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

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

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.587** | **CR** | **0020** | **rev** | **1** | **Current version:** | **16.0.0** |  |
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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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | Handling of PC5 unicast QoS flow match and establishment |
|  |  |
| ***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 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:*** | How to handle the PC5 QoS flow match and establishment over PC5 unicast link is still missing.Accroding to the descriptions of PC5 QoS Flow in clause 5.4.1.1.2 of TS23.287, the basic principles of PC5 unicast QoS flow match and establishment can be summarized as follows:Once UE receives the request or data from upper layer, the UE shall determine whether there is any existing PC5 QoS flows matching the service data or request based on the existing PC5 QoS rules* + if there is no PC5 QoS rule(s) for the existing PC5 QoS flows matching the service data or request, the UE shall derive the PC5 QoS parameters of this request or data according to the PC5 QoS mapping configuration defined in clause 5.2.3
		- then the UE determines whether there is existing PC5 QoS Flow that fulfils the derived PC5 QoS parameters based on this PC5 QoS flow context which includes the associated V2X service identifier and the PC5 QoS parameters
			* if there is no existing PC5 QoS flow that fulfils the derived PC5 QoS parameters
				+ The UE creates a new PC5 QoS Flow for the derived PC5 QoS parameters; and
				+ The UE then assigns a PFI and derives PC5 QoS Rule for this PC5 QoS Flow
			* Otherwise, the UE updates the PC5 Packet Filter Set in the PC5 QoS Rule for such PC5 QoS Flow
	+ Otherwise, UE sends the request or data by using the existing PC5 QoS flows whose PC5 QoS rule is matched.

This basic principles of PC5 QoS flow match and establishment are applied to broadcast, groupcast and unicast. |
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| ***Summary of change:*** | Add the handling of the PC5 QoS flow match and establishment over PC5 unicast link based on the above summary. |
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| ***Consequences if not approved:*** | No specification for handling the PC5 QoS flow match and establishment over PC5 unicast link. |
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| ***Clauses affected:*** | 6.1.2.X(new) |
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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.X PC5 QoS flow match and establishment over PC5 unicast link

When service data or request from the upper layers is received, the UE determines if there is any existing PC5 QoS flow(s) matching the service data or request, i.e. based on the PC5 QoS rules for the existing PC5 QoS flow(s).

If there is no PC5 QoS rules for the existing PC5 QoS flow(s) matching the service data or request, the UE shall derive the PC5 QoS parameters based on the V2X application requirements provided by the upper layers (if available) and the V2X service type (e.g. PSID or ITS-AID) according to the PC5 QoS mapping rules defined in clause 5.2.3 and shall perform the following:

a) if there is no existing PC5 QoS flow that fulfils the derived PC5 QoS parameters, then the UE shall create a new PC5 QoS flow by performing the following operations:

1) self-assign a new PQFI;

2) build a new PC5 QoS flow context including the V2X service identifier and the derived PC5 QoS parameters;

3) create a new PC5 QoS rule which contains:

i) a PC5 QoS rule identifier;

ii) the PQFI;

iii) a set of packet filters; and

Editor’s notes: The exact content of the set of packet filters is for further study.

iv) a precedence value.

4) pass the following parameters to the lower layers:

i) the PQFI;

ii) the PC5 QoS parameters;

iii) PC5 unicast link identifier; and

iv) optionally, source and destination layer-2 IDs;

b) if there is an existing PC5 QoS flow that fulfils the derived PC5 QoS parameters, then the UE shall update the PC5 packet filter set in the PC5 QoS rule of this PC5 QoS flow, e.g. add the new packet filter in the PC5 QoS rule of this existing PC5 QoS flow; and

c) the UE shall use the new PC5 QoS flow created as described in bullet a) or the existing PC5 QoS flow with the updated PC5 QoS rules as described in bullet b) to perform the transmission of V2X communication over PC5 as specified in clause 6.1.2.9.

If there is a PC5 QoS rule for the existing PC5 QoS flow matching the service data or request, the UE shall use this existing PC5 QoS flow to perform transmission of V2X communication over PC5 as specified in clause 6.1.2.9.

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