**3GPP TSG-CT WG3 Meeting #134 *C3-242238***

**Changsha, China, 15 - 19 April, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.507** | **CR** | **0301** | **rev** | **-** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | Partial Network Slice support for DNN replacement functionality | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNS\_Ph3 | | | | |  | ***Date:*** | | | 2024-03-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | As described in this TS, in order for the PCF to apply DNN replacement functionality, the PCF needs to be updated with the latest information related to the Allowed NSSAI and, if the feature PartNetSliceSupport or NetSliceRepl is supported, related to the Partially Allowed NSSAI.  There are a couple instances in the specification that only refer to Allowed NSSAI and thus need to be updated. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clause 4.2.2.3.4 is updated to indicate that the PCF is updated with both Allowed NSSAI and Partially Allowed NSSAI if the applicable features are supported.  Clause 5.6.2.8 is updated to indicate that the S-NSSAI that is included within the CandidateForReplacement data type can also refer to the S-NSSAI of the Partially Allowed NSSAI. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistent TS may bring to misinterpretation of the functionality and corresponding misoperation. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.2.3.4; 5.6.2.8. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 introduce any correction in the OpenAPI specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 4.2.2.3.4 SMF Selection Management

If the "DNNReplacementControl" feature is supported, when SMF Selection Management is enabled, the SMF selection information is encoded using the "SmfSelectionData" data type, which consists of:

- the conditions upon which the AMF shall request to the PCF the replacement of SMF selection data, which may include:

a) an indication of whether the AMF shall request DNN replacement when the UE requested an unsupported DNN during PDU session establishment encoded in the "unsuppDnn" attribute; and/or

b) a list of candidate DNNs for replacement encoded in the "candidates" map, where:

i) the key of the map is the S-NSSAI; and

ii) each entry of the map is of "CandidateForReplacement" data type, which:

- shall include the S-NSSAI encoded in the "snssai" attribute; and

- may include the list of candidate DNNs for the S-NSSAI encoded in the "dnns" attribute;

NOTE 1: The S-NSSAIs included in the map are S-NSSAIs of the allowed NSSAI and/or the Partially Allowed NSSAI, if the "PartNetSliceSupport" feature and/or "NetSliceRepl" feature is/are supported, valid in the serving network. The PCF keeps updated information of the Allowed NSSAI and/or the Partially Allowed NSSAI valid in the serving network by subscribing to the policy control request trigger(s) Change of Allowed NSSAI and/or Change of the Partially Allowed NSSAI of the served UE.

NOTE 2: When the PCF provides URSP rules (see 3GPP TS 29.525 [29]) to the UE with new DNN information and in order to provide uniform service experience for UEs from earlier Releases, the candidate DNNs for replacement will consider those included within the traffic descriptors in addition to those included as part of the Route Selection Descriptor(s) of the URSP rule(s) provided to the UE.

- and,

a) when included within the Npcf\_AMPolicyControl\_Update request, the UE requested DNN and S-NSSAI at PDU session establishment that matched an entry of the "candidates" map, encoded in the "dnn" attribute and in the "snssai" attribute respectively, and the mapping to the home S-NSSAI encoded in the "mappingSnssai" attribute if available; and

b) when included within the Npcf\_AMPolicyControl\_Update response, the PCF selected DNN encoded in the "dnn" attribute.

NOTE 3: The PCF can select the same DNN and S-NSSAI as the UE requested DNN and S-NSSAI. When the PCF returns an unsupported DNN, the AMF applies internal policies to reject the PDU session establishment.

When the "dnns" attribute is omitted in an entry of the "candidates" map it represents that the AMF shall invoke the procedure for any UE request matching the S-NSSAI value included in the "snssai" attribute.

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

#### 5.6.2.8 Type CandidateForReplacement

Table 5.6.2.8-1: Definition of type CandidateForReplacement

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| snssai | Snssai | M | 1 | The S-NSSAI in the serving PLMN. It shall contain a S-NSSAI within the Allowed NSSAI, or if the "PartNetSliceSupport" feature and/or "NetSliceRepl" feature is/are supported, it shall contain either a S-NSSAI within the Allowed NSSAI or within the Partially Allowed NSSAI. |  |
| dnns | array(Dnn) | O | 1..N | List of candidate DNNs for replacement for the S-NSSAI included in the "snssai" attribute. If omitted, any DNN for the provided S-NSSAI is candidate for replacement. The DNN shall contain the Network Identifier only.  (NOTE) |  |
| NOTE: The AMF shall match the PDU session that contain a candidate DNN Network Identifier for any Operator Identifier value. | | | | | |

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