**3GPP TSG CT WG3 Meeting #135 *C3-243118***

**Hyderabad, IN, 27 - 31 May, 2024 (Revision of C3-243xxx)**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.543** | **CR** | **0005** | **rev** | **-** | **Current version:** | **18.0.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Addition of PDTQ policies Delete service operation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AIMLsys | | | | |  | ***Date:*** | | | 2024-05-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | At present create/notify/update services are defined for PDTQ policies. But delete service is not defined. So, there is no way to delete the PDTQ policy from PCF via API.  To address this issue, addition of Npcf\_PDTQPolicyControl\_Delete service is needed. | | | | | | | | |
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| ***Summary of change:*** | | The following changes are proposed.   1. Npcf\_PDTQPolicyControl\_Delete API shall be added 2. Make the corresponding API changes. | | | | | | | | |
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| ***Consequences if not approved:*** | | PDTQ policies can not be deleted gracefully using API which may lead to resources leak in PCF. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.2.2.2. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 introduces backward compatible feature to the OpenAPI definition of the Npcf\_PDTQPolicyControl API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

##### 5.2.2.2.2 Retrieval of PDTQ policies

This procedure is used by the NF service consumer to request PDTQ policies from the PCF, as defined in 3GPP TS 23.501 [2], 3GPP TS 23.502 [3] and 3GPP TS 23.503 [14].

Figure 5.2.2.2.2-1 illustrates retrieval of PDTQ policies.



Figure 5.2.2.2.2-1: Retrieval of PDTQ policies

In order to get PDTQ policies, the NF service consumer shall invoke the Npcf\_PDTQPolicyControl\_Create service operation by sending an HTTP POST request to the URI representing a "PDTQ policies" collection resource of the PCF (as shown in figure 5.2.2.2.2-1, step 1). The NF service consumer shall include in a body of the HTTP POST request a PdtqPolicyData data type which shall contain:

a) an ASP identifier in the "aspId" attribute;

b) an expected number of UEs in the "numOfUes" attribute;

c) a list of desired time windows in the "desTimeInts" attribute;

d) requested QoS requirements provided as a QoS Reference in the "qosReference" attribute or as a QoS parameter set in the "qosParamSet" attribute that shall contain one or more of the following individual QoS parameters:

1) Priority Level in the "priorLevel" attribute;

2) Maximum Burst Size:

A) if the Maximum Burst Size value is greater than 4095 Bytes in the "extMaxBurstSize" attribute; or

B) if the Maximum Burst Size value is lower than or equal to 4095 Bytes in the "maxBurstSize" attribute;

3) 5GS Delay in the "pdb" attribute;

4) Maximum Bitrate in downlink and/or uplink directions in the "maxBitRateDl" and/or "maxBitRateUl" attributes;

5) Guaranteed Flow Bitrate in downlink and/or uplink directions in the "gfbrDl" and/or "gfbrUl" attributes; and

6) Packet Error Rate in the "per" attribute,

and may contain:

a) a network area information (e.g. list of TAIs and/or list of NG-RAN nodes and/or list of cells identifiers) in the "nwAreaInfo" attribute;

b) an application identifier in the "appId" attribute;

c) a DNN corresponding to the ASP identifier, in the "dnn" attribute;

d) an S-NSSAI corresponding to the ASP identifier, in the "snssai" attribute;

e) alternative service requirements provided as:

1) one or more alternative QoS References in a prioritized order in the "altQosRefs" attribute; or

2) one or more alternative QoS Parameter Sets in a prioritized order in the "altQosParamSets" attribute which shall contain one or more of the following individual QoS parameters:

A) 5GS Delay in the "pdb" attribute;

B) Guaranteed Flow Bitrate in downlink and/or uplink directions in the "gfbrDl" and/or "gfbrUl" attributes; and

C) Packet Error Rate in the "per" attribute; and

f) a notification URI in the "notifUri" attribute and a request to enable a PDTQ warning notification for the planned data transfer with QoS requirements in the "warnNotifReq" attribute.

NOTE 1: The PCF can be configured to map the ASP identifier to a target DNN and S-NSSAI if the NF service consumer did not provide the DNN, S-NSSAI to the PCF.

Upon the reception of the HTTP POST request from the NF service consumer indicating a PDTQ policies request, the PCF:

a) shall invoke the Nudr\_DataRepository\_Query service operation, as described in 3GPP TS 29.504 [16] and 3GPP TS 29.519 [17], to request from the UDR all existing PDTQ policies;

b) may invoke the Nnwdaf\_EventsSubscription\_Subscribe service operation and/or the Nnwdaf\_AnalyticsInfo\_Request service operation as described in 3GPP TS 29.520 [18], to get from the NWDAF the Network Performance analytics or the DN Performance analytics;

NOTE 2: Whether the PCF subscribes to Network Performance analytics or DN Performance analytics is based on PCF configuration.

c) shall determine one or more acceptable PDTQ policy based on:

1) information provided by the NF service consumer; and

2) other available information (e.g. the network analytics related to "Network Performance" or "DN Performance", the existing PDTQ policies, the network policy);

d) shall create a PDTQ Reference ID;

e) shall send to the NF service consumer a "201 Created" response to the HTTP POST request, as shown in figure 5.2.2.2.2-1, step 2. The PCF shall include in the "201 Created" response a Location header field containing the URI of the created "Individual PDTQ policy" resource, and the response body with a PdtqPolicyData data type which shall contain:

1) acceptable PDTQ policy/ies in the "pdtqPolicies" attribute. For each included PDTQ policy, the PCF shall provide:

A) an identity of a PDTQ policy represented as an integer value greater than zero in the "pdtqPolicyId" attribute; and

B) recommended time window in the "recTimeInt" attribute; and

2) the PDTQ Reference ID in the "pdtqRefId" attribute; or

f) if the PCF cannot successfully fulfil the received HTTP POST request due to the internal PCF error or due to the error in the HTTP POST request, shall send the HTTP error response as specified in clause 6.1.7.

If the PCF included in the PdtqPolicyData data type:

- more than one PDTQ policy, the PCF shall wait for an indication about selected PDTQ policy from the NF service consumer as described in clause 5.2.2.3.2; or

- only one PDTQ policy, the PCF shall invoke the Nudr\_DataRepository\_Update service operation, as described in 3GPP TS 29.504 [16] and 3GPP TS 29.519 [17], to update the UDR with the selected PDTQ policy, the corresponding PDTQ Reference ID, the expected number of UEs, the list of desired time windows, the QoS Reference or individual QoS parameters, whether the AF accepts PDTQ policy renegotiation and, if available, the network area information and the alternative service requirements listed in a prioritized order for the provided ASP identifier.

NOTE 3: In case of only one PDTQ policy, PDTQ Policy Control service may be deleted when "recTimeInt" attribute with the maximum timestamp value within "pdtqPolicies" attribute is reached.

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