**3GPP TSG-CT WG1 Meeting #135-eC1-222652**

**E-meeting, 6-12 April 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.554** | **CR** | **0026** | **rev** | **1** | **Current version:** | **17.0.0** |  |
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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:***  | Update to QoS flow handling for L3 U2N relay |
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| ***Source to WG:*** | ASUSTeK |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5G\_ProSe |  | ***Date:*** | 2022-03-30 |
|  |  |  |  |  |
| ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | 1. According to sub-clause 8.2.6.3.2, the relay UE may derive the packet filters used for PC5 QoS rules from the packet filters used over Uu and then initiate 5G ProSe direct link modification procedure for updating the derived PC5 QoS rules.

Since a 5G ProSe layer-3 UE-to-network relay UE may establish one IP type PDU session to serve more than one 5G ProSe layer-3 remote UEs, the 5G ProSe layer-3 UE-to-network relay UE may need to initiate separate 5G ProSe direct link modification procedures with the 5G ProSe layer-3 remote UEs for updating individual derived PC5 QoS rules when the relay UE receives the updated QoS rules from the SMF.1. In Table 10.3.2.1.1, the reference value of the PC5 QoS rules IE is not correct and should be fixed.
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| ***Summary of change:*** | 1. In the sub-clause 8.2.6.3.2, the statement “*f) may initiate the 5G ProSe direct link modification procedure as defined in clause 7.2.3 to either update the existing PC5 QoS flow or to set up a new PC5 QoS flow. The 5G ProSe layer-3 UE-to-network relay UE may include the PC5 QoS rule(s) when initiating the 5G ProSe direct link modification procedure.*” is modified as “*f) may initiate the 5G ProSe direct link modification procedure(s) as defined in clause 7.2.3 to either update the existing PC5 QoS flow or to set up a new PC5 QoS flow. The 5G ProSe layer-3 UE-to-network relay UE may include the PC5 QoS rule(s) when initiating the 5G ProSe direct link modification procedure toward a 5G ProSe layer-3 remote UE for which the IP address associated to the 5G ProSe layer-3 remote UE is included in the packet filter(s) used over Uu.*”.
2. In Table 10.3.2.1.1, the reference value of the PC5 QoS rules IE is changed from 11.3.x to 11.3.29.
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| ***Consequences if not approved:*** | 1. How to initiate PC5 ProSe direct link modification procedures for updating derived PC5 QoS rules with individual 5G ProSe layer-3 remote UE upon QoS flow setup by SMF is not clear.
2. The PC5 QoS rules IE stays with incorrect reference value.
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| ***Clauses affected:*** | 8.2.6.3.2, 10.3.2.1 |
|  |  |
|  | **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 1st Change \* \* \* \*

8.2.6.3.2 QoS flows handling initiated by the network

For QoS flows setup initiated by the network, upon reception QoS rules and QoS flow level QoS parameters from the SMF, the 5G ProSe layer-3 UE-to-network relay UE:

a) shall determine the PQI based on the QoS mapping rules configured in clause 5.2.5;

b) shall set the GFBR value for the PC5 GBR QoS flow to the GFBR value from the SMF, if any;

c) shall set the MFBR value for the PC5 GBR QoS flow to the MFBR value from the SMF, if any;

d) shall set the averaging window value for the PC5 GBR QoS flow to the averaging value from the SMF, if any;

e) may derive the packet filter(s) used for PC5 QoS rule(s) from the packet filter(s) used over Uu reference; and

f) may initiate the 5G ProSe direct link modification procedure(s) as defined in clause 7.2.3 to either update the existing PC5 QoS flow or to set up a new PC5 QoS flow. The 5G ProSe layer-3 UE-to-network relay UE may include the PC5 QoS rule(s) when initiating the 5G ProSe direct link modification procedure toward a 5G ProSe layer-3 remote UE for which the IP address associated to the 5G ProSe layer-3 remote UE is included in the packet filter(s) used over Uu.

Alternatively, for dynamic QoS handling of 5G ProSe layer-3 remote UE using reflective QoS mechanism, upon the 5G ProSe layer-3 UE-to-network relay UE receiving a downlink user data packet along with the Reflective QoS Indication (RQI) as specified in 3GPP TS 24.501 [11], the 5G ProSe layer-3 UE-to-network relay UE:

a) creates a derived QoS rule by reflective QoS in the UE as specified in clause 6.2.5.1.4, 3GPP TS 24.501 [11];

b) shall create a new derived PC5 QoS rule or update the existing derived PC5 QoS rule for the PC5 QoS flow based on the derived QoS rule from a);

c) shall determine the corresponding PQI for the PC5 QoS flow based on the QoS mapping rules as specified in clause 5.2.5 and the 5QI value that corresponds to the QFI of the QoS rule from b);

d) shall perform one of the following:

1) if there is a PC5 QoS flow with the determined PQI, the 5G ProSe layer-3 UE-to-network relay UE shall perform the 5G ProSe direct link modification procedure as specified in clause 7.2.3 to associate the ProSe application on the existing PC5 QoS flow. The 5G ProSe layer-3 UE-to-network relay UE may include the PC5 QoS rule(s) associated with the updated PC5 QoS flow; or

2) if there is no PC5 QoS flow with the determined PQI, the 5G ProSe layer-3 UE-to-network relay UE shall perform the 5G ProSe direct link modification procedure as specified in clause 7.2.3 to add a new PC5 QoS flow with the determined PQI and associate the ProSe application on the new PC5 QoS flow. The 5G ProSe layer-3 UE-to-network relay UE may include the PC5 QoS rule(s) associated with the newly added PC5 QoS flow.

When a derived QoS rule is deleted, the 5G ProSe layer-3 UE-to-network relay UE performs the 5G ProSe direct link modification procedure as specified in clause 7.2.3 to associate the ProSe application with a PC5 QoS flow such that the determined PQI maps to the 5QI of the signaled QoS rule.

\* \* \* Start of 2nd Change \* \* \* \*

10.3.2.1 Message definition

This message is sent by a UE to another peer UE to accept the received PROSE DIRECT LINK ESTABLISHMENT REQUEST message. See table 10.3.2.1.1.

Message type: PROSE DIRECT LINK ESTABLISHMENT ACCEPT

Significance: dual

Direction: UE to peer UE

**Table 10.3.2.1.1: PROSE DIRECT LINK ESTABLISHMENT ACCEPT message content**

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| **IEI** | **Information Element** | **Type/Reference** | **Presence** | **Format** | **Length** |
|  | PROSE DIRECT LINK ESTABLISHMENT ACCEPT message identity | ProSe PC5 signalling message type11.3.1 | M | V | 1 |
|  | Sequence number | Sequence number11.3.2 | M | V | 1 |
|  | Source user info | Application layer ID11.3.4 | M | LV | 2-256 |
|  | Configuration of UE PC5 unicast user plane security protection | Configuration of UE PC5 unicast user plane security protection11.3.23 | M | V | 1 |
| 79 | QoS flow descriptions | PC5 QoS flow descriptions11.3.5 | O | TLV-E | 6-65538 |
| 7C | QoS rules | PC5 QoS rules11.3.29 | O | TLV-E | 7-65538 |
| 62 | IP address configuration | IP address configuration11.3.6 | O | TV | 2 |
| 61 | Target link local IPv6 address  | Link local IPv6 address11.3.7 | O | TV | 17 |

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