**3GPP TSG-SA3 Meeting #81-LI-e-b *s3i210349***

**Online, , 19th May 2021 - 21st May 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **33.128** | **CR** | **0210** | **rev** | **1** | **Current version:** | **17.0.0** |  |
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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:*** | Correction to LI for the SGW/PGW and addition of CUPS EPS | | | | | | | | | |
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| ***Source to WG:*** | SA3-LI(OTD) | | | | | | | | | |
| ***Source to TSG:*** | SA3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LI17 | | | | |  | ***Date:*** | | | 2021-05-19 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
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| ***Reason for change:*** | | The current text in TS 33.128 refers to events in a clause in another document that require LI. The referenced clause does not contain the list of events. This would result in LI not happening as expected. In addition, the current version of TS 33.128 does not have an LI solution for EPS CUPS architecture. This will prevent LI in some EPS/5GS interworking scenarios. | | | | | | | | |
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| ***Summary of change:*** | | Corrects existing references and adds LI solution for EPS CUPS architecture. | | | | | | | | |
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| ***Consequences if not approved:*** | | LI at the SGW/PGW will not work in some implementations. | | | | | | | | |
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| ***Clauses affected:*** | | 6.3.3 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 33.127 CR 0132 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR references some of the changes made in TS 33.127 CR 0132 (s3i210347). | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | S3i210349 | | | | | | | | |

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

### 6.3.3 LI at SGW/PGW and ePDG

#### 6.3.3.C1 General

Unless otherwise specified, the following clauses apply to both CUPS and non-CUPS EPS architectures. When CUPS architecture is used, unless otherwise specified, the term SGW/PGW refers to both the SGW-U/PGW-U and the SGW-C/PGW-C

#### 6.3.3.1 Provisioning over LI\_X1

##### 6.3.3.1.C1 General

The LI functions in the SGW/PGW and ePDG shall support the target identifiers specified in TS 33.127 [5] clause 6.3.3.2:

- IMSI (using the IMSI target identifier format from ETSI TS 103 221-1 [7]).

- MSISDN (using the E164Number target identifier format from ETSI TS 103 221-1 [7]).

- ME Identity (using the IMEI target identifier format from ETSI TS 103 221-1 [7]).

##### 6.3.3.1.C2 Non-CUPS Architecture

When the EPS is implemented using non-CUPS architecture, the IRI-POI and CC-POI present in the SGW/PGW and ePDG are provisioned over LI\_X1 by the LIPF using the X1 protocol as described in clause 5.2.2. A single task may be used.

##### 6.3.3.1.C3 CUPS Architecture

When the EPS is implemented using CUPS architecture, the IRI-POI, IRI-TF and CC-TF present in the SGW-C/PGW-C and the IRI-POI and CC-POI present in the ePDG are provisioned over LI\_X1 by the LIPF using the X1 protocol as described in clause 5.2.2.

#### 6.3.3.2 Generation of xIRI over LI\_X2

The IRI-POI present in the SGW/PGW and ePDG shall send the xIRIs over LI\_X2 for each of the events listed in TS 33.107 [36] clause 12.2.1.2, the details of which are specified in clause 12.2.3 of the same TS.

The IRI-POI present in the SGW/PGW and ePDG shall set the payload format to EpsHI2Operations.EpsIRIContent (value 14), see clause 5.3 and ETSI TS 103 221-2 [8] clause 5.4. The payload field shall contain an EpsHI2Operations.EpsIRIContent structure encoded according to TS 33.108 [12] clauses 10.5 and B.9.

As the LIID may be not available at the SGW/PGW and ePDG but is mandatory in EpsHI2Operations.EpsIRIContent according to Annex B.9 of TS 33.108 [12], its value in the lawfulInterceptionIdentifier field of the encoded PDU shall be set to the fixed string "LIIDNotPresent".

#### 6.3.3.C1 Triggering of the CC-POI from CC-TF over LI\_T3

When CUPS architecture is used and the interception of user plane packets is required, the CC-TF present in the SGW-C/PGW-C sends a trigger to the CC-POI present in the SGW-U/PGW-U over the LI\_T3 interface.

