**3GPP TSG-CT WG1 Meeting #123-eC1-202xxx**

**Electronic meeting, 16-24 April 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.587** | **CR** | **0013** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Handling of link establishment accept | | | | | | | | | |
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| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XARC | | | | |  | ***Date:*** | | | 2020-04-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | *Rel-16* |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The current descriptions about UE behaviours after sending or receiving the direct link establishment accept message are not complete, which means the V2X layer needs to provide some link info to lower layers in order to enable the lower layer for the following direct link communication. | | | | | | | | |
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| ***Summary of change:*** | | If the target UE accpets the link establishment request, besides the current behaviors as specified in clause 6.1.2.2.3, it shall also create a link context and assign an unique link ID for this PC5 unicast link. After sending the accept message, the target UE also needs to provide some info, like QoS handling info and L2 IDs, to AS layer.  Similarly, the initiaiting UE, after receiving the link establishment accept message, aslo needs to create a link context and uniquely assign a link ID for this PC5 unicast link. Besides, the initiaiting UE further needs to provide some info, like QoS handling info and L2 IDs, to AS layer. | | | | | | | | |
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| ***Consequences if not approved:*** | | The UE behaivours are not complete, which will cause lower layer unable to handle the coming data. | | | | | | | | |
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| ***Clauses affected:*** | | 6.1.2.2.3, 6.1.2.2.4 | | | | | | | | |
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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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

##### 6.1.2.2.3 PC5 unicast link establishment procedure accepted by the target UE

Upon receipt of a DIRECT LINK ESTABLISHMENT REQUEST message, if the target UE accepts this request, the target UE shall uniquely assign a PC5 unicast link identifier, create a PC5 unicast link context and assign a layer-2 ID for this PC5 unicast link. Then the target UE shall store this assigned layer-2 ID and the source layer 2 ID used in the transport of this message provided by the lower layers in the PC5 unicast link context. This pair of layer-2 IDs is associated with a PC5 unicast link context.

If:

a) the target user info IE is included in the DIRECT LINK ESTABLISHMENT REQUEST message and this IE includes the target UE’s application layer ID; or

b) the target user info IE is not included in the DIRECT LINK ESTABLISHMENT REQUEST message and the target UE is interested in the V2X service identified by the V2X service identifier in the DIRECT LINK ESTABLISHMENT REQUEST message;

then the target UE shall either identify an existing security context with the initiating UE, or establish a new security context by performing one or more PC5 unicast link authentication procedures as specified in clause 6.1.2.6, and performing the PC5 unicast link security mode control procedure as specified in clause 6.1.2.7.

Upon successful completion of the PC5 unicast link security mode control procedure, in order to determine whether the DIRECT LINK ESTABLISHMENT REQUEST message can be accepted or not, in case of IP communication, the target UE checks whether there is at least one common IP address configuration option supported by both the initiating UE and the target UE.

If the target UE accepts the PC5 unicast link establishment procedure, the target UE shall create a DIRECT LINK ESTABLISHMENT ACCEPT message. The target UE:

a) shall include the source user info set to the target UE’s application layer ID received from upper layers;

b) shall include a PQFI and the corresponding PC5 QoS parameters;

c) may include an IP address configuration IE set to one of the following values if IP communication is used:

1) "IPv6 router" if only IPv6 address allocation mechanism is supported by the target UE, i.e. acting as an IPv6 router; or

2) "IPv6 address allocation not supported" if IPv6 address allocation mechanism is not supported by the target UE;

d) may include a link local IPv6 address IE formed locally based on IETF RFC 4862 [16] if IP address configuration IE is set to "IPv6 address allocation not supported" and the received DIRECT LINK ESTABLISHMENT REQUEST message included a link local IPv6 address IE.

After sending the DIRECT LINK ESTABLISHMENT ACCEPT message, the target UE shall provide the following information along with the layer-2 IDs to the lower layer, which enables the lower layer to handle the coming PC5 signalling or traffic data:

a) the PC5 unicast link identifier self-assigned for this PC5 unicast link; and

b) PQFI(s) and its corresponding PC5 QoS parameters.

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

##### 6.1.2.2.4 PC5 unicast link establishment procedure completion by the initiating UE

Upon receipt of the DIRECT LINK ESTABLISHMENT ACCEPT message, the initiating UE shall stop timer T5000, uniquely assign a PC5 unicast link identifier and create a PC5 unicast link context for this PC5 unicast link. Then the target UE shall store the source layer-2 ID and the destination Layer-2 ID used in the transport of this message provided by the lower layers. This pair of layer-2 IDs shall be associated with a PC5 unicast link context. From this time onward the initiating UE shall use the established link for V2X communication over PC5 and additional PC5 signalling messages to the target UE.

After receiving the DIRECT LINK ESTABLISHMENT ACCEPT message, the initiating UE shall provide the following information along with the layer-2 IDs to the lower layer, which enables the lower layer to handle the coming PC5 signalling or traffic data:

a) the PC5 unicast link identifier self-assigned for this PC5 unicast link; and

b) PQFI(s) and its corresponding PC5 QoS parameters.

\* \* \* End of changes \* \* \* \*