**3GPP TSG-CT WG1 Meeting #126-eC1-** **20xxxx**

**Electronic meeting, 15-22 October 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **24.587** | **CR** | **0130** | **rev** | **1** | **Current version:** | **16.2.1** |  |
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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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | Correction on unicast link identifier update procedure |
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| ***Source to WG:*** | ASUSTeK |
| ***Source to TSG:*** | C1 |
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| ***Work item code:*** | eV2XARC |  | ***Date:*** | 2020-10-21 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | 1. Sub-clause 6.1.2.5.3 specifies “*Before target UE receives the traffic using the new layer-2 IDs, the target UE shall continue to receive the traffic with the old layer-2 IDs (i.e. initiating UE’s old layer-2 ID and target UE’s old layer-2 ID) from initiating UE.*” However, it is not clear when the target UE passes the new layer-2 IDs down to the lower layer for receiving the traffic. Since the initiating UE sends traffic with the new L2IDs after the DIRECT LINK IDENTIFIER UPDATE ACK message is passed to lower layers for transmission, it is possible that the traffic with the new L2IDs may arrive at the target UE earlier than the DIRECT LINK IDENTIFIER UPDATE ACK message due to retransmission of the DIRECT LINK IDENTIFIER UPDATE ACK message in AS layer. Therefore, it is better for the target UE to pass the new L2IDs down to the lower layer for receiving traffic after the DIRECT LINK IDENTIFIER UPDATE ACCEPT message is sent so that traffic missing can be avoided.
2. Since receiving traffic with new L2IDs by the target UE implies the initiating UE has already received the DIRECT LINK IDENTIFIER UPDATE ACCEPT message, it is beneficial for the target UE to complete the unicast link identifier update procedure upon receiving traffic with the new L2IDs. This can avoid retransmission of the DIRECT LINK IDENTIFIER UPDATE ACCEPT message by the target UE and retransmission of the DIRECT LINK IDENTIFIER UPDATE ACK message by the initiating UE if the DIRECT LINK IDENTIFIER UPDATE ACK message is missing.
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| ***Summary of change:*** | 1. Add “*The target UE shall pass the new layer-2 IDs (i.e. initiating UE's new layer-2 ID and target UE's new layer-2 ID if changed)* *along with the PC5 link identifier down to the lower layer to receive the traffic.*” in the sub-clause 6.1.2.5.3, and remove “*pass the new layer-2 IDs (i.e. initiating UE's new layer-2 ID and target UE's new layer-2 ID if changed) down to the lower layer,*” from the sub-clause 6.1.2.5.5.
2. Add “*or traffic with the new layer-2 IDs (i.e. initiating UE's new layer-2 ID and target UE's new layer-2 ID if changed)*” in the sub-clause 6.1.2.5.5 as another condition for the target UE to complete the unicast link identifier update procedure.
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| ***Consequences if not approved:*** | The target UE would not be able to receive traffic with the new layer-2 IDs before receiving the DIRECT LINK IDENTIFIER UPDATE ACK message. |
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| ***Clauses affected:*** | 6.1.2.5.3, 6.1.2.5.5 |
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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:*** |  |

\* \* \* Start of Changes \* \* \* \*

6.1.2.5.3 PC5 unicast link identifier update procedure accepted by the target UE

Upon receipt of a DIRECT LINK IDENTIFIER UPDATE REQUEST message, if the target UE determines:

a) the PC5 unicast link associated with this request message is still valid; and

b) the timer T5010 for the PC5 unicast link identified by this request message is not running,

then the target UE accepts this request, stops timer T5011 if running and responds with a DIRECT LINK IDENTIFIER UPDATE ACCEPT message.

The target UE shall create the DIRECT LINK IDENTIFIER UPDATE ACCEPT message. In this message, the target UE:

a) shall include the target UE's new layer-2 ID assigned by itself;

b) shall include the new LSB of KNRP-sess ID;

c) shall include the initiating UE's new MSB of KNRP-sess ID;

d) shall include the initiating UE's new layer-2 ID;

e) may include the target UE’s new application layer ID if received from upper layer;

f) may include the initiating UE's new IP address/prefix if IP communication is used;

g) may include the initiating UE's new application layer ID; and

h) may include the target UE's new IP address/prefix if IP communication is used.

After the DIRECT LINK IDENTIFIER UPDATE ACCEPT message is generated, the target UE shall pass this message to the lower layers for transmission along with the initiating UE's old layer-2 ID and the target UE's old layer-2 ID, and start timer T5010. The UE shall not send a new DIRECT LINK IDENTIFIER UPDATE ACCEPT message to the same initiating UE while timer T5010 is running. The target UE shall pass the new layer-2 IDs (i.e. initiating UE's new layer-2 ID and target UE's new layer-2 ID if changed) along with the PC5 link identifier down to the lower layer to receive the traffic.

Before target UE receives the traffic using the new layer-2 IDs, the target UE shall continue to receive the traffic with the old layer-2 IDs (i.e. initiating UE’s old layer-2 ID and target UE’s old layer-2 ID) from initiating UE.

Before target UE receives the DIRECT LINK IDENTIFIER UPDATE ACK message from initiating UE, the target UE shall keep sending traffic to the initiating UE using the old layer-2 IDs (i.e. initiating UE’s old layer-2 ID and target UE’s old layer-2 ID).

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

6.1.2.5.5 PC5 unicast link identifier update procedure completion by the target UE

Upon receipt of the DIRECT LINK IDENTIFIER UPDATE ACK message or traffic with the new layer-2 IDs (i.e. initiating UE's new layer-2 ID and target UE's new layer-2 ID if changed), the target UE shall update the associated PC5 unicast link context with the new identifiers, stop timer T5010 and start timer T5011 as configured. Then the target UE shall use the new layer-2 IDs (i.e. initiating UE's new layer-2 ID and target UE's new layer-2 ID if changed) to transmit the PC5 signalling message and PC5 user plane data.

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