**3GPP TSG-WG SA2 Meeting #154AH  *S2-23xxxxx***

**Online, 16-20 January 2023 (*revision of*)**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **23.501** | **CR** | **-** | **rev** | **-** | **Current version:** | **17.7.0** |  |
|  |
| *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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:***  | Configuration of network-controlled slice selection behavior for a UE |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | S2 |
|  |  |
| ***Work item code:*** | eNS\_ph3 |  | ***Date:*** | 2023-01-09 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 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)* |
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| ***Reason for change:*** | this CR enables Configuring network slicing behaviour for a UE, accroding to the conclusion of the Ue impacting aspects of KI#6 of TR 23.700-41 |
|  |  |
| ***Summary of change:*** | Provides the necessary normative text |
| ***--*** |  |
| ***Consequences if not approved:*** | Lack of support of this feature that has been agreed as part of TR 23.700-41 counlcusions for KI#6 |
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| ***Clauses affected:*** | 5.15.x(new) |
|  |  |
|  | **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:*** |  |
|  |  |
| ***This CR’s revision history:*** |  |

##

## **FIRST CHANGE**

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### 5.15.x Configuration of network-controlled network slice selection behaviour in the UE

The UE during the Registration procedure may indicate in UE MM Core Network Capability that it supports configuration of network-controlled network slice selection behaviour. If so, the AMF, based on local configuration or by interacting with the PCF, provides the UE with configuration information for network-controlled slice selection behaviour,

The configuration information includes:

- Indication, for each of the S-NSSAI of the HPLMN in the Configured NSSAI, whether the UE needs to register the network slice with the network:

- Irrespective of whether any applications in the UE needing data transmission in the network slice (i.e. the UE needs to register the network slice based on configuration information), and

- Only when Applications in the UE needing data transmission in the network slice (i.e. the UE needs to register the network slice on demand)

- Indication, only for the S-NSSAI of the HPLMN in the Configured NSSAI that are identified to be needed by applications on demand, of a timer that causes the UE to deregister the network slice after the last PDU session serving applications that requested connectivity in the network slice was released. This timer is started at the UE when the last PDU session is released. The timer also runs at the network where the AMF shall remove the S-NSSAI from the Allowed NSSAI when the S-NSSAI.

## **MORE CHANGES**

### 5.4.4a UE MM Core Network Capability handling

The UE MM Core Network Capability is split into the S1 UE network capability (mostly for E-UTRAN access related core network parameters) and the UE 5GMM Core Network Capability (mostly to include other UE capabilities related to 5GCN or interworking with EPS) as defined in TS 24.501 [47] and contains non radio-related capabilities, e.g. the NAS security algorithms, etc. The S1 UE network capability is transferred between all CN nodes at AMF to AMF, AMF to MME, MME to MME, and MME to AMF changes. The UE 5GMM Core Network Capability is transferred only at AMF to AMF changes.

In order to ensure that the UE MM Core Network Capability information stored in the AMF is up to date (e.g. to handle the situation when the USIM is moved into a different device while out of coverage, and the old device did not send the Detach message; and the cases of inter-RAT Registration Area Update), the UE shall send the UE MM Core Network Capability information to the AMF during the Initial Registration and Mobility Registration Update procedure within the NAS message.

The AMF shall store always the latest UE MM Core Network Capability received from the UE. Any UE MM Core Network Capability that an AMF receives from an old AMF/MME is replaced when the UE provides the UE MM Core Network Capability with Registration signalling.

If the UE's UE MM Core Network Capability information changes (in either CM-CONNECTED or in CM-IDLE state), the UE shall perform a Mobility Registration Update procedure when it next returns to NG-RAN coverage. See clause 4.2.2 of TS 23.502 [3].

The UE shall indicate in the UE 5GMM Core Network Capability if the UE supports:

- Attach in EPC with Request type "Handover" in PDN CONNECTIVITY Request message (clause 5.3.2.1 of TS 23.401 [26]).

- EPC NAS.

- SMS over NAS.

- LCS.

- 5G SRVCC from NG-RAN to UTRAN, as specified in TS 23.216 [88].

- Radio Capabilities Signalling optimisation (RACS).

- Network Slice-Specific Authentication and Authorization.

- Parameters in Supported Network Behaviour for 5G CIoT as described in clause 5.31.2.

- Receiving WUS Assistance Information (E-UTRA) see clause 5.4.9..

- Paging Subgrouping Support Indication (NR) see clause 5.4.12.

- CAG, see clause 5.30.3.3.

- Subscription-based restrictions to simultaneous registration of network slices (see clause 5.15.12).

- Support of NSAG (see clause 5.15.14).

- Minimization of Service Interruption (MINT), as described in clause 5.40.

- Configuration of network-controlled network slice selection behaviour

If a UE operating two or more USIMs, supports and intends to use one or more Multi-USIM features (see clause 5.38) in a PLMN for a USIM, it shall indicate in the UE 5GMM Core Network Capability for this USIM in this PLMN that it supports these one or more Multi-USIM features with the following indications:

- Connection Release Supported.

- Paging Cause Indication for Voice Service Supported.

- Reject Paging Request Supported.

- Paging Restriction Supported.

Otherwise, the UE with the capabilities of Multi-USIM features but does not intend to use them shall not indicate support of these one or more Multi-USIM features.

A UE not operating two or more USIMs shall indicate the Multi-USIM features are not supported.

NOTE: It is not necessary for a UE operating two or more USIMs to use Multi-USIM features with all USIMs.

## **END of CHANGES**