**3GPP SA3LI#94 S3i240492**

**Amsterdam; July 9-12, 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **33.127** | **CR** | **0239** | **rev** | **2** | **Current version:** | **18.8.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | Corrections (non-existent interface name, LALS periodic location reporting) |
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| ***Source to WG:*** | SA3-LI (Nokia, Nokia Shanghai Bell, Rogers Communications, OTD) |
| ***Source to TSG:*** | SA3 |
|  |  |
| ***Work item code:*** | LI18 |  | ***Date:*** | 2024-07-10 |
|  |  |  |  |  |
| ***Category:*** | ***F*** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | The current text has in a few places "LI\_H1" to refer to "LI\_HI1" and "LI\_H2" to refer to "LI\_HI2". The current text for LALS periodic reporting indicates as if the duration for such reporting is provisioned (periodic reporting has to be done till it is deactivated).  |
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| ***Summary of change:*** | Reference to "LI\_H1" is changed to "LI\_HI1". All references to "LI\_H2" are changed to "LI\_HI2". The "LI\_HI2/3" is changed to "LI\_HI2/LI\_HI3". LALS related text corrected. |
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| ***Consequences if not approved:*** | The spec will be referring to a non-existent interface. Wrong implementation of LALS. |
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| ***Clauses affected:*** | 7.2.2.1, 7.2.3.1, 7.3.3.2.2, 7.3.3.2.3, 7.3.3.2.4, Annex C |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | S3i240457 |

### \*\* First Change \*\*

#### 7.2.2.1 Architecture

The UDM provides the unified data management for UE. The UDM shall have LI capabilities to generate the target UE's serving system (e.g. VPLMN Id or AMF Id related xIRI). Extending the generic LI architecture presented in clause 5, figure 7.2-1 below gives a reference point representation the LI architecture with UDM as a CP NF providing the IRI-POI functions.



Figure 7.2-1: LI architecture for LI at UDM

The LICF present in the ADMF receives the warrant from an LEA, derives the intercept information from the warrant and provides it to the LIPF.

The LIPF present in the ADMF provisions IRI-POI (over LI\_X1) present in the UDM and MDF2. The LIPF may interact with the SIRF (over LI\_SI) present in the NRF to discover the UDM in the network.

The IRI-POI present in the UDM detects the target UE's service area registration and subscription related functions, generates and delivers the xIRI to the MDF2 over LI\_X2. The MDF2 generates and delivers the IRI messages based on received xIRI to the LEMF over LI\_HI2.

### \*\* Next Change \*\*

#### 7.2.3.1 Architecture

The [HSS](https://en.wikipedia.org/wiki/Home_Subscriber_Server) contains the subscription-related information for all users served by the CSP. The HSS provides the support functions in the mobility management, session setup, user authentication and access authorization.

The HSS shall have LI capabilities to generate the xIRIs as described in clause 7.2.3.3. The present document specifies two options for HSS LI capabilities:

1. Use TS 33.107 [11] and TS 33.108 [21] natively as defined in those documents.

2. Use the capabilities specified below in the present document for stage 2 and in TS 33.128 [15] for stage 3.

Extending the generic LI architecture presented in clause 5, figure 7.2-2 below gives a reference point representation the LI architecture with HSS as a CP NF providing the IRI-POI functions.



Figure 7.2-2: LI architecture for LI at HSS

The LICF present in the ADMF receives the warrant from an LEA, derives the intercept information from the warrant and provides it to the LIPF.

The LIPF present in the ADMF provisions IRI-POI (over LI\_X1) present in the HSS and MDF2.

The IRI-POI present in the HSS detects the target UE's service area registration and subscription related functions, generates and delivers the xIRI to the MDF2 over LI\_X2. The MDF2 generates and delivers the IRI messages based on received xIRI to the LEMF over LI\_HI2.

The HSS shall provide the IRI-POI functions independent of the services on which the interception is active.

When multiple intercepts are active, IRI-POI functions in the HSS may send one xIRI which can then be distributed to the LEMFs associated with those multiple intercepts from the MDF2.

### \*\* Next Change \*\*

##### 7.3.3.2.2 Immediate location provision

The request for immediate location provision is delivered to the LI-LCS client over the LI\_X1 interface. Upon receiving the request, the LI-LCS client initiates a Location Immediate Request (LIR, see TS 23.271 [5]) to the LCS Server/GMLC supporting LALS over the Le interface and reports the acquired location to the MDF2 over LI\_X2.

While waiting for a response to an LIR from the LCS Server/GMLC, the LI-LCS client may receive and process additional LIRs from the ADMF over the LI\_X1.

