**3GPP TSG-WG SA4 Meeting # 108-eS4-200542**

E-Meeting, 6th -10th April 2020

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| *CR-For v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | 26.512 | **CR** |  | **rev** | 0 | **Current version:** | 1.0.1 |  |
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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 | **x** |

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| ***Title:*** | Dynamic Policy Configuration Procedures | | | | | | | | | |
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| ***Source to WG:*** | Qualcomm Inc. | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GMS3 | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | The external application provider configures a set of dyamic policy templates that may be applied to the streaming sessions offered by it. It defines these as a set of operation points for the service, each of which with corresponding QoS requirements and charging configurations. These policies are also shared with the Session Handler on the UE to assist the client with the selection of the proper operation point. This CR defines the Policy Template resource and the operations that are performed over the M1d/M1u. | | | | | | | | |
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| ***Summary of change:*** | | This CR defines the policy template configuration API that is offered for the provisioning of downlink and uplink streaming session. | | | | | | | | |
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| ***Consequences if not approved:*** | | The stage 3 solution will be incomplete. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.4, 5.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| **First Change** |

### 4.2.4 Dynamic Policy Configuration procedures

### 4.2.4.1 General

These procedures are used by the 5GMSd Application Provider to configure the policy templates for streaming sessions of this provisioning session.

### 4.2.4.2 Create Policy Template

This procedure is used by the 5GMSd/5GMSu Application Provider to create a new Policy Template. The Application Provider shall use the HTTP POST method for this purpose.

Since Policy Templates require MNO verification, a Policy Template that is newly created cannot be used immediately. Upon creation, a Policy Template shall be in the state unverified. Once it has been validated by the MNO, it shall take the ready state, indicating that it may be applied to streaming sessions. Finally, a Policy Template may be suspended by the MNO, e.g. in case of a violation of the usage terms or for some other reasons, which renders it unusable. The 5GMSd/5GMSu AF shall verify the status of a Policy Template prior to using it.

If the procedure is successful, the 5GMSd/5GMSu AF shall generate a resource identifier to uniquely identify the newly created Policy Template. In that case, it shall respond with a 201 (Created) HTTP response message and provide the URL to the newly created resource in the Location header field.

### 4.2.4.3 Read Policy Template

This procedure is used by the 5GMSd/5GMSu Application Provider and other 5GMSd/5GMSu AFs to query the properties of an existing Policy Template resource from the 5GMSd/5GMSu AF. The HTTP GET method shall be used for this purpose.

If the procedure is successful, the 5GMSd/5GMSu AF shall respond with a 200 (OK) response that includes the Policy Template in the response message body.

### 4.2.4.4 Update Policy Template

The update operation is invoked by the 5GMSd/5GMSu Application Provider to modify the properties of an existing Policy Template. All available properties except state may be updated. The HTTP PATCH or HTTP PUT methods shall be used for the update operation.

Note that the update may potentially cause the change of the Policy Template into the “unverified” state, which makes it temporarily unusable.

If the procedure is successful, the 5GMSd/5GMSu AF shall respond with a 200 (OK) response message that includes the Policy Template in the response message body.

### 4.2.4.5 Delete Policy Template

This operation is used by the 5GMSd/5GMSu Application Provider to destroy a Policy Template resource. The HTTP DELETE method shall be used for this purpose. As a result, the 5GMSd/5GMSu AF will remove the Policy Template from any Provisioning Sessions that reference it, and any currently active streaming sessions using the destroyed Policy Template will be migrated to a different Policy Template allowed by the same Provisioning Session (if any exists).

If the procedure is successful, the 5GMSd/5GMSu AF shall respond with a 200 (OK) response message.

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| **Second Change** |

### 5.5 Policy Template API

### 5.5.1 Overview

The 5GS offers network assistance to multimedia sessions for which provisioning has been performed using the procedures at interface M1d specified in clause 4.2. A new media streaming session is detected by the Session Handler, which in turn will intiate a network assistance session with the Assistance 5GMSd AF over the M5d interface.

A Policy Template provides a description of a set of Operation Points and their respective QoS and charging requirements. The Policy Template is configured as part of the Provisioning procedures with the 5GMSd AF and information about the configured Policy Templates are shared with the Network Assistance 5GMSd AFs.

### 5.5.2 Data Model

The Policy Template resource is defined according Table 5.5.2‑1 below:

Table 5.5.2-1: Definition of PolicyTemplate resource

|  |  |  |  |
| --- | --- | --- | --- |
| Property | Type | Cardinality | Description |
| policyTemplateId | Integer | 1..1 | Unique identifier of this Policy Template. |
| state | Enumeration of Strings | 1..1 | A Policy Template may be in the ready, unverified, or suspended state.  Only a Policy Template in the ready state may be applied to streaming sessions. |
| OperationPoints | [Object] | 1..n |  |
| operationPointId | Integer | 1..1 | Unique identifier for the current Operation Point. |
| QoSSpecification | Object | 0..1 | Specifies the network quality of service to be applied to streaming sessions at this Operation Point. |
| maximumGuaranteedBitRate | Integer | 1..1 | The maximum guaranteed bit rate for this Operation Point. Traffic that exceeds this maximum will be shaped, which may result in excessive delays and packet drops.  Note that this implies that the guaranteed bit rate is the same as the MBR for streaming sessions conditioned by this Operation Point. |
| averagingWindow | Integer | 1..1 | The period, expressed in milliseconds, over which the maximumGuaranteedBitRate value is averaged. |
| maximumBurst | Integer | 1..1 | The maximum traffic burst, measured in bytes, that is allowed for streaming sessions to which this Operation Point applies. |
| burstAveragingWindow | Integer | 1..1 | The period, expressed in milliseconds, over which traffic bursts are averaged.  This value is typically an order of magnitude smaller than averagingWindow and is intended to allow for short-lived bursts in the traffic. |
| RouteSelection | Object | 1..1 | Specifies how streaming session traffic is to be identified and filtered. |
| nssai | Integer | 1..1 | Identifies the network slice to which matching streaming sessions are to be assigned. |
| dnn | String | 1..1 | Data Network Name to be used for streaming sessions at this Operation Point. |
| TrafficDescriptor | Object | 1..1 | Contains information about the Traffic Descriptors that are used to identify and filter the traffic.  The Traffic Descriptor shall be formatted as described in clause 6.6.2.1-2 of TS 23.503. |
| Charging | Object | 0..1 | Provides information about the charging policy to be used for this Operation Point. |
| sponsorIdentifier | String | 1..1 | Identifies the provider of the sponsored data connection, as defined in TS 23.203 [X]. |

### 5.5.3 Resource structure

The Policy Template API is accessible through this URL paths:

{apiRoot}/3gpp-m1d/v1/provisioning/{provisioning-subresource}

The following operations and the corresponding HTTP methods are supported. In each case, the sub-resource path specified in the second column shall be substituted into {provisioning-subresource} in the above URI template:

|  |  |  |  |
| --- | --- | --- | --- |
| Operation | Sub‑resource path | Allowed HTTP method(s) | Description |
| Create a new Policy Template | policy-templates | POST | This is used to create a new Policy Template resource. |
| Fetch a Policy Template | policy-templates/{policy-template-id} | GET | This operation is used to retrieve an existing Policy Template resource. |
| Update a Policy Template | policy-templates/{policy-template-id} | PUT,  PATCH | This operation is used to modify the configuration of an existing Policy Template. |
| Delete a Policy Template | policy-templates/{policy-template-id} | DELETE | This operation is used to delete an existing Policy Template resource. |