolerant".

2) Horizontal Accuracy

Indicates the required horizontal accuracy of the location estimate.

3) Vertical Coordinate

Indicates if a vertical coordinate is required (in addition to horizontal coordinates).

4) Vertical Accuracy

Indicates the required vertical accuracy of the location estimate (inclusion is optional).

7.6.11.9 CS LCS Not Supported by UE

This parameter is used by the VLR to indicate to the HLR that the UE does not support neither UE Based nor UE Assisted positioning metheds for Circuit Switched Location Services. VLR defines the presence of this parameter on the basis of the Classmark 3 information.

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 methods for Packet Switched Location Services. SGSN defines the presence of this parameter on the basis of the UE capability information.

7.6.11.11 Location Estimate

This parameter gives an estimate of the location of an MS in universal coordinates and the accuracy of the estimate. The estimate is expressed in terms of the geographical shapes defined by 3GPP TS 23.032. and is composed of the type of shape plus the encoding of the shape itself. Any type of shape defined in 3GPP TS 23.032 can be filled in in the Location Estimate parameter, but only the encoding of the following shapes shall be carried by Location Estimate:

- Ellipsoid point with uncertainty circle
- Ellipsoid point with uncertainty ellipse
- Ellipsoid point with altitude and uncertainty ellipsoid
- Ellipsoid arc
- Ellipsoid point

The encoding for the remaining types of shape, defined in the 3GPP TS 23.032, shall be filled in in the Additional Location Estimate parameter.

7.6.11.11A Positioning Data

This parameter provides positioning data associated with a successful or unsuccessful location attempt for a target MS. 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].

7.6.11.12 Location Type

This parameter indicates the type of location estimate required by the LCS client. Possible location estimate types include:

- current location;
- current or last known location;
- initial location for an emergency services call;
- deferred location event type.

7.6.11.13 NA-ESRD

This parameter only applies to location for an emergency services call in North America and gives the North American Emergency Services Routing Digits.

7.6.11.14 NA-ESRK

This parameter only applies to location for an emergency services call in North America and gives the North American Emergency Services Routing Key.

7.6.11.15 LCS Service Type Id

This parameter defines the LCS Service Type of the current positioning request. The possible values are defined in 3GPP TS 22.071 [123]

7.6.11.16 Privacy Override

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

7.6.11.17 Supported LCS Capability Sets

This parameter indicates which capability sets of LCS are supported in the VLR or SGSN.

7.6.11.18 LCS Codeword

This parameter contains the codeword associated to current positioning request as described in 3GPP TS 23.271 [26a].

7.6.11.19 Void

7.6.11.20 Supported GAD Shapes

This parameter indicates which of the shapes defined in 3GPP TS 23.032 are supported. If the parameter is not provided then the receiving node shall assume that the sending entity supports the following shapes:

- Ellipsoid point with uncertainty circle
- Ellipsoid point with uncertainty ellipse
- Ellipsoid point with altitude and uncertainty ellipsoid
- Ellipsoid arc
- Ellipsoid point

7.6.11.21 Additional Location Estimate

This parameter gives an estimate of the location of an MS/UE in universal coordinates and the accuracy of the estimate. This parameter allows the location estimate to be expressed in any of the geographical shapes defined in 3GPP TS 23.032

7.6.11.22 Void

7.6.11.23 LCS-Reference Number

This parameter represents a reference between a request and a responce of a deferred mt-lr procedure as described in 3GPP TS 23.271 [26a].

7.6.11.24 LCS Privacy Check

This parameter refers to the requested privacy check related actions (call/session unrelated and/or call/session related) from MSC or SGSN provided by H-GMLC. Possible requested actions are:

- positioning allowed without notifying the UE user;
- positioning allowed with notification to the UE user;
- positioning requires notification and verification by the UE user; positioning is allowed only if granted by the UE user or if there is no response to the notification;
- positioning requires notification and verification by the UE user; positioning is allowed only if granted by the UE user;
- positioning not allowed.

7.6.11.25 Additional LCS Capability Sets

This parameter indicates which capability sets of LCS are supported in the VLR or SGSN.

7.6.11.xx Area Event Info

This parameter defines the requested deferred MT-LR area event information. The parameter consists of area definition, type of area event, occurrence info and minimum interval time.

**** NEXT MODIFIED SECTION ****

13A.2 MAP-PROVIDE-SUBSCRIBER-LOCATION Service

.