NOTE: The LCS Server/GMLC supporting LALS can be optimized to provide the same single location estimation in response to multiple positioning requests arriving in temporal proximity of each other.

The resulting immediate location information shall be delivered by the LI-LCS client as xIRI over LI\_X2 to the MDF2. The MDF2 generates and delivers the IRI messages based on received xIRI to the LEMF over LI\_HI2.

### \*\* Next Change \*\*

##### 7.3.3.2.3 Periodic location provision

The request for periodic location provision is delivered to the LI-LCS client over the LI\_X1 interface.

The request for periodic location from the ADMF to the LI-LCS client includes, among other parameters, a parameter defining report periodicity. The description of the service response parameters is provided in clause 7.3.3.4. The periodic location result shall be delivered by the LI-LCS client as xIRI over LI\_X2 to the MDF2. The MDF2 generates and delivers the IRI messages based on received xIRI to the LEMF over LI\_HI2.

The periodicity of the LALS reports shall be controlled by the LI-LCS client. The LI-LCS client shall issue Location Immediate Requests (LIR, see TS 23.271 [5]) at required time intervals until stopped by the ADMF.

### \*\* Next Change \*\*

##### 7.3.3.2.4 Intermediate and multiple location provision

A request for immediate or periodic location provision from the ADMF to the LI-LCS Client may carry parameters enabling multiple intermediate responses from the LCS Server/GMLC to a single LIR issued by the LI-LCS Client (as defined in TS 23.273 [30] clauses 6.10.4 and 6.1.3). These parameters include the flag for acceptance of intermediate location estimates and the maximum response time for final location result (see OMA MLP [6], clauses 5.3.60.1 and 5.3.107).

Similar to a single service response, the intermediate location estimates shall include the response parameters defined in clause 7.3.3.4 and shall be delivered by the LI-LCS Client as xIRI over LI\_X2 to the MDF2. The MDF2 generates and delivers the IRI messages based on received xIRI to the LEMF over LI\_HI2.

### \*\* Next Change \*\*

Annex C (informative):
LEA initiated suspend and resume

This annex presents a means within current ETSI and 3GPP specifications to support the temporary suspension (suspend) and subsequent resuming (resume) of a Lawful Intercept. Temporary suspension of LI is either directly initiated by the LEA or automatically initiated based on predefined criteria/policy between the LEA and CSP as part of the warrant. This clause only addresses the case of LEA initiated temporary suspension of the delivery of LI product to the LEA.

The underlying baseline is that a Lawful Intercept has been fully authorised and established between the LEA and the CSP via LI\_HI1 with an agreed LIID to map the warrant to the CSP provided LI product via LI\_HI2, LI\_HI3 and LI\_HI4.

The LEA may request that this active LI instance be temporarily suspended. This means, at a minimum, that the CSP no longer delivers (or buffers) LI product to the LEA.

LEA initiated LI suspension may involve the following steps:

- The LEA, via LI\_HI1, sends an Update Request, referencing the intercept, with the DesiredStatus of Suspended; reference ETSI TS 103 120 [7].

- The ADMF, via LI\_X1, deactivates/deprovisions the required LI Functions, reference ETSI TS 103 221-1 [8]. These LI Functions then locally fully delete the active intercept as required and hence stops any subsequent LI\_HI2/LI\_HI3 delivery.

- The ADMF should maintain all the intercept warrant information of the original intercept, with the status advanced to Suspended.

- The MDFs for which the intercept instance has been de-activated send an LI\_HI4 deactivation notification to the LEMF.

- The ADMF sends an Update Response message to the LEA, via LI\_HI1, with a status of Suspended.

To resume the LI product delivery, this may involve the following steps:

- The LEA sends the CSP, via LI\_HI1, an Update Request, referencing the original intercept, with the DesiredStatus of Active. This is equivalent to the initial LI activation but without having to repeat all the warrant information in the original intercept request, and the existing LIID is maintained. Sessions that were active before the intercept suspension that are still active when resumed, or new sessions initiated while the intercept is resumed, are handled as per mid-call intercept activation.

- The ADMF, via LI\_X1, re-provisions the de-activated LI Functions just as for a new intercept to re-instantiate the intercept.

NOTE: This implies all LI Product deliveries will restart just as for a new intercept; e.g. PDU sequence numbers will restart at zero, etc.

- The re-provisioned MDFs send an LI\_HI4 activation notification to the LEMF.

- The ADMF sends an Update Response message to the LEA, via LI\_HI1, with a status of Active.

If the intercept (warrant) timespan expires or the LEA directly requests intercept deactivation while the intercept is in a suspended state, all remaining LI Functions are deactivated/deprovisioned and the rest of LI instance is taken down as per usual warrant deactivation.

### \*\* End of all Changes \*\*