#### 6.3.3.3 Generation of xCC at CC-POI in the SGW/PGW and ePDG over LI\_X3

##### 6.3.3.3.C1 Non-CUPS architecture

The CC-POI present in the SGW/PGW and ePDG shall send xCC over LI\_X3 for each IP packet belonging to the target’s communication.

Each X3 PDU shall contain the contents of the user plane packet given using the GTP-U, IP or Ethernet payload format.

The CC-POI present in the SGW/PGW and ePDG shall set the payload format to indicate the appropriate payload type (5 for IPv4 Packet, 6 for IPv6 Packet, 7 for Ethernet frame or 12 for GTP-U packet as per ETSI TS 103 221-2 [8] clause 5.4).

If it is required to send the ICE-type for the xCC, the CC-POI shall set the NFID attribute (see ETSI TS 103 221-2 [8] clause 5.3.7) to the appropriate value from the ICE-type enumeration in TS 33.108 [12] Annex B.10 as a single octet. As an example, an ICE-type of "sgw" is indicated by setting the attribute to value 3.

##### 6.3.3.3.C2 CUPS architecture

When CUPS architecture is used, the CC-POI in the SGW-U/PGW-U is provisioned by the CC-TF in the SGW-C/PGW-C using a Triggering message (i.e. ActivateTask message) as described in clause 6.3.3.C1.

The CC-POI present in the SGW-U/PGW-U shall send xCC over LI\_X3 for each IP packet matching the criteria specified in the Triggering message (i.e. ActivateTask message) received over LI\_T3 from the CC-TF in the SGW-C/PGW-C.

NOTE: Implementers are reminded of the completeness and non-duplication requirements (see TS 33.127 [5]).

Each X3 PDU shall contain the contents of the user plane packet given using the GTP-U, IP or Ethernet payload format.

The CC-POI present in the SGW-U/PGW-U shall set the payload format to indicate the appropriate payload type (5 for IPv4 Packet, 6 for IPv6 Packet, 7 for Ethernet frame or 12 for GTP-U Packet as described in ETSI TS 103 221-2 [8] clauses 5.4 and 5.4.13.

If handover of the entire GTP-U packet is required over LI\_HI3 (see clause 6.2.3.8), then consideration shall be made of the correct choice of LI\_X3 payload type to ensure that the MDF3 has the necessary CC information. Support for delivery of LI\_X3 as payload type 12 (GTP-U packet) is mandatory.

#### 6.3.3.4 Generation of IRI over LI\_HI2

When an xIRI is received over LI\_X2 from the IRI-POI in the SGW/PGW or ePDG, the MDF2 shall generate the corresponding IRI message and deliver it over LI\_HI2 without undue delay. The IRI message shall contain a copy of the relevant record received in the xIRI over LI\_X2.

When option 2 specified in clause 6.3.1 is used, the MDF2 shall generate IRI messages based on the proprietary information received from the SGW/PGW or ePDG and provide it over LI\_HI2 without undue delay.

The IRI messages shall include an IRI payload encoded according to Clause 10.5 and Annex B.9 of TS 33.108 [12]. The MDF2 shall encode the correct value of LIID in the IRI message, replacing the value "LIIDNotPresent" given in the xIRI (see clause 6.3.2.2).

The IRI messages shall be delivered over LI\_HI2 according to clause 10 of ETSI TS 102 232-7 [10].

#### 6.3.3.5 Generation of CC over LI\_HI3

When xCC is received over LI\_X3 from the CC-POI in the SGW/PGW or ePDG, the MDF3 shall generate the corresponding CC and deliver it over LI\_HI3 without undue delay. The CC message shall contain a copy of the relevant xCC received over LI\_X3.

When option 2 specified in clause 6.3.1 is used, the MDF3 shall generate CC based on the proprietary information received from the SGW/PGW or ePDG and provide it over LI\_HI3 without undue delay.

The CC shall include a CC payload encoded according to Annex B.10 of TS 33.108 [12].

The CC shall be delivered over LI\_HI3 according to clause 10 of ETSI TS 102 232-7 [10].

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