**3GPP TSG-CT WG3 Meeting #108-eC3-201088**

[**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** | | | | | | | | |
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|  | **29.512** | **CR** | **0405** | **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:*** | Correction to the policy decision data and condition data | | | | | | | | | |
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| ***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 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The PCF shall not remove a provisioned policy decision data or condition data from the SMF when the reference(s) from the PCC rule(s) or session rule(s) are still valid. The PCF may keep a policy decision data or condition data valid when the PCF removes all the PCC(s) or session rule(s) referring to the policy decision data or condition data. It can be concluded that the policy decision data or condition data can be valid if there is no any PCC rule or session rule is referring to it.  But it is not clear if the policy decision data or condition data is valid If the installation/activation of one or more new PCC rules (i.e. rules which were not previously successfully installed) fails. | | | | | | | | |
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| ***Summary of change:*** | | If the installation/activation of one or more new PCC rule(s) or session rule(s) (i.e. rules which were not previously successfully installed) fails, although the PCC rule(s) or session rule(s) is removed, the policy decision data or condition data which is referred by the failed PCC rule(s) or session rule(s) remains applicable in the SMF until the PCF removes it. | | | | | | | | |
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| ***Consequences if not approved:*** | | The PCF may provide a PCC rule or session which refers to a invalid policy decision data or condition data if the SMF removed the policy decision data or condition data when the installation/activation of one or more new PCC rule(s) or session rule(s) fails. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.6.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 doesn’t impact the OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 4.2.6.1 General

Policy Decisions are provided from the PCF to the NF service consumer (SMF) as part of the following service operations:

- the Npcf\_SMPolicyControl\_Create Service Operation described in subclause 4.2.2;

- the SM Policy Association Notification request as part of the Npcf\_SMPolicyControl\_UpdateNotify Service Operation as described in subclause 4.2.3.2; and

- the Npcf\_SMPolicyControl\_Update service operation as described in subclause 4.2.4

Policy decisions shall be encoded within the SmPolicyDecision data structure defined in subclause 5.6.2.4

Policy decisions may include:

- Session Rules as described in subclause 4.1.4.3 encoded within the "sessRules" attribute;

- PCC Rules as described in subclause 4.1.4.2 encoded within the "pccRules" attribute;

- QoS decisions as described in subclause 4.1.4.4.3 that can be referenced from PCC rules and session rules encoded within the "qosDecs" attribute;

- charging decisions as described in subclause 4.1.4.4.4 that can be referenced from PCC rules encoded within the "chgDecs" attribute;

- Traffic control decisions as described in subclause 4.1.4.4.2 that can be referenced from PCC rules encoded within the "traffContDecs" attribute;

- Usage monitoring control decisions as described in subclause 4.1.4.4.5 that can be referenced from PCC rules and session rules encoded within the "umDecs" attribute;

- Conditions that can be referenced from PCC rules and session rules encoded within the "conds" attribute;

- A reflective QoS timer;

- Policy control request triggers and applicable additional information, e.g., Revalidation Time, PRA information;

- Last requested rule data;

- Last requested usage data;

- Default charging method of the PDU session;

- Charging information;

- P-CSCF Restoration Support Indication;

- IP index information;

- Usage of QoS flow.

For the Npcf\_SMPolicyControl\_Create Service Operation, the SmPolicyDecision data structure shall contain a full description of all of policies decisions provided by the PCF for the policy association.

For the Npcf\_SMPolicyControl\_UpdateNotify service operation for the SM Policy Association Notification request and for the Npcf\_SMPolicyControl\_Update service operation, the SmPolicyDecision data structure shall contain a description of changes of the policies decisions with respect to the last provided previous policy decision for the corresponding policy association. The default charging method of the PDU session, charging information, Reflective QoS Timer, P-CSCF Restoration Support Indication and IP index information shall not been updated by the PCF.

If no other rules are defined for specific data types within the SmPolicyDecision data structure, the encoding of changes of the policies decisions in the SmPolicyDecision data structure shall follow the following principles:

1) To modify an attribute with a value of type map (e.g. the "sessRules" attribute, the "pccRules" attribute, the "qosDecs" attribute, the "traffContDecs" attribute, the "umDecs" attribute, and the "conds" attribute) the attribute shall be provided with a value containing a map with entries according to the following principles:

- A new entry shall be added by supplying a new identifier (e.g. rule / decision identifier) as key and the corresponding structured data type instance (e.g. PCC rule) with complete contents as value as an entry within the map.

- An existing entry shall be modified by supplying the existing identifier as key and the corresponding structured data type instance with the same existing identifier (e.g. set the "qosId" to the same existing QoS data decision identifier), which shall describe the modifications following bullets 1 to 6, as value as an entry within the map.

- An existing entry shall be deleted by supplying the existing identifier as key and "NULL" as value as an entry within the map.

- For an unmodified entry, no entry needs to be provided within the map.

2) To modify an attribute with a structured data type instance as value, the attribute shall be provided with a value containing a structured data type instance with entries according to bullets 1 to 6.

3) To modify an attribute with another type than map or structured data type as value, the attribute shall be provided with a complete representation of its value that shall replace the previous value.

4) To create an attribute of any type, the attribute shall be provided with a complete representation of its value.

5) To delete an attribute of any type, the attribute shall be provided with NULL as value.

NOTE 1: Attributes that are allowed to be deleted need to be marked as "nullable" within the OpenAPI file in Annex A.

6) Attributes that are not added, modified, or deleted do not need to be provided.

NOTE 2: In related data structures no attribute can be marked as mandatory except the attribute for the identifier (e.g. rule / decision identifier).

The PCF shall not remove a provisioned policy decision data or condition data from the SMF when the reference(s) from the PCC rule(s) or session rule(s) are still valid. The PCF may keep a policy decision data or condition data valid when the PCF removes all the PCC(s) or session rule(s) referring to the policy decision data or condition data.

If the installation/activation of one or more new PCC rule(s) or session rule(s) (i.e. rules which were not previously successfully installed) fails, although the failed PCC rule(s) or session rule(s) is removed, the policy decision data or condition data which is referred by the failed PCC rule(s) or session rule(s) remains applicable in the SMF until the PCF removes it.

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