**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *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:***  |  |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | Following release 15, support for many features originally developed for 5GS have been added to EPS. In some cases, these features are limited only to interworked systems, however in many cases, support for these features and services has been enabled in standalone EPS networks. TS 33.107 does not support reporting these features, and would require extensive ongoing work to enable this reporting. The majority of these features are covered in TS 33.127 for interworked systems already, so this CR proposes updating the solutions to also support non-interworked systems. |
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| ***Summary of change:*** | Adds text clarifying that implementations with post release 15 features need to be reported as specified in TS 33.127 and TS 33.128. Also provides clarification that these specifications may be used to report non-interworked EPS. |
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| ***Consequences if not approved:*** | It will not be possible to report post release 15 service events from non-interworked EPS. |
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| ***Clauses affected:*** | 6.2.3.3, 6.3.1, 6.3.3.3.1.1, 6.3.3.3.1.2, 6.3.3.3.1.3 (new) |
|  |  |
|  | **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:*** | CR 0274 is the release 18 mirror for this CR. |
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| ***This CR's revision history:*** | s3i250028 |

\*\*\*\* START OF FIRST CHANGE (MAIN DOCUMENT) \*\*\*\*

6.2.3.3 IRI events

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

- PDU session establishment.

- PDU session modification.

- PDU session release.

- Start of interception with an established PDU session.

- Unsuccessful procedure.

The PDU session establishment xIRI is generated when the IRI-POI present in the SMF detects that a PDU session has been established for the target UE.

The PDU session modification xIRI is generated when the IRI-POI present in the SMF detects that a PDU session is modified for the target UE.

The PDU session release xIRI is generated when the IRI-POI present in the SMF detects that a PDU session is released for the target UE.

The start of interception with an established PDU session xIRI is generated when the IRI-POI present in a SMF detects that interception is activated on the target UE that has an already established PDU session in the 5GS. When a target UE has multiple PDU sessions, this xIRI shall be sent for each PDU session with a different value of correlation information.

The unsuccessful procedure xIRI is generated when the IRI-POI present in the SMF detects that a target initiated procedure (e.g. session establishment, session modification) is rejected, is not accepted by the SMF, or fails before the proper NF handling the communication attempt itself is involved.

When additional warrants are activated on a target UE, MDF2 shall be able to generate and deliver the start of interception with an established PDU session related IRI messages to the LEMF associated with the warrants without receiving the corresponding start of interception with an established PDU session xIRI.

When the warrant requires the packet header information reporting, the following xIRI shall be generated:

- Packet header information report (see clause 7.12.2).

The generation of packet header information reporting can be done by either the IRI-POI present in the UPF or the MDF2.

\*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

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 6.3.2.3.1, 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.

For implementations that include EPS/5GS interworking, Option A shall be used. For implementations that include EPS features introduced after release 15, Option A shall be used.

For virtualised 4G implementations from Release 15 onwards (including combined 4G / 5G scenarios), 4G shall be virtualised based on the architecture in clause 5.6. For such implementations the LI architecture for 4G / LTE shall be implemented using an ADMF as defined in the present document (including LIPF and LICF split). However, equivalent reference points as specified in TS 33.107 [11] shall be used where appropriate (e.g. X2 is equivalent to LI\_X2 in the present document and MDF is equivalent to MF/DF). Security and audit requirements as defined in clause 8 of the present document shall be applied to such 4G scenarios.

\*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

6.3.3.3.1.1 General

When Option A described in clause 6.3.1 is used, xIRI provided by the IRI-POI in the SGW/PGW based on the events specified in TS 33.107 [11] shall not be generated; the IRI-POI in the SGW/PGW shall generate xIRI when it detects the following specific events or information specified in TS 33.128 [15]:

- PDN connection establishment.

- PDN connection modification.

- PDN connection release.

- Start of interception with an established PDN connection.

- Unsuccessful procedure.

When EPC/5GC interworking architecture is used, the xIRI for the events listed above are described in clause 6.3.3.3.1.2.

When standalone EPC architecture is used, the xIRI for the events listed above are described in clause 6.3.3.3.1.3.

