3GPP TSG SA WG2#165 S2-240xxxx

Hyderabad, India,14-18 October 2024 (revision of)

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.501** | **CR** | **5764** | **Rev** | **1** | **Current version:** | **19.1.0** |  |
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| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Support of Slice change based on AF request | | | | | | | | | |
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| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | DUMMY | | | | |  | ***Date:*** | | | 2024-10-04 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | This CR introduces text to enable to trigger a slice replacement within a set of subscribed network slices. Two options are introduced to enable a slice replacement to accommodate the variety of operators’ preferences. The solution is;   1. The AF can directly or be mediated by a NEF request the AMF to replace a certain network slice with another one within the UE subscription.   Or   1. If the S-NSSAI does not match the service parameters provisioned by the AF, the PCF for the UE subscribes the service parameters from the UDR and initiates an AM Policy Association Modification procedure to replace the S-NSSAI of the PDU Session with the S-NSSAI matching the UE policy information.   **Outcome from CC on 8th Aug 2024;**  It was discussed whether proposed solution options could be included in this TEI.  Option 1: AF -> (NEF->) UDM -> AMF  Option 2: AF -> (NEF->) UDR -> PCF -> AMF  This CR introduces text changes for option 2 in clause 5.15.19 which was the agreed upon option | | | | | | | | |
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| ***Summary of change:*** | | Introduce the ability to trigger slice change by an AF for UEs supporting the Rel-18 Network slice replacement, by reusing this feature. | | | | | | | | |
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| ***Consequences if not approved:*** | | Lack of the support of AF-requested slice change in the 5GS | | | | | | | | |
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| ***Clauses affected:*** | | 5.15.19.1 (new Clause) | | | | | | | | |
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|  | | **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 ... | | |
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| ***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 | | | | | | | | |
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| ***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: How the AF obtains the S-NSSAI to be replaced and the S-NSSAI replacing is out of scope of this specification.

The PCF sends access and mobility related policies to the AMF, as described in TS 23.503 [45], including the Replaced S-NSSAI and an Alternative S-NSSAI to trigger the Network Slice replacement, together with an indication that AF triggers the Network Slice Replacement. 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) and removes the Replaced S-NSSAI from the Allowed NSSAI and the Configured NSSAI.

NOTE: 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 related policies to the AMF, as described in TS 23.503 [45], including the Replaced S-NSSAI and an Alternative S-NSSAI, together with an indication that AF stops the Network Slice Replacement. The AMF adds the Replaced S-NSSAI in the Configured S-NSSAI and remove the Alternative S-NSSAI from the Allowed NSSAI. If the Replaced S-NSSAI is supported by the UE Registration Area, the AMF includes the Replaced S-NSSAI in the Allowed NSSAI.

*End of CHANGES*