**3GPP TSG-CT WG3 Meeting #108-eC3-201107**

**E-Meeting, 19th – 28th February 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.513** | **CR** | **0109** | **rev** | **<Rev#>** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Binding mechanism update for V2X | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eV2XARC | | | | |  | ***Date:*** | | | 2020-02-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
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| ***Reason for change:*** | | QoS Flow Binding needs to be considered for the case that a PCC Rule includes Alternative QoS Parameter Set(s). (S2-2001690) | | | | | | | | |
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| ***Summary of change:*** | | The following changes are proposed:   * Extend binding parameters with the Alternative QoS Parameter Sets, so that PCC Rules with or without Alternative QoS Parameter Sets are bound to different QoS flows even if the other binding parameters in the PCC rules are the same. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unclear QoS Flow Binding mechanism related to Alternative QoS Parameter Sets. | | | | | | | | |
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| ***Clauses affected:*** | | 6.4 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 23.503 ... CR#0390 | | |
| ***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 \* \* \* \*

## 6.4 QoS flow binding

The QoS flow binding is the association of the PCC rule to a QoS flow, identified by the QFI, within a PDU session.

The QoS flow binding function resides in the SMF. The binding is performed using the following binding parameters:

- 5QI;

- ARP;

- QNC (if available in the PCC rule);

- Priority Level (if available in the PCC rule);

- Averaging Window (if available in the PCC rule);

- Maximum Data Burst Volume (if available in the PCC rule); and

- Alternative QoS Parameter Set(s) (if available in the PCC rule).

For a PCC rule including Alternative QoS Parameter Set(s), if a QoS flow exists with QoS parameters identical to the binding parameters for the PCC rule other than Alternative QoS Parameter Set(s) not identical to the Alternative QoS Parameter Set(s) for the PCC rule, the PCC rule is not bound to the existing QoS flow but to a new QoS flow.

The selected QoS flow shall have the same above binding parameters as the one indicated by the PCC rule. The set of 5G QoS parameters assigned by the PCF to the service data flow is the main input for QFI allocation.

When the QoS data decision which the PCC rule refers to includes the "defQosFlowIndication" attribute set to true as defined in subclause 4.2.6.2.10 of 3GPP TS 29.512 [9], the SMF shall bind the PCC rule to the default QoS flow as long as the "defQosFlowIndication" attribute set to true .

If the "defQosFlowIndication" attribute has not been received before during the lifetime of the PCC rule or the "defQosFlowIndication" attribute has been received but set to false (as defined in subclause 4.2.6.2.10 of 3GPP TS 29.512 [9]), the SMF shall evaluate whether a QoS flow with the same binding parameters combination exists. If a QoS flow with the same binding parameters combination exists, the SMF allocates the same QFI to the service data flows that are assigned for the same values of the binding parameters. If no QoS flow exists, the SMF assigns a QFI for a new QoS flow, derives the QoS parameters for a new QoS flow, using authorized QoS in the PCC rule, and binds the PCC rule to the QoS flow.

NOTE 1: For non-GBR QoS flows, and when standardized 5QIs or pre-configured 5QIs are used, the 5QI value can be used as the QFI of the QoS flow. However, the pre-configured 5QI values cannot be used when the UE is roaming.

NOTE 2: For an unstructured PDU session, there is maximum one QoS flow.

NOTE 3: For PCC rules containing a delay critical GBR 5QI value, the SMF can bind PCC Rules with the same binding parameters to different QoS Flows to ensure that the GFBR of the QoS Flow can be achieved with the Maximum Data Burst Volume of the QoS Flow.

The PCF shall supply the PCC rules to be installed, modified, or removed to the SMF. The SMF shall evaluate whether it is possible to use one of the existing QoS flows or not, and if applicable.

If the PCF has previously indicated to the SMF that a PCC rule shall be bound to the default QoS flow by including the "defQosFlowIndication" attribute set to true within the QoS data decision which the PCC rule refers to, but the PCF updates the QoS data decision by including the "defQosFlowIndication" attribute set to false as defined in subclause 4.2.6.2.10 of 3GPP TS 29.512 [9], the SMF shall create the binding between service data flow(s) and the QoS flow which have the same binding parameters.

If the PCC rule is corresponding to the QoS rule requested by the UE as defined in subclause 4.2.4.17 of 3GPP TS 29.512 [9] and a Segregation bit is set as defined in Table 9.11.4.13.1 of 3GPP TS 24.501 [33] in the request from the UE, the SMF should abide by the UE request and bind the PCC rule on a distinct and dedicated QoS Flow e.g. even if an existing QoS Flow can support the requested QoS, but is still allowed to proceed instead with binding the selected SDF(s) on an existing QoS Flow.

If the PCC rule is removed, the SMF shall remove the association of the PCC rule to the QoS flow. Whenever the authorized QoS of a PCC rule changes, the existing QFI allocation shall be re-evaluated, i.e. the allocation procedure, is performed. The re-evaluation may, for a service data flow, require a new binding with another QoS flow.

NOTE 4: A QoS change of the default 5QI/ARP values doesn't cause the QoS flow rebinding for PCC rules previously bound to the QoS flow associated with the default QoS rule, with the "defQosFlowIndication" attribute set to true.

When a QoS flow is removed the SMF shall report to the PCF that the PCC rules bound to the corresponding QoS flow are removed.

\* \* \* \* end of change \* \* \* \*