13A.2.1 Definition

This service is used by a GMLC to request the location of a target MS from the visited MSC or SGSN at any time. This is a confirmed service using the primitives from table 13A.2/1.

13A.2.2 Service Primitives

I able 13A.2/1:	Provide_	_Subscriber_	Location

. .

Parameter name	Request	Indication	Response	Confirm
Invoke id	М	M(=)	M(=)	M(=)
Location Type	М	M(=)		
MLC Number	М	M(=)		
LCS Client ID	М	M(=)		
Privacy Override	U	C(=)		
IMSI	С	C(=)		
MSISDN	С	C(=)		
LMSI	С	C(=)		

LCS Priority	С	C(=)		
LCS QoS	С	C(=)		
IMEI	U	C(=)		
Supported GAD Shapes	С	C(=)		
LCS-Reference Number	С	C(=)		
LCS Codeword	С	C(=)		
LCS Service Type Id	С	C(=)		
LCS Privacy Check	С	C(=)		
Area Event Info	<u>C</u>	<u>C(=)</u>		
H-GMLC Address	<u>C</u>	<u>C(=)</u>		
R-GMLC Address	C	<u>C(=)</u>		
Location Estimate			М	M(=)
Positioning Data			С	C(=)
Age of Location Estimate			С	C(=)
Additional Location			С	C(=)
Estimate				
Deferred MT-LR			С	C(=)
Response Indicator				
User error			С	C(=)
Provider error				0

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.

<u>MSISDN</u>

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

<u>LMSI</u>

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 $\frac{\text{mt}}{\text{MT}}$ - $\frac{\text{lr}}{\text{LR}}$ procedure is performed for a UE available event or an area event.

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].

Area Event Info

See definition in clause 7.6.11. The parameter shall be included if a deferred MT-LR procedure is performed for an area event.

H-GMLC address

See definition in clause 7.6.2. The parameter shall be included if a deferred MT-LR procedure is performed for an area event.

R-GMLC address

See definition in clause 7.6.2. The parameter shall be included if a deferred MT-LR procedure is performed for an area event and the R-GMLC is not the H-GMLC.

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.

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 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

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

Table 13A.3/1: Subscriber_Location_Report

LCS-Reference Number	С	C(=)		
H-GMLC Address	<u>C</u>	<u>C(=)</u>		
R-GMLC Address	<u>C</u>	<u>C(=)</u>		
User error			С	C(=)
Provider error				0

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.

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.

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 an area event.

