**3GPP TSG-CT WG3 Meeting #113eC3-210163\_r1**

**E-Meeting, 25th – 29th January 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **29.512** | **CR** | **0674** | **rev** | **-** | **Current version:** | **16.7.0** |  |
|  |
| *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:***  | Correction to "resourceUri" attribute description |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | C3 |
|  |  |
| ***Work item code:*** | 5G\_eSBA |  | ***Date:*** | 2021-01-07 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | [Reply LS on support of stateless NF](https://www.3gpp.org/ftp/tsg_ct/WG3_interworking_ex-CN3/TSGC3_112e/Docs/C3-205495.zip), in the answer covering the change of NF service producer, indicates that it is not required the NFsp includes the new resource URI in the notification requests: “*Most APIs do not support sending a notification request including a new (subscription) resource URI, and the above mechanisms were deemed sufficient. Accordingly, this option was removed from clause 6.5.3.3 of TS 29.500.*”In this API, this implies that for the notification request, the resource URI value included within the "resourceUri" attribute in the SmPolicyNotification data type either:* remains unchanged during the lifetime of the SM Policy Association resource despite the actual location of the resource, the actual resource URI, changes because of change of NF service producer; or
* It changes when the PCF (service) instance changes, without indicating it is a new resource URI.

TS 29.500, 6.5.3.3 specifies that in case the NF (service) instance changes, only the apiRoot of the resource URI actually changes.To avoid misinterpretations and faulty implementations, the description of the "resourceUri" attribute needs to be updated, to indicate it identifies an individual SM policy resource where the apiRoot of the resource URI is ignored.  |
|  |  |
| ***Summary of change:*** | Update of the clauses 4.2.3.2, 4.2.3.3, 5.6.2.5 and 5.6.2.21 to indicate that the "resourceUri" attribute identifies an individual SM policy association resource and the apiRoot of the resource URI cannot be used by the SMF to identify the Individual SM resource that triggered the notification. |
|  |  |
| ***Consequences if not approved:*** | Incorrect specification that leads to misinterpretations and implementation mistakes. |
|  |  |
| ***Clauses affected:*** | 4.2.3.2, 4.2.3.3, 5.6.2.5, 5.6.2.21 |
|  |  |
|  | **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. |
|  |  |
| ***This CR's revision history:*** |  |

**Additional discussion(if needed):**

**…**

**Proposed changes:**

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

#### 4.2.3.2 SM Policy Association Update request



Figure 4.2.3.2-1: SM Policy Association Update request

The PCF may decide to provision policies related to an Individual SM Policy resource without obtaining a request from the SMF, e.g. in response to information provided to the PCF via the Rx or N5 reference point, or in response to an internal trigger within the PCF. The PCF shall send a POST request to the NF Service Consumer (SMF) (../{notificationUri}/update). The payload body of the message shall contain an SmPolicyNotification data structure that contains:

- the representation of the updated policies within the "smPolicyDecision" attribute; and

- the Individual SM Policy resource identifier within the "resourceUri" attribute.

NOTE: The apiSpecificResourceUriPart (see subclause 5.1) of the resource URI included "resourceUri" attribute is the part of the resource URI that remains unchanged during the Individual SM Policy resource lifetime, and therefore can be used by the SMF to identify the PDU session related to the updated Individual SM Policy resource. The apiRoot of the resource URI could change and cannot be used with this purpose.

Detailed procedures related to the provisioning and enforcement of the policy decisions within the SmPolicyDecision data structure are contained in subclause 4.2.6.

In case of a successful update of SM policies:

- if the PCF provisioned the policy control request triggers related to access type change, RAT change or location change, a "200 OK" response code and a response body with the corresponding available information in the "UeCampingRep" data structure shall be returned in the response;

- otherwise, a "204 No Content" response code shall be returned in the response.

If errors occur when processing the HTTP POST request, the SMF shall apply error handling procedures as specified in subclause 5.7.

If the SMF received one or more PCC rules from the PCF but the validation of all the PCC Rules were unsuccessful, the SMF shall reject the request and include in an HTTP "400 Bad Request" response message the ErrorReport data structure. Within the ErrorReport data structure, SMF shall include the "error" attribute containing the "cause" attribute of the ProblemDetails data structure set to "PCC\_RULE\_EVENT" or "PCC\_QOS\_FLOW\_EVENT" and the "ruleReports" attribute to report the PCC rule status of affected PCC rules as defined in subclause 4.2.3.16.

