**3GPP TSG-SA3 Meeting #81-LI-e-a *s3i210252***

**Online, , 12th Apr 2021 - 16th Apr 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **33.127** | **CR** | **0123** | **rev** | **1** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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:*** | Port of EPC MME LI | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | SA3-LI (OTD) | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LI17 | | | | |  | ***Date:*** | | | 2021-04-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 can be 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The LI solution for EPC in TS 33.107 and TS 33.108 does not provide any way to handle EPS/5GS interworking scenarios. | | | | | | | | |
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| ***Summary of change:*** | | This CR updates TS 33.127 clauses on LI at the MME and aligns the messages with the equivalent messages in 5GS. | | | | | | | | |
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| ***Consequences if not approved:*** | | LI in EPS/5GS interworking cases will not be possible. | | | | | | | | |
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| ***Clauses affected:*** | | 6.3.1,6.3.2.3, 6.3.2.4, 6.3.2.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | s3i210252 | | | | | | | | |

\*\*\* Start of First Change \*\*\*

### 6.3.1 General

The present document specifies three options for EPC interception capabilities:

Option A. Perform LI on the events specified in the current document in clauses 6.3.2.3.C1a, 6.3.3.3 and 6.3.4.3 using the capabilities specified below for stage 2 and in TS 33.128 [15] for stage 3.

Option B. Perform LI on the events specified in TS 33.107 [11] clause 12 and clause 18.2.4 using the capabilities specified below in the present document for stage 2 and in TS 33.128 [15] for stage 3.

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

Detailed LI architecture and functional requirements for Control and User Plane Separation (CUPS) are outside the scope of the present document. They are specified in TS 33.107 [11].

For implementations that include EPS/5GS interworking, option A shall be used.

\*\*\* Start of Change 2 of 2 \*\*\*

#### 6.3.2.3 IRI events

##### 6.3.2.3.C1a Option A

The IRI-POI present in the MME shall generate xIRI, when it detects the following specific events or information:

- Attach.

- Detach.

- Tracking Area/EPS Location Update.

- Start of interception with EPS attached UE.

- Unsuccessful communication related attempt.

- Identifier association.

The attach xIRI is generated when the IRI-POI present in an MME detects that a target UE has performed an E-UTRAN attach procedure including via a HeNB. The attach xIRI describes the type of attach performed. Unsuccessful registration shall be reported only if the target UE has been successfully authenticated.

The detach xIRI is generated when the IRI-POI present in an MME detects that a target UE has detached from the EPS including via a HeNB. The detach xIRI shall indicate whether it was a UE-initiated or a network-initiated detach.

The tracking area/EPS location update xIRI is generated each time the IRI-POI present in an MME detects that the target’s UE location is updated due to target's UE mobility (e.g. in case of X2 based handover, S1 based handover) or when the MME observes target UE location information during some service operation (e.g., periodic Tracking Area Update, UE triggered Service Request). If the information in the MME received over S1 (TS 36.413 [14]) includes one or more cell IDs, then all cell IDs shall be reported to the LEMF whenever location reporting is triggered at the MME.

The start of interception with EPS attached UE xIRI is generated when the IRI-POI present in an MME detects that interception is activated on a target UE that is already attached to the EPS. If there are multiple PDN connections active for the target, then a start of interception with EPS attached UE xIRI is generated for each of them.

When additional warrants are activated on a target UE, MDF2 shall be able to generate and deliver the start of interception with E-UTRAN attached UE related IRI messages to the LEMF associated with the warrants without receiving the corresponding start of interception with already registered UE xIRI.

The unsuccessful communication related attempt xIRI is generated when the IRI-POI present in an MME detects that a target UE initiated communication procedure (e.g. service request, SMS) is rejected or not accepted by the MME before the proper NF handling the communication attempt itself is involved.

The identifier association xIRI is generated each time the IRI-POI in the MME detects a GUTI allocation change for an IMSI which is served by the MME.

The IRI-POI in the MME shall support per target selective activation or deactivation of reporting of only identifier association xIRI independently of activation of LI for all other events. When identifier association xIRI only reporting is activated, the IRI-POI in the MME shall also generate Tracking Area/EPS Location Update xIRI

##### 6.3.2.3.C1b Option B

The IRI-POI present in the MME shall generate xIRI, when it detects the applicable events specified in TS 33.107 [11].

In addition to the events specified in TS 33.107 [11] the MME shall generate xIRI, when it detects the following additional event:

- Identifier association.

The identifier association xIRI is generated each time the IRI-POI in the MME detects a GUTI allocation change for an IMSI which is served by the MME.

The IRI-POI in the MME shall support per target selective activation or deactivation of reporting of only identifier association xIRI independently of activation of LI for all other events. When identifier association xIRI only reporting is activated, the IRI-POI in the MME shall also generate Tracking Area/EPS Location Update xIRI.

#### 6.3.2.4 Common IRI parameters

The list of xIRI parameters are specified in TS 33.128 [15]. All xIRI shall include the following:

- Target identity.

- Time stamp.

- Location information.

- Correlation information.

#### 6.3.2.5 Specific IRI parameters

##### 6.3.2.5.C1a Option A

The list of parameters in each xIRI are defined in TS 33.128 [15]. The following give a summary:

The attach xIRI shall include the following:

- Attach type information.

- Access type information.

- HeNB information.

The detach xIRI shall include the following:

- Detach Direction.

- Detach type information.

- HeNB information.

The tracking area/EPS location update xIRI shall include the following:

- Location of the target (see clause 7.3).

- HeNB information.

The start of interception with EPS attached UE xIRI shall include the following:

* Attach type information.
* Access type information.
* PDN connection information.

The unsuccessful communication attempt xIRI shall include the following:

- Rejected type of communication attempt.

- Access type information.

- Failure reason.

The identifier association xIRI shall include the following:

- IMSI.

- IMEI.

- Temporary identifier association (i.e. GUTI).

- Association change type indication.\

##### 6.3.2.5.C1b Option B

The list of parameters in each xIRI are defined in TS 33.128 [15], for events which are imported from TS 33.107 [11] clause 12.2.1.2.

The identifier association xIRI shall include the following:

- IMSI.

- IMEI.

- Temporary identifier association (i.e. GUTI).

- Association change type indication.

\*\*\* End of All Changes \*\*\*