**3GPP TSG-CT WG1 Meeting #134-eC1-221681**

**E-Meeting, 17th – 25th February 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** | 0198 | **rev** | 1 | **Current version:** |  |  |
|  |
| *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:***  | Add support of 5G NSWO  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | NSWO\_5G |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | Annex S of TS 33.501 specifies the following requirements for the support of NSWO in 5GS that need to be implemented in stage-3 specs, namely "5G NSWO shall use EAP-AKA’, as specified in RFC 5448 [12], for authentication."and" An HPLMN that supports 5G NWSO and wants the UE to use 5G NSWO shall configure the UE to use 5G NSWO. This configuration shall be either on the USIM or ME, with configuration on the USIM taking precedence over the ME."**Remark**: The CR assumes that UE local confguration for NSWO is configurable over MO, contradicting the usual approach for local UE configuration being pre-configured as described in TS 24.526 |
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| ***Summary of change:*** | 1) Add support of SUCI-based EAP-AKA' authentication method for 5G NSWO 2) Introducing the handling of ME and UICC configuration for 5G NSWO by reference to [38] and [35] |
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| ***Consequences if not approved:*** | NSWO authentication procedures are not supported in 5GS |
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| ***Clauses affected:*** | 3.2, new 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:*** |  |

1st change

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

5GCN 5G Core Network

5GS 5G System

5G-AN 5G Access Network

5QI 5G QoS Identifier

AMF Access and Mobility Management Function

AN Access Network

ANDS Access Network Discovery and Selection

ANDSP Access Network Discovery and Selection Policy

AUSF Authentication Server Function

CP Control Plane

CRG Cable Residential Gateway

DHCP Dynamic Host Configuration Protocol

DL Downlink

DNS Domain Name System

DSCP Differentiated Services Code Point

ePDG Evolved Packet Data Gateway

ESP Encapsulating Security Payload

FQDN Fully Qualified Domain Name

H-PCF A PCF in the HPLMN

IP Internet Protocol

IPsec Internet Protocol Security

N3AN Non-3GPP Access Network

N3IWF Non-3GPP InterWorking Function

N5CW Non 5G Capable over WLAN

N5GC Non-5G Capable

NAI Network Access Identifier

NAS Non Access Stratum

NID Network Identifier

NSWO Non-Seamless WLAN Offload

PCF Policy control Function

PDU Protocol Data Unit

QFI QoS Flow Identifier

RQI Reflective QoS Indicator

SA Security Association

SNPN Stand-alone Non-Public Network

SPI Security Parameters Index

SUPI Subscription Permanent Identifier

SUCI Subscription Concealed Identifier

TCP Transmission Control Protocol

TNAN Trusted Non-3GPP Access Network

TNAP Trusted Non-3GPP Access Point

TNGF Trusted Non-3GPP Gateway Function

TWAN Trusted WLAN Access Network

TWAP Trusted WLAN Access Point

TWIF Trusted WLAN Interworking Function

UL Uplink

UP User Plane

UPF User Plane Function

V-PCF A PCF in the VPLMN

WLAN Wireless Local Area Network

WLANSP WLAN Selection Policy

2nd 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 capability can be enabled and disabled via configuration on the USIM or on the ME (see 3GPP TS 24.368 [38] or 3GPP TS 31.102 [35]). Configuration on the USIM shall take precedence over the ME.

In order to use NSWO in 5GS, a 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 as defined in clause 28.7.3 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].

End of changes