**3GPP TSG-CT WG1 Meeting #141eC1-23xxxx**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
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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:***  | Using NSWO in 5GS for UEs that are connected to the 5G-RG or FN-RG via WLAN |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc18-non3GPP, NSWO\_5G |  | ***Date:*** | 2023-04-06 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** |  |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | TS 33.501 specifies the following in clause 7B.4 (as a result of S3-231405):*A UE connecting to the 5G-RG or FN-RG via WLAN supporting IEEE 802.1X can use the NSWO authentication procedure as specified in Annex S of the present document.* The above indicates that, the UE that is allowed to use NSWO in 5GS can be:1. A UE that has a direct connection to WLAN through which it performs the NSWO in 5GS.
2. OR a UE that is behind a 5G-RG/FN-RG and it connects to 5G-RG/FN-RG through WLAN, where in that case the combination of 5G-RG/FN-RG, W-AGF and UPF serving the 5G-RG or FN-RG is acting respectively as Untrusted Non-3GPP access network or as a Trusted Non-3GPP access network (as specified in TS 23.501 clause 4.2.8.1A)

Hence the description of Authentication for NSWO in 5GS in stage-3 spec needs to be clarified to include case 2 described above. |
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| ***Summary of change:*** | Clarifying that, the term “UE” described in “Authentication for NSWO” can be also a UE that is connected to the 5G-RG or FN-RG via WLAN. |
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| ***Consequences if not approved:*** | Ambiguity whether the UEs that are behind 5G-RG/FN-RG are allowed to use NSWO in 5GS or not. |
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| ***Clauses affected:*** | 6.3a |
|  |  |
|  | **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's revision history:*** |  |

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

## 6.3a Authentication for NSWO in 5GS

A UE that supports NSWO in 5GS and is configured to use NSWO in 5GS, shall not perform NSWO in EPS. NSWO in 5GS capability can be enabled and disabled via configuration on the USIM (see 3GPP TS 31.102 [35]) or on the ME. Configuration on the USIM shall take precedence over the ME.

NOTE 1: The UE described in this clause includes a UE that is connected to the 5G-RG or FN-RG via WLAN supporting IEEE 802.1x.

In order to use NSWO in 5GS, and if the WLAN access network requires 5GS-based authentication of a UE to connect to the WLAN, the UE shall perform the EAP-AKA' authentication procedure as specified in 3GPP TS 33.501 [5] annex S.3. The UE shall use as its identity the SUCI in NAI format for NSWO in 5GS as defined in clause 28.7.12 of 3GPP TS 23.003 [8].

NOTE 2: The same NAI format is used over both trusted and untrusted non-3GPP access networks for NSWO in 5GS, which is different from the NAI format used for registration over trusted non-3GPP access specified in clause 28.7.6 of 3GPP TS 23.003 [8].

Upon receipt of an EAP-Request/AKA'-Challenge message the UE shall apply the rules for comparison of the locally determined ANID "5G:NSWO" (see table 8.1.1.2-2 of 3GPP TS 24.302 [7]) and the Network Name field of the AT\_KDF\_INPUT attribute received in the EAP-Request/AKA'-Challenge message as specified in IETF RFC 5448 [38].

A roaming UE that supports NSWO in 5GS and is configured to use NSWO in 5GS shall use as its identity the SUCI in decorated NAI format as specified for NSWO in 5GS in clause 28.7.9 of 3GPP TS 23.003 [8].

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