**3GPP SA3LI#91 S3i230606**

**Sydney; October 24-27, 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **33.128** | **CR** | **0579** | **rev** | **1** | **Current version:** | **18.5.0** |  |
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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:***  | Additions to prevent redundant interception of packets from DL data forwarding tunnel |
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| ***Source to WG:*** | SA3-LI (Nokia, Nokia Shanghai Bell) |
| ***Source to TSG:*** | SA3 |
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| ***Work item code:*** | LI18 |  | ***Date:*** | 2023-10-26 |
|  |  |  |  |  |
| ***Category:*** | ***C*** |  | ***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:*** | During an intra-system (5G-5G) or inter-system (5GC to EPC and vice-versa) handover, the UPF used to transfer the uplink (UL) and downlink (DL) packets may also be used to transfer the packets for the DL data forwarding tunnels. If the same PFCP session ID is used for those tunnels as well, then with the PFCP session ID being used as the target identity may result in CC-POI in UPF intercepting the packets from DL data forwarding tunnels as well. To prevent that from happening a functional impact to the CC-POI is added to indicate that CC-POI shall not intercept the packets from the DL data forwarding tunnels.  |
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| ***Summary of change:*** | The impact on CC-POI is to check for the Interface Type value received in the N4: PFCP Session Modification request message.  |
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| ***Consequences if not approved:*** | The same packets may result in multiple copies of xCC.  |
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| ***Clauses affected:*** | 6.2.3.6, 6.2.3.6.1 (new), 6.2.3.6.2 (new), 6.2.3.5.1. |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |   |

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

#### 6.2.3.6 Generation of xCC at CC-POI in the UPF over LI\_X3

##### 6.2.3.6.1 General

The CC-POI present in the UPF 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 SMF unless the IP packet flows through the tunnel setup for Down Link (DL) data forwarding which may be determined as described in clause 6.2.3.6.2. 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 UPF 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.

The CC-POI present in the UPF may use the Additional XID Related Information attributes to facilitate efficient delivery of xCC, as specified in ETSI TS 103 221-2 [8] clause 5.3.22.

##### 6.2.3.6.2 Down link data forwarding tunnel

When the CC-POI generates the xCC from the outgoing IP packets, the CC-POI may use the following criteria for the identifying a DL data forwarding tunnel:

- The N4: PFCP Session Modification request (see TS 29.244 [15], clause 7.5.4) with Forwarding Parameter IE in FAR (see TS 29.244 [15], table 7.5.2.3-2) of Create FAR IE (see TS 29.244 [15], clauses 7.5.4.17 and 7.5.2.3) containing the Destination Interface Type with any of the following values:

- N3 data forwarding (value 14).

- N9 data forwarding (value 23).

- SGW/UPF GTP-U interface for DL data forwarding (value 10).

- The Destination Interface Type shall be checked when the N4: PFCP Session Modification request was received for the outgoing DL data forwarding tunnel setup.

When the CC-POI generates the xCC from the incoming IP packets, the CC-POI may use the following criteria for the identifying a DL data forwarding tunnel:

- The N4: PFCP Session Modification request (see TS 29.244 [15], clause 7.5.4) with PDI IE (see TS 29.244 [15], table 7.5.2.2-2) of Create PDR IE (see TS 29.244 [15], clauses 7.5.4.17 and 7.5.2.2) containing the Source Interface Type with any of the following values:

- N3 data forwarding (value 14).

- N9 data forwarding (value 23).

- SGW/UPF GTP-U interface for DL data forwarding (value 10).

- The Source Interface Type shall be checked when the N4: PFCP Session Modification request was received for the incoming DL data forwarding tunnel setup.

The case of CC-POI present in the UPF checking for the IP packets from the DL data forwarding tunnel for not generating the xCC happens when both of the following are true:

- PFCP session ID used for the DL data forwarding tunnel is used as the target identifier within the CC-POI where the xCC is generated.

- The same UPF that has the CC-POI with that PFCP session ID as the target identifier is used for the DL data forwarding tunnel.

When a different PFCP session ID is used for the DL data forwarding tunnel, the generation of xCC can be avoided by default in the sense by CC-TF in the SMF not sending the LI\_T3: ActivateTask with the PFCP session ID used for the DL data forwarding tunnel as a target identifier to the CC-POI.

Likewise, when a different UPF (e.g. intermediate UPF) is used for the DL data forwarding tunnel, the generation of xCC can be avoided by default in the sense by CC-TF present in the SMF not sending any LI\_T3: ActivateTask to the CC-POI present in that different UPF.

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

##### 6.2.3.5.1 Packet data header reporting

When packet header information reporting is authorised, packet header information reports are generated either by the IRI-POI in the UPF (if approach 1 from clause 7.12.2.3 of TS 33.127 [5] is used) or by the MDF2 (if approach 2 from clause 7.12.2.3 of TS 33.127 [5] is used). Depending on the requirements of the warrant, the packet header information reports can be in per-packet form, as Packet Data Header Reports (PDHRs), or in summary form, as Packet Data Header Summary Reports (PDSRs).

### With approach 1, the IRI-POI in UPF shall not perform the packet data header reporting for the IP packet that flows through the tunnel setup for Down Link (DL) data forwarding which may be determined by the IRI-POI in the UPF in the same way the CC-POI determines as described in clause 6.2.3.6.2.\*\* End of all Changes \*\*