**3GPP TSG-CT WG3 Meeting #108-eC3-201090**

[**E-Meeting**](https://www.3gpp.org/ftp/tsg_ct/WG3_interworking_ex-CN3/TSGC3_108_Sophia_Antipolis/)**, 19th -28th February 2020 (Revision of C3-200xyz)**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.512** | **CR** | 0407 | **rev** | **-** | **Current version:** | **16.3.0** |  |
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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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | UE initiated resource modification correction |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | en5GPccSer  |  | ***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 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:*** | In the current procedure, the UE can request to create a QoS rule, modify a QoS rule with by adding packet filter(s), replacing the packet filter(s), delete packet filter(s) and modify the QoS rule by updating the QoS parameters. But current descriptions make a confusion that the UE can request to modify a QoS rule deriving from the a PCC rule originally created by the network, i.e. not created as a result of UE-initiated resource allocation.In the EPS system, the packet filter id within the packet filter information is assigned by the PCRF as a result of UE-initiated resource allocation. The PCEF requests to modify the packet filter by providing the assigned packet filter id when the PCEF receives the request from the UE. So it is clear that UE can only request to modify the PCC rule created by the PCRF as a result of UE-initiated resource allocation.From the scenario point of view, for a PCC rule created by the PCF based on the configuration or the trigger from the application layer, it will be updated based on the update of configuration or the update from the application layer. It will be more complicated to support that UE can request to modify the packet filter original created by the network.  |
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| ***Summary of change:*** | Clarify that the UE only can request to modify the QoS rule created as a result of the UE-initiated resource modification.Clarify for PCC rules created as a result of UE-initiated resource modification, the packet filter identifier is assigned by the PCF and is unique per UE and PCF instance. |
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| ***Consequences if not approved:*** | The UE can request to modify a QoS rule deriving from the a PCC rule originally created by the network. The procedures will be mismatched between the bearer level and application level.  |
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| ***Clauses affected:*** | 4.2.4.17, 5.6.2.30 |
|  |  |
|  | **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 does not impact the OpenAPI file. |
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| ***This CR's revision history:*** |  |

\*\*\* 1st Change \*\*\*

#### 4.2.4.17 UE initiates a resource modification support

In the case that the UE initiates a resource modification procedure as defined in subclause 6.4.2.2 of 3GPP 3GPP TS 24.501 [20], the SMF shall within the SmPolicyUpdateContextData data structure include the "RES\_MO\_RE" within the "repPolicyCtrlReqTriggers" attribute and shall include the UE request of specific QoS handling for selected SDF within the "ueInitResReq" attribute. Within the UeInitiatedResourceRequest data structure, the SMF shall included the "packOp" attribute, "packFiltInfo" attribute and "reqQos" attribute if applicable as follows:

- When the UE requests to "Create new QoS rule", the SMF shall include the "ruleOp" attribute set to "CREATE\_ PCC \_RULE ", the "packFiltInfo" attribute and "reqQos" attribute containing the requested QoS for the new PCC rule. Each PacketFilterInfo instance shall contain one packet filters requested for creating the new QoS rule. If the PCF authorizes the request, the PCF shall create a new PCC rule by including the new packet filters within the service data flow template of the PCC rule. When the SMF received the PCC rule, the SMF shall derive the QoS rule based on the PCC rule, assign a new QoS rule identifier within the PDU session for the QoS rule. The SMF shall keep the mapping between the PCC rule identifier and the QoS rule identifier;

- When the UE requests to "Modify existing QoS rule and add packet filters" for the QoS rule created as a result of the UE-initiated resource modification, SMF shall include the "ruleOp" attribute set to "MODIFY\_PCC\_RULE\_AND\_ADD\_PACKET\_FILTERS", the "pccRuleId" attribute including the PCC rule identifier corresponding the QoS rule identifier and the "packFiltInfo" attribute. Each PacketFilterInfo instance shall contain one packet filters requested for addition to this QoS Rule. If the UE request includes the modified QoS information the SMF shall also include the "reqQos" attribute to indicate the updated QoS for the affected PCC rule(s). If the PCF authorizes the request, the PCF shall update the PCC rule by adding the new packet filters to the service data flow template of the PCC rule.

- When the UE requests to "Modify existing QoS rule and replace all packet filters" for the QoS rule created as a result of the UE-initiated resource modification, SMF shall include the "ruleOp" attribute set to "MODIFY\_ PCC \_RULE\_AND\_REPLACE\_PACKET\_FILTERS", the "pccRuleId" attribute including the PCC rule identifier corresponding the QoS rule identifier and the "packFiltInfo" attribute. Each PacketFilterInfo instance shall contain one packet filters requested for addition to this QoS Rule. If the UE request includes the modified QoS information the SMF shall also include the "reqQos" attribute to indicate the updated QoS for the affected PCC rule. If the PCF authorizes the request, the PCF shall update PCC rule by replacing the all existing packet filters within the service data flow template of the PCC rule with the new packet fitler(s).

- When the UE requests to "Modify existing QoS rule and delete packet filters" for the QoS rule created as a result of the UE-initiated resource modification, SMF shall include the "ruleOp" attribute set to "MODIFY\_ PCC \_RULE\_AND\_DELETE\_PACKET\_FILTERS", the "pccRuleId" attribute including the PCC rule identifier corresponding the QoS rule identifier and the "packFiltInfo" attribute. Each PacketFilterInfo instance shall within the "packFiltId" attribute include the removed packet fitler identifier assigned by the PCF corresponding to the packet fitler identifier received from the UE. If the UE request includes modified QoS information the SMF shall also include the "reqQos" attribute to indicate the updated QoS for the affected PCC rule(s). If the PCF authorizes the request, the PCF shall update PCC rule by removing the correspoding packet filters from the service data flow template of the PCC rule.

