3GPP TSG SA WG2#166 S2-2411908

Orlando, USA,18-22 November 2024 (revision of S2-2411038)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.501** | **CR** | **5764** | **Rev** | **4** | **Current version:** | **19.1.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Support of Slice change based on AF request | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | KDDI, ZTE, [Ericsson, Toyota, Nokia, NEC, Lenovo, Huawei] | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | DUMMY | | | | |  | ***Date:*** | | | 2024-11-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-16* *(Release 16)* *Rel-17* *(Release 17)* *Rel-18* *(Release 18)* *Rel-19* *(Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | At the October meeting, due to the direction of narrowing the scope of TEI19, this CR proposes a solution to update the allowed NSSAI regardless of the support for Rel-18 slice replacement. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | This CR introduces text to enable to trigger a slice replacement within a set of subscribed network slices based on AF request. AF sends AF requested slice replacement to AMF via PCF, and when AMF receives it, it updates the allowed NSSAI. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Lack of the support of AF-requested slice change in the 5GS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.15.5.2.2a (new Clause) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | The DUMMY WI code needs to be replaced by the TEI19\_XX WI on "New WID on Network Controlled Network Slice Selection", once allocated after the WI approval | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*FIRST CHANGE*

##### 5.15.5.2.2a AF triggered modification of the Set of Network Slice(s) for a UE

In non-roaming cases, a trusted AF or an AF subject to authorization via the NEF, may request to replace a certain S-NSSAI (Replaced S-NSSAI) for a UE with another S-NSSAI (Alternative S-NSSAI) which is part of the UE subscription. The request in either case is sent to the PCF for the UE handling the impacted subscriber. Similarly, a trusted AF or an AF subject to authorization via the NEF, may request to terminate the replacement then use the Replaced S-NSSAI for a UE.

The PCF for the UE triggers the network slice replacement at the AMF as defined in TS 23.503 [45].

NOTE 1: How the AF obtains the S-NSSAI to be replaced and the Alternative S-NSSAI is out of scope of this specification.

The PCF sends access and mobility management policies to the AMF, as described in TS 23.503 [45], including the Replaced S-NSSAI and the corresponding Alternative S-NSSAI, together with information indicates that the Replaced S-NSSAI is to be modified to Alternative S-NSSAI . Based on this information the AMF shall not handle the Network Slice Replacement procedure as described in clause 5.15.19, instead it handles the procedure as following:

- If the Alternative S-NSSAI is not within the UE subscription, or is not supported in the UE Registration Area, the AMF shall notify the PCF that the Network Slice Replacement is not triggered with a cause value. The PCF further notify the AF.

- If the Alternative S-NSSAI is within the UE subscription and is supported in the UE Registration Area, the AMF includes the Alternative S-NSSAI in the Allowed NSSAI (if not present).

- The AMF removes the Replaced S-NSSAI from the Allowed NSSAI and add the Replaced S-NSSAI into the Rejected S-NSSAI by a UE Configuration Update procedure, if there is no SSC mode 1 PDU Session associated with the Replaced S-NSSAI, or after the SSC mode 1 PDU Session associated with the Replaced S-NSSAI is released.

NOTE 2: It is assumed that the URSP rule is preconfigured to ensure that the UE will use the Alternative S-NSSAI to establish a new PDU Session. Otherwise the PCF sends the UE updated URSP rules.

The trusted AF or a NEF may send request to PCF for the UE to stop the Network Slice Replacement. In this case the PCF for the UE sends access and mobility management policies to the AMF, as described in TS 23.503 [45]. The AMF remove the Replaced S-NSSAI from the Rejected S-NSSAI by a UE Configuration Update procedure if there is no SSC mode 1 PDU Session associated with the Alternative S-NSSAI, or after the SSC mode 1 PDU Session associated with the Alternative S-NSSAI is released. The UE may request to register the Replaced S-NSSAIs again next time the UE sends a Requested NSSAI.

*End of CHANGES*