R-GMLC address

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

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
;
TMPORTS
   AddressString,
   ISDN-AddressString,
   IMEI,
   IMSI,
   LMSI,
   SubscriberIdentity,
   AgeOfLocationInformation,
   LCSClientExternalID,
   LCSClientInternalID,
   LCSServiceTypeID
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) qsm-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 {
                                          [0] ISDN-AddressString
```

IIITCINUIIDEL	[U] ISDN-Addressscring,	
targetMS	 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 }
		,

I del agationInfa ::- CEQUENCE		
LCSLOCATIONINIO= SEQUENCE {		
networkNode-Number	ISDN-AddressString,	
NetworkNode-number can be either	msc-number or sgsn-number	
lmsi	[0] LMSI	OPTIONAL,
owtongionContainer	[1] ExtongionContainor	
extensioncontainer	[1] Excensioncontainer	OPTIONAL,
•••• /		
gprsNodeIndicator	[2] NULL	OPTIONAL,
gprsNodeIndicator is set only if	the SGSN number is sent as the Net	work Node Number
additional-Number	[3] Additional-Number	ODTIONAL
	[4] Consistent CC Constalling Constalling	OPTIONAL,
supportedLCS-CapabilitySets	[4] SupportedLCS-CapabilitySets	OPIIONAL,
additional-LCS-CapabilitySets	[5] SupportedLCS-CapabilitySets	OPTIONAL
}		
Durani de Guberni ben Legetien Annu		
ProvideSubscriberLocation-Arg ::= SE	QUENCE {	
locationType	LocationType,	
mlc-Number	ISDN-AddressString,	
lcs-ClientID	[0] LCS-ClientID	OPTIONAL.
		ODTIONAL,
privacyoverride	[I] NULL	OPIIONAL,
imsi	[2] IMSI	OPTIONAL,
msisdn	[3] ISDN-AddressString	OPTIONAL,
lmei		OPTIONAL
imai		ODTIONAL,
Timer	COLTMET	OPILONAL,
lcs-Priority	[6] LCS-Priority	OPTIONAL,
lcs-QoS	[7] LCS-QoS	OPTIONAL,
extensionContainer	[8] ExtensionContainer	OPTIONAL.
	Inconstancementer	
•••• /		
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lcs-PrivacyCheck	[13] LCS-PrivacyCheck	OPTIONAL,
areaEventInfo	[xx] AreaEventInfo	OPTIONAL,
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<pre>LocationType ::= SEQUENCE { locationEstimateType , deferredLocationEventType LocationEstimateType ::= ENUMERATED { currentLocation currentOrLastKnownLocation initialLocation , activateDeferredLocation cancelDeferredLocation cancelDeferredLocation exception handling: a ProvideSubscriberLocation-Arg con shall be rejected by the receiver w DeferredLocationEventType ::= BIT STRING msAvailable enteringIntoArea leavingFromArea beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: a ProvideSubscriberLocation-Arg conta beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: a ProvideSubscriberLocation-Arg conta beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: LesClientID ::= SEQUENCE { lcsClientType lcsClientExternalID lcsClientInternalID lcsClientName , </pre>	<pre>[0] LocationEstimateType, [1] DeferredLocationEventType (0), (1), (2), (3), (4) } taining an unrecognized LocationEst ith a return error cause of unexpect { (0), (1), (2), (3) } (SIZE (116)) oneTimeEvent regardless of the poss 0. ining other values than listed above jected by the receiver with a return [0] LCSClientType, [1] LCSClientExternalID [2] AddressString [3] LCSClientInternalID [4] LCSClientName</pre>	OPTIONAL } simateType ted data value sible value re in cn error cause of OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL,
<pre>LocationType ::= SEQUENCE { locationEstimateType , deferredLocationEventType LocationEstimateType ::= ENUMERATED { currentLocation currentOrLastKnownLocation initialLocation , activateDeferredLocation cancelDeferredLocation cancelDeferredLocationArg con shall be rejected by the receiver w DeferredLocationEventType ::= BIT STRING msAvailable enteringIntoArea leavingFromArea beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: - a ProvideSubscriberLocation-Arg conta DeferredLocationEventType shall be re unexpected data value. LCS-ClientID ::= SEQUENCE { lcsClientType lcsClientType lcsClientInternalID lcsClientInternalID lcsClientName , lcsAPN </pre>	<pre>[0] LocationEstimateType, [1] DeferredLocationEventType (0), (1), (2), (3), (4) } taining an unrecognized LocationEst ith a return error cause of unexpect { (0), (1), (2), (3) } (SIZE (116)) oneTimeEvent regardless of the pose 0. ining other values than listed above jected by the receiver with a return [0] LCSClientType, [1] LCSClientExternalID [2] AddressString [3] LCSClientInternalID [4] LCSClientName [5] APN</pre>	OPTIONAL } simateType ted data value sible value re in rn error cause of OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL,
