**3GPP TSG-CT WG1 Meeting #136-eC1-22xxxx**

**E-Meeting, 12th – 20th May 2022  *was C1-223616***

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | **4327** | **rev** | **1** | **Current version:** | **17.6.1** |  |
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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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | UE enter in substate NO-SUPI |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc17 |  | ***Date:*** | 2022-05-01 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *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:*** | In case of PLMN access mode, if no USIM is present, or the USIM is considered invalid by the UE, the substate shall be NO-SUPI. In case of SNPN access mode, the UE may use the subscription information such as credential and the subscriber identifier in the USIM for the EAP-AKA' or the 5G AKA based primary authentication and key agreement procedure. See below:*NOTE 1: A subscriber identifier in the form of a SUPI with the SUPI format "network specific identifier" containing a network-specific identifier or with the SUPI format "IMSI" containing an IMSI, is available in USIM if the SNPN uses the EAP based primary authentication and key agreement procedure using the EAP-AKA' or the 5G AKA based primary authentication and key agreement procedure.**NOTE 3: Credentials are available in USIM if the SNPN uses the EAP based primary authentication and key agreement procedure using the EAP-AKA' or the 5G AKA based primary authentication and key agreement procedure. If the MS supports access to an SNPN using credentials from a credentials holder, credentials available in USIM can include an indication to use MSK for derivation of KAUSF after success of primary authentication and key agreement procedure.*For this case, if no USIM is present, or the USIM is considered invalid by the UE, the substate shall be NO-SUPI; if not above case, and if no valid entry in the "list of subscriber data" exists, the substate shall be NO-SUPI. Based on above observations, the UE operating in different access mode enters NO-SUPI substate under different conditions. Hence, the green text below is not accurate and complete, needs to be reworded.*The substate chosen after PLMN-SEARCH, following power on is:**a) if no cell can be selected, the substate shall be NO-CELL-AVAILABLE;**b) if no USIM is present or no valid entry in the "list of subscriber data" exists, the substate shall be NO-SUPI;*  |
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| ***Summary of change:*** | It is proposed that: In case of PLMN access mode, if no USIM is present, or the USIM is considered invalid by the UE, the substate shall be NO-SUPI;In case of SNPN acess mode:1) if the SNPN uses the EAP based primary authentication and key agreement procedure using the EAP-AKA', or the 5G AKA based primary authentication and key agreement procedure, if no USIM is present, or the USIM is considered invalid by the UE, the substate shall be NO-SUPI;2) otherwise, if no valid entry in the "list of subscriber data" exists, the substate shall be NO-SUPI; |
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| ***Consequences if not approved:*** | The green text below is not accurate and complete. |
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| ***Clauses affected:*** | 5.2.2.2.1 |
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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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\*First change \*\*\*\*\*

##### 5.2.2.2.1 Selection of the substate after power on

For a UE configured for eCall only mode as specified in 3GPP TS 31.102 [22], timers T3444 and T3445 are considered to have expired at power on. When the UE is switched on, the substate shall be PLMN-SEARCH if the USIM is available and valid or there are valid entries in the "list of subscriber data". See 3GPP TS 23.122 [5] for further details.

The substate chosen after PLMN-SEARCH, following power on is:

a) if no cell can be selected, the substate shall be NO-CELL-AVAILABLE;

b) if the UE is not operating in SNPN access mode, if no USIM is present, or the USIM is considered invalid by the UE, the substate shall be NO-SUPI. If the UE is operating in SNPN access mode, the substate shall be NO-SUPI:

1) if the SNPN uses the EAP based primary authentication and key agreement procedure using the EAP-AKA', or the 5G AKA based primary authentication and key agreement procedure, and no USIM is present , or the USIM is considered invalid by the UE; or

2) the SNPN does not use the EAP based primary authentication and key agreement procedure using the EAP-AKA', or the 5G AKA based primary authentication and key agreement procedure, and no valid entry in the "list of subscriber data" exists;

c) if a suitable cell has been found, the PLMN or SNPN identity of the cell is not in one of the forbidden PLMN lists, the "permanently forbidden SNPNs" list or the "temporarily forbidden SNPNs" list which are, if the MS supports access to an SNPN using credentials from a credentials holder, associated with the selected entry of the "list of subscriber data" or the selected PLMN subscription, and the tracking area is not in one of the lists of 5GS forbidden tracking areas, then the substate shall be NORMAL-SERVICE;

d) if the selected cell is known not to be able to provide normal service, then the UE shall enter the substate LIMITED-SERVICE;

e) if the UE is in manual network selection mode and no cell of the selected PLMN or SNPN has been found, the UE shall enter the substate NO-CELL-AVAILABLE; and

f) if the UE is configured for eCall only mode as specified in 3GPP TS 31.102 [22], the substate shall be eCALL-INACTIVE.

\*\*\*\*\* End of changes \*\*\*\*\*