- When the UE requests to "Modify existing QoS rule without modifying packet filters" for the QoS rule created as a result of the UE-initiated resource modification, SMF shall include the "ruleOp" attribute set to "MODIFY\_PCC\_RULE\_WITHOUT\_MODIFY\_PACKET\_FILTERS", the "pccRuleId" attribute including the PCC rule identifier corresponding the QoS rule identifier, the "packFiltInfo" attribute and the modified QoS information within the "reqQos" attribute. The "packFiltInfo" attribute shall include one PacketFilterInfo instance which includes any packet filter identifier assigned by the PCF for the PCC rule within the "packFiltId" attribute.

- When the UE requests to "Delete existing QoS rule" for the QoS rule created as a result of the UE-initiated resource modification, the SMF shall include the "ruleOp" attribute set to "DELETION\_PCC\_RULE", the "pccRuleId" attribute including the PCC rule identifier corresponding the QoS rule identifier and the "packFiltInfo" attribute. The "packFiltInfo" attribute shall include one PacketFilterInfo instance which includes any packet filter identifier assigned by the PCF for the PCC rule within the "packFiltId" attribute.The PCF shall remove the PCC rule when the PCF receives the request according to the PCC rule identifier.

The SMF shall calculate the requested GBR, for a GBR 5QI, as the sum of the previously authorized GBR for the affected PCC rule, corresponding to the QoS rule, adjusted with the difference between the requested GBR for the QoS flow and previously negotiated GBR for the QoS flow. For the UE request to create a new QoS Rule, the GBR as requested by the UE for the QoS rule shall be used.

If the request covers all the PCC rules with a QoS flow binding to the same QoS flow, then the SMF may request a change to the 5QI for existing PCC rules.

For the purpose of creating or modifying a QoS rule with adding, replacing and modifying packet filter, within the UeInitiatedResourceRequest instance, the SMF shall include the precedence information of the QoS rule within the "precedence" attribute, and within each PacketFilterInfo instance, the SMF shall include the "packFiltCont" attribute, "tosTrafficClass" attribute, "spi" attribute, "flowLabel" attribute and "flowDirection" attribute set to the value(s) describing the packet filter provided by the UE.

NOTE: The UE signalling with the network is governed by the applicable NAS signalling TS. The NAS 3GPP TS for a specific access may restrict the UE possibilities to make requests compared to what is stated above.

If the PCF authorizes the request from the UE, the PCF shall construct a PCC rule(s) based on the UeInitiatedResourceRequest data structure. For the request to add the filter(s), the PCF shall within the FlowInformation data structure include the assigned packet filter identifier within the "packFiltId" attribute. When the SMF derives the QoS based on the PCC rule, the SMF shall assign a new packet filter identifier for each added packet fitler within the QoS rule and keep the mapping between the packet filter identifier for the packet fitler within the PCC rule and QoS rule.

The PCF shall perform the QoS authorization for the new created or modified PCC rules if requested by the UE as defined in subclause 4.2.6.6.2.

If the PCF detects that the packet filters in the request for new PCC rules received from the SMF is covered by the packet filters of outstanding PCC rules that the PCF is provisioning to the SMF, the PCF may reject the request and indicate the casue for the rejection including the "cause" attribute of the ProblemDetails data structure set to "ERROR\_CONFLICTING\_REQUEST" in an HTTP "403 Forbidden" response message. If the SMF receives a response message with this code, the SMF shall reject the PDU session modification that initiated the HTTP request.

If the PCF does not accept one or more of the traffic mapping filters provided by the SMF in an HTTP Request (e.g. because the PCF does not allow the UE to request enhanced QoS for services not known to the PCF), the PCF shall reject the request and indicate the cause for the rejection including the "cause" attribute of the ProblemDetails data structure set to "ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED" in an HTTP "403 Forbidden" response message. If the SMF receives an HTTP response with this code, the SMF shall reject the PDU session modification that initiated the HTTP request.

The PCF shall not combine a rejection with provisioning of PCC rule operations in the same HTTP response.

\*\*\* 1st Change \*\*\*

#### 5.6.2.30 Type PacketFilterInfo

Table 5.6.2.30-1: Definition of type PacketFilterInfo

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| --- | --- | --- | --- | --- | --- |
|  Attribute name | Data type | P | Cardinality | Description | Applicability |
| packFiltId | string | O | 0..1 | An identifier of packet filter. For PCC rules created as a result of UE-initiated resource modification, the packet filter identifier is assigned by the PCF and is unique per UE and PCF instance. |  |
| packFiltCont | PacketFilterContent | O | 0..1 | Contains the content of the packet filter as requested by the UE and required by the PCF to create the PCC rules. |  |
| tosTrafficClass | string | O | 0..1 | Contains the Ipv4 Type-of-Service and mask field or the Ipv6 Traffic-Class field and mask field. |  |
| spi | string | O | 0..1 | The security parameter index of the IPSec packet. |  |
| flowLabel | string | O | 0..1 | The Ipv6 flow label header field. |  |
| flowDirection | FlowDirection | O | 0..1 | Indicates the direction/directions that a filter is applicable, downlink only, uplink only or both down- and uplink (bidirectional). |  |

\*\*\* End of Change \*\*\*