<pre>LocationType ::= SEQUENCE { locationEstimateType , deferredLocationEventType LocationEstimateType ::= ENUMERATED { currentLocation currentOrLastKnownLocation initialLocation , activateDeferredLocation cancelDeferredLocation cancelDeferredLocation exception handling: a ProvideSubscriberLocation-Arg con shall be rejected by the receiver w DeferredLocationEventType ::= BIT STRING msAvailable enteringIntoArea leavingFromArea beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: a ProvideSubscriberLocation-Arg conta beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: a ProvideSubscriberLocation-Arg conta beingInsideArea is always treated as of occurrenceInfo inside areaEventInf exception handling: LesClientID ::= SEQUENCE { lcsClientType lcsClientType lcsClientInternalID lcsClientName , lcsAPN lcsRemuestorID </pre>	<pre>[0] LocationEstimateType, [1] DeferredLocationEventType (0), (1), (2), (3), (4) } taining an unrecognized LocationEst ith a return error cause of unexpect { (0), (1), (2), (3) } (SIZE (116)) oneTimeEvent regardless of the pose 0. ining other values than listed above jected by the receiver with a return [0] LCSClientType, [1] LCSClientExternalID [2] AddressString [3] LCSClientInternalID [4] LCSClientName [5] APN [6] LCSRequestorID</pre>	OPTIONAL }

LCSClientType ::= ENUMERATED {		
	(0)	
emergencyservices	(0),	
valueAddedServices	(1),	
plmnOperatorServices	(2),	
lawful Intercept Services	(3)	
•••• }		
exception handling:		
unrecognized values may be ign	ored if the LCS client uses the privacy o	override
otherwise, an unrecognized value	ue shall be treated as unexpected data by	z a receiver
a return error shall then be r	aturned if received in a MAD invoke	
	ecumed if received in a MAF invoke	
LCSClientName ::= SEQUENCE {		
dataCodingScheme	[0] USSD-DataCodingScheme,	
nameString	[2] NameString	
namebering	[2] Nameberring,	
••••		
lcs-FormatIndicator	[3] LCS-FormatIndicator OPTIC	ONAL }
The USSD-DataCodingScheme shall indic	ate use of the default alphabet through	the
following encoding	1 3	
DIT 76543210		
00001111		
NameString ::= USSD-String (SIZE (1 may	NameStringLength))	
maxNameStringLength INTEGER ::= 63		
LCSRequestorID ::= SEQUENCE {		
dataCodingEghomo	[0] USED DataCodingSchome	
datacourigscheine	[0] USSD-Datacouringscheme,	
requestorIDString	[1] RequestorIDString,	
• • • • /		
lcs-FormatIndicator	[2] LCS-FormatIndicator OPTIC	SNAL }
PermerterTDCtring ::- UCCD Ctring (CIZE	(1 maxBoguesterTDCtringLongth))	
Requestorinstring= USSD-String (SIZE	(1maxRequestorIDstrIngLength))	
maxRequestorIDStringLength INTEGER ::=	127	
LCS-FormatIndicator ::= ENUMERATED {		
LCS-FormatIndicator ::= ENUMERATED { logicalName	(0),	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress	(0), (1),	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn	<pre>(0), (1), (2)</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn wrl	<pre>(0), (1), (2), (2)</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url	(0), (1), (2), (3),	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl	<pre>(0), (1), (2), (3), (4),</pre>	
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl }</pre>	<pre>(0), (1), (2), (3), (4),</pre>	
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl }</pre>	<pre>(0), (1), (2), (3), (4),</pre>	
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1))</pre>	<pre>(0), (1), (2), (3), (4),</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1))	<pre>(0), (1), (2), (3), (4),</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority	<pre>(0), (1), (2), (3), (4),</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority	<pre>(0), (1), (2), (3), (4),</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1	<pre>(0), (1), (2), (3), (4),</pre>	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1	(0), (1), (2), (3), (4),	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-OOS ::= SEQUENCE {	(0), (1), (2), (3), (4),	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { bariametal accounts	(0), (1), (2), (3), (4),	
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC</pre>	DNAL ,
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC</pre>	DNAL , DNAL ,
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC</pre>	DNAL , DNAL , DNAL ,
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTI([1] NULL OPTI([2] Vertical-Accuracy OPTI([3] ResponseTime OPTI([3] Respon</pre>	DNAL, DNAL, DNAL, DNAL, DNAL,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QOS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime other values </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC</pre>	DNAL, DNAL, DNAL, DNAL, DNAL,
LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer v	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer }</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer }</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC</pre>	DNAL , DNAL , DNAL , DNAL , DNAL , DNAL ,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bit 5 7-1 = 7 bit Uncertainty Cod </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC ZE (1)) a defined in 2CEP TS 23 032 The barizon</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, DNAL,