\*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

6.3.3.3.1.2 xIRI records for architectures with EPC/5GC interworking

For the interception of home routed roaming sessions in the visited network, the POIs and TFs shall be present in the SGW and the SMF in the VPLMN and the xIRI records described in the present clause and clause 6.2.3.3 shall be generated.

For all other cases, the POIs and TFs shall be present in the SMF+PGW-C and SMF+PGW-U as described in clause 6.3.3.6.2 and the following events shall be generated.

The PDU session establishment xIRI is generated when the IRI-POI present in the SMF+PGW-C detects that a PDU session with mapped EBIs has been established for the target UE or that a PDN connection has been established for the target UE.

The PDU session modification xIRI is generated when the IRI-POI present in the SMF+PGW-C detects that a PDU session or EBIs are modified for the target UE or when a target UE's PDN connection from EPC is migrated to the 5GS or when a dedicated EPS bearer is activated or deactivated for the target UE.

The PDU session release xIRI is generated when the IRI-POI present in the SMF+PGW-C detects that a PDU session is released or when the default EBI for a PDN connection is deactivated for the target UE.

The start of interception with an established PDU Session xIRI is generated when the IRI-POI present in a SMF+PGW-C detects that interception is activated on the target UE that has an already established PDU session in the 5GS that has a mapped to PDN connection or an already established PDN connection in EPS. When a target UE has multiple 5GC PDU sessions mapped to multiple PDN connections in EPC or when a target UE has multiple PDN connections in EPC, this xIRI shall be sent for each PDU session and each PDN connection with different correlation information values.

The unsuccessful procedure xIRI is generated when the IRI-POI present in the SMF+PGW-C detects that a target initiated procedure (e.g. session establishment, session modification) is rejected, is not accepted by the SMF+PGW-C, or fails before the proper NF handling the communication attempt itself is involved.

When xIRIs are generated due to the detection of a PDU session with mapped EBIs, no separate xIRIs shall be generated for the same events for the corresponding PDN connection.

When additional warrants are activated on a target UE, MDF2 shall be able to generate and deliver the start of interception with an established PDU session related IRI messages to the LEMF associated with the warrants without receiving the corresponding start of interception with an established PDU session xIRI.

When the warrant requires the packet header information reporting, the following xIRI shall be generated:

- Packet header information report (see clause 7.12.2).

The generation of packet header information reporting can be done by either the IRI-POI present in the UPF+PGW-U or the MDF2.

\*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

6.3.3.3.1.3 xIRI records for architectures with standalone EPC

The POIs and TFs shall be present in the SGW/PGW as described in clause 6.3.3.6.1 and the following events shall be generated.

The PDN connection establishment xIRI is generated when the IRI-POI present in the SGW/PGW detects that a PDN connection has been established for the target UE.

The PDN connection modification xIRI is generated when the IRI-POI present in the SGW/PGW detects that a target UE's PDN connection is modified or when a dedicated EPS bearer is activated or deactivated for the target UE.

The PDN connection release xIRI is generated when the IRI-POI present in the SGW/PGW detects that a PDN connection is released or when the default EBI for a PDN connection is deactivated for the target UE.

The start of interception with an established PDN connection xIRI is generated when the IRI-POI present in a SGW/PGW detects that interception is activated on the target UE that has an already established PDN connection in EPS. When a target UE has multiple PDN connections in EPC, this xIRI shall be sent for each PDN connection with different correlation information values.

When xIRIs are generated due to the detection of a PDU session with mapped EBIs, no separate xIRIs shall be generated for the same events for the corresponding PDN connection.

The unsuccessful procedure xIRI is generated when the IRI-POI present in the SGW/PGW detects that a target initiated procedure (e.g. PDN connection establishment, dedicated bearer activation) is rejected, is not accepted by the SGW/PGW, or fails before the proper network element handling the communication attempt itself is involved.

When additional warrants are activated on a target UE, MDF2 shall be able to generate and deliver the start of interception with an established PDN connection related IRI messages to the LEMF associated with the warrants without receiving the corresponding start of interception with an established PDN connection xIRI.

When the warrant requires the packet header information reporting, the following xIRI shall be generated:

- Packet header information report (see clause 7.12.2).

The generation of packet header information reporting can be done by either the IRI-POI present in the SGW/PGW or the MDF2.

\*\*\*\* END OF ALL CHANGES \*\*\*\*