If the "SessionRuleErrorHandling" feature is supported and if the SMF received one or more PCC rules and/or session rules from the PCF but the validation of all the PCC Rules and/or session rule were unsuccessful, the SMF shall reject the request and include in an HTTP "400 Bad Request" response message the ErrorReport data structure. Within the ErrorReport data structure, SMF shall include the "error" attribute containing the "cause" attribute of the ProblemDetails data structure set to "RULE\_PERMANENT\_ERROR" or "RULE\_TEMPORARY\_ERROR" and the "ruleReports" attribute to report the PCC rule status of affected PCC rules as defined in subclause 4.2.3.16 and/or the "sessRuleReports" attribute to report the session rule status of affected session rules as defined in subclause 4.2.3.20.

If the SMF received one or more PCC rules from the PCF but the validation of some of them were unsuccessful, the SMF shall include an HTTP "200 OK" status code together with one or more RuleReport data structure(s) to report the PCC rule status of affected PCC rules as defined in subclause 4.2.3.16 in the "PartialSuccessReport" data structure included in the response message. The "failureCause" attribute of the "PartialSuccessReport" shall be set to "PCC\_RULE\_EVENT" or "PCC\_QOS\_FLOW\_EVENT".

If the "SessionRuleErrorHandling" feature is supported and if the SMF received one or more PCC rule and/or session rules from the PCF but the validation of some of them were unsuccessful, the SMF shall include an HTTP "200 OK" status code together with the "ruleReports" attribute to report the PCC rule status of affected PCC rules as defined in subclause 4.2.3.16 and/or the "sessRuleReports" attribute to report the session rule status of affected session rules as defined in subclause 4.2.3.20 in the "PartialSuccessReport" data structure included in the response message. The "failureCause" attribute of the "PartialSuccessReport" shall be set to "RULE\_PERMANENT\_ERROR" or "RULE\_TEMPORARY\_ERROR".

If the PCF provisioned policy control request triggers, the SMF may include in the "PartialSuccessReport" data structure the "ueCampingRep" attribute with the corresponding available information. When it is required to report multiple instances of the "PartialSuccessReport" data structure due to different "failureCause" values, the SMF shall use only one instance of the "PartialSuccessReport" data structure to include the ueCampingRep" attribute with the corresponding available information.

\*\*\* 2nd Change \*\*\*

#### 4.2.3.3 SM Policy Association termination request



Figure 4.2.3.3-1: SM Policy Association termination request

The PCF may request the PDU session termination and the corresponding deletion of the Individual SM policy resource in the following circumstances:

- If the PCF decides to terminate a PDU session due to an internal trigger or trigger from the UDR.

- The PCF may also decide to terminate an PDU session upon receiving POST message from the SMF (e.g. when usage quota reached).

The PCF shall send a POST request to the NF Service Consumer (SMF) (../{notificationUri}/terminate) and include the TerminationNotification data structure in the body of the HTTP POST request. Within the TerminationNotification data structure, the PCF shall include:

- the Individual SM policy resource identifier returned during resource creation in the Location header field within the "resourceUri" attribute; and

- the cause why the PCF requests the termination of the policy association encoded as "cause" attribute.

NOTE: The apiSpecificResourceUriPart (see subclause 5.1) of the resource URI included "resourceUri" attribute is the part of the resource URI that remains unchanged during the Individual SM Policy resource lifetime, and therefore can be used by the SMF to identify the PDU session related to the updated Individual SM Policy resource. The apiRoot of the resource URI could change and cannot be used with this purpose.

If the SMF accepted received POST request the SMF shall send "204 No Content" response.

After the successful processing of the HTTP POST request, the SMF shall invoke the Npcf\_SMPolicyControl\_Delete Service Operation defined in subclause 4.2.5 to terminate the policy association and initiate the procedure to terminate the PDU session as defined in 3GPP TS 29.502 [22].

If errors occur when processing the HTTP POST request, the SMF shall apply error handling procedures as specified in subclause 5.7.

\*\*\* 3rd Change \*\*\*

#### 5.6.2.5 Type SmPolicyNotification

Table 5.6.2.5-1: Definition of type SmPolicyNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| resourceUri | Uri | M | 1 | Identifies the individual SM policy resource related to the notification.(NOTE) |  |
| smPolicyDecision | SmPolicyDecision | M | 1 | Session management policy (see subclause 5.6.2.4). |  |
| NOTE: Only apiSpecificResourceUriPart (see subclause 5.1) of the resource URI included "resourceUri" attribute shall be used by the SMF for the identification of the individual SM policy resource related to the notification.  |

\*\*\* 4th Change \*\*\*

#### 5.6.2.21 Type TerminationNotification

Table 5.6.2.21-1: Definition of type TerminationNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| resourceUri | Uri | M | 1 | Identifies the individual SM policy resource related to the notification. |  |
| cause | SmPolicyAssociationReleaseCause | M | 1 | The cause why the PCF requests the termination of the policy association. |  |
| NOTE: Only apiSpecificResourceUriPart (see subclause 5.1) of the resource URI included "resourceUri" attribute shall be used by the SMF for the identification of the individual SM policy resource related to the notification. |

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