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the error</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, Tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC [5] ZZE (1)) we defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC [5] ResponseTime OPTIC [5] ResponseTime OPTIC [6] ExtensionContainer OPTIC [7] ExtensionCont</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC EZE (1)) we defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi (1))</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, Tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi : (1))</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bit 8 = 0 confidence.</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi [1] (1)) e intu Code defined in 2GPD TG 00.000</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bit 8 = 0 bit 7-1 = 7 bit Vertical Uncert </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC ZEE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi . (1)) ainty Code defined in 3GPP TS 23.032.</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, Tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert The vertical location error should</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) de defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi (1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi : (1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated confidence.</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SI - bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bits 7-1 = 7 bit Vertical Uncert bits 7-1 = 7 bit Vertical Uncert The vertical location error shou by the uncertainty code with 67%</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi </pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, Tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE - bit 8 = 0 bit 8 = 0 confidence. Vertical-Accuracy ::= OCTET STRING (SIZE - bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical location error shou by the uncertainty code with 67%</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi : (1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated confidence.</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert rent should be less than the er confidence. ResponseTime ::= SEQUENCE { ResponseTime ::= SEQUENCE { rent is set in the is th</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC EZE (1)) de defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi [(1)) ainty Code defined in 3GPP TS 23.032. Id be less than the error indicated confidence. BegenengeTimeCatagery: </pre>	DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert rhe vertical location error shou by the uncertainty code with 67% ResponseTime ::= SEQUENCE { responseTimeCategory l }</pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi : (1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated confidence. ResponseTimeCategory,</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%
<pre>LCS-FormatIndicator ::= ENUMERATED { logicalName e-mailAddress msisdn url sipUrl } LCS-Priority ::= OCTET STRING (SIZE (1)) 0 = highest priority 1 = normal priority all other values treated as 1 LCS-QoS ::= SEQUENCE { horizontal-accuracy verticalCoordinateRequest vertical-accuracy responseTime extensionContainer } Horizontal-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Uncertainty Cod error should be less than the er confidence. Vertical-Accuracy ::= OCTET STRING (SIZE bit 8 = 0 bits 7-1 = 7 bit Vertical Uncert bit 8 = 0 bit 8 = 0 </pre>	<pre>(0), (1), (2), (3), (4), [0] Horizontal-Accuracy OPTIC [1] NULL OPTIC [2] Vertical-Accuracy OPTIC [3] ResponseTime OPTIC [4] ExtensionContainer OPTIC [4] ExtensionContainer OPTIC ZZE (1)) e defined in 3GPP TS 23.032. The horizon ror indicated by the uncertainty code wi : (1)) ainty Code defined in 3GPP TS 23.032. ld be less than the error indicated confidence. ResponseTimeCategory, finction of the second s</pre>	DNAL, DNAL, DNAL, DNAL, DNAL, DNAL, tal location th 67%

ResponseTimeCategory ::= ENUMERATED {	
lowdelay (0),	
delaytolerant (1),	
}	
exception handling:	
an unrecognized value shall be trea	ted the same as value 1 (delaytolerant)
SupportedGADShapes ::= BIT STRING {	
ellipsoidPoint (U),	(1)
ellipsoidPointWithUncertaintyEllips	(1),
polygon (3)	e (2),
ellipsoidPointWithAltitude (4).	
ellipsoidPointWithAltitudeAndUncert	aintyElipsoid (5),
ellipsoidArc (6) } (SIZE (716))	1 1 1 1
A node shall mark in the BIT STRING a	11 Shapes defined in 3GPP TS 23.032 it supports.
exception handling: bits 7 to 15 shal	l be ignored if received.
LCS-ReferenceNumber::= OCTET STRING (S	SIZE(1))
LCSCodeword ::= SEQUENCE {	
dataCodingScheme	[0] USSD-DataCodingScheme,
lcsCodewordString	[1] LCSCodewordString,
}	
LCSCodewordString ::= USSD-String (SIZE	(1maxLCSCodewordStringLength))
	100
maxLCSCodewordStringLength INTEGER ::=	127
LCS-PrivacyCneck ::= SEQUENCE {	
callSessionUnrelated	[U] PrivacyCheckRelatedAction,
	[1] PrivacycheckRelatedAction OPIIONAL,
••••}	
PrivacyCheckPelatedAction ::= ENUMERATED	1
allowedWithoutNotification (0)	L
allowedWithNotification (1)	
allowedIfNoResponse (2).	
restrictedIfNoResponse (3),	
notAllowed (4),	
}	
exception handling:	
a ProvideSubscriberLocation-Arg con	taining an unrecognized PrivacyCheckRelatedAction
shall be rejected by the receiver w	ith 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,
}	
American in OPOLIPICE CIER (1 meriling)	
Arealist= SEQUENCE SIZE (1maxNumOIA	reas) OF Area
TAREA THEOREM	
MAXNUMOLALEAS INTEGER ··= 10	
Area ::= SFOUENCE \$	
areaType	[0] AreaType
areaIdentification	[1] AreaIdentification
}	
AreaType ::= ENUMERATED {	
countryCode	(0),
plmnId	(1),
locationAreaId	(2),
routingAreaId	(3),
cellGlobalId	(4),
1	

AreaIdentification ::= OCTET STRING (SIZE (27))			
The internal structure is define	ed as follows:		
octet 1 bits 4321	Mobile Country Code 1 st digit		
bits 8765	Mobile Country Code 2 nd digit		
octet 2 bits 4321	Mobile Country Code 3 rd digit		
bits 8765	Mobile Network Code 3 rd digit if 3 digit MNC included		
	or filler (1111)		
octet 3 bits 4321	Mobile Network Code 1 st digit		
bits 8765	Mobile Network Code 2 nd 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 (132767)			
minimum interval time between a	rea reports in seconds		
ProvideSubscriberLocation-Res ::= S	EQUENCE {		
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-Ge	ographicalInformation ::= OCTET STRING (SIZE (1., maxExt-Geographic	calInformation))	
	Refers to geographical Information defined in 3GPP TS 23.032.		
	This is composed of 1 or more octets with an internal structure acc	ording to	
	3GPP TS 23.032	<u> </u>	
	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 circl	е	
	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 elli	pse:	
	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 unc	ertainty 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 o	ctet and	
	containing any other shape or an incorrect number of octets or codi	ng 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 rece	ived	
	in the same message.		
	An Ext-GeographicalInformation parameter comprising one octet shall	be treated as	
	invalid data by the receiver if an Add-GeographicalInformation para	meter is not	
	received in the same message.		
maxExt-	-GeographicalInformation INTEGER ::= 20		
	the maximum length allows for further shapes in 3GPP TS 23.032 to b	e included in later	
	versions of 3GPP TS 29.002		
Positio	pningDataInformation ::= OCTET STRING (SIZE (2maxPositioningDataInf	ormation))	
	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		
	tor GERAN and UTRAN to allow for Radio Technology specific location methods.		
maxPositioningDataInformation INTEGER ::= 10			
Add-Ge	ographicalInformation ::= OCTET STRING (SIZE (1maxAdd-Geographic	calInformation))	
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 p	An Add-GeographicalInformation parameter, whether valid or invalid, received		
together with a valid Ext-Geogra	phicalInformation parameter in the	same message	
shall be discarded.			
An Add-GeographicalInformation p	arameter containing any shape not d	lefined in	
3GPP TS 23.032 or an incorrect n	umber of octets or coding according	to	
3GPP TS 23.032 shall be treated	as invalid data by a receiver if no	t received	
together with a valid Ext-Geogra	phicalinionnation parameter in the	salle llessage.	
wardd Gaernachigal Tafarmatian INTERNE	01		
the maximum length allows suppor	··= yı t for all the shanes currently defi	ned in 3GPP TS	
23 032	t for all the shapes currently dell		
23:032			
SubscriberLocationReport-Arg ::= SEO	IENCE {		
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	[/] ExtensionContainer	OPTIONAL,	
add-LocationEstimate	[8] Add-Geographical Information	OPTIONAL.	
deferredmt-lrData	[9] Deferredmt-lrData	OPTIONAL,	
lcs-ReferenceNumber	[10] LCS-ReferenceNumber	OPTIONAL,	
positioningData	[11] PositioningDataInformation	OPTIONAL.	
h-gmlc-Address	[xx] GSN-Address	OPTIONAL,	
r-gmlc-Address	[xx] GSN-Address	OPTIONAL }	
one of msisdn or imsi is mandato	ry		
a location estimate that is vali	d for the locationEstimate paramete	r should	
be transferred in this parameter	in preference to the add-LocationE	stimate.	
the deferredmt-IrData parameter	shall be included if and only if th	e ICS-Event	
indicates a deferredmt-irRespons	e. errodmt irRognongo then the logatio	nEatimato	
and the add-locationEstimate par	ameters shall not be sent if the	imstimate	
supportedGADShapes parameter had	been received in ProvideSubscriber	Location-Arg	
and the shape encoded in locatio	nEstimate or add-LocationEstimate w	as not marked	
as supported in supportedGADShap	es. In such a case terminationCause		
in deferredmt-lrData shall be present with value			
shapeOfLocationEstimateNotSuppor	ted.		
If a lcs event indicates deferre	d mt-lr response, the lcs-Reference	number shall be	
included.			
Deferredmt-lrData ::= SEQUENCE {			
deferredLocationEventType	DeferredLocationEventType,		
terminationCause	[0] TerminationCause	OPTIONAL,	
leshocationinio	[1] LESLOCATIONINIO	OPTIONAL,	
lcsLocationInfo may be included	only if a termination Cause is prese	nt	
indicating mt-lrRestart	only if a communication cause is piese		
LCS-Event ::= ENUMERATED {			
emergencyCallOrigination (0),			
emergencyCallRelease (1),			
mo-lr (2),			
,			
<pre>deferredmt-lrResponse (3) }</pre>			

_ _

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,
1		

END