**3GPP TSG-CT WG1 Meeting #123-eC1-202636**

**Electronic meeting, 16-24 April 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.502** | **CR** | **0123** | **rev** | **1** | **Current version:** | **16.3.0** |  |
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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 | **X** |

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| ***Title:*** | Removal of editor’s notes | | | | | | | | | |
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| ***Source to WG:*** | Motorola Mobility, Lenovo, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5WWC | | | | |  | ***Date:*** | | | 2020-04-07 |
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| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | There is an editor's note about the N5CW having a SIM card in subclause 5.3A.1. That editor's note should be removed due to the new text in subclause 7A.1 of TS 33.501 saying:  Those N5CW devices are able to authenticate to the network with 3GPP credentials and register with the help of an interworking function (TWIF) that provides the 5GC NAS protocol stack towards the AMF.  There is an editor’s note about what EAP method an N5CW is using to authenticate to the network and according to subclause 7A.2.4 of TS 33.501.  The Trusted WLAN Interworking Function (TWIF) provides interworking functionality that enables connectivity with 5GC and implements the NAS protocol stack and exchanges NAS messages with the AMF on behalf of the N5CW device. A single EAP-AKA’ authentication procedure is executed for connecting the N5CW device both to the trusted WLAN access network and to the 5G core network. | | | | | | | | |
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| ***Summary of change:*** | | Removal of editor's note about N5CW device having USIM.  An editorial correction.  Removal of an editor’s note about the contents of the EAP message. | | | | | | | | |
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| ***Consequences if not approved:*** | | Editorial error and editorial notes remain in the specification. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3A.1, 7.3A.4.1, 7.3A.4.2 | | | | | | | | |
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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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

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### 5.3A.1 General

There are two modes of PLMN selection, namely, manual selection and automatic selection.

The UE follows one of the following two procedures defined in subclause 5.3.2.2 and subclause 5.3.2.3 depending on its implementation. The N5CW device that is not registered or cannot register via NG-RAN performs manual mode WLAN selection procedure as defined in subclause 5.3.2.2.

The PLMN selected in accordance with these procedures determines the WLAN that is selected. When the selected WLAN is a trusted non-3GPP IP access and the UE decides to access 5GC via trusted non-3GPP IP access, the UE shall derive a NAI from the identity of the selected PLMN and use the NAI as the identity for authentication and authorization with the PLMN and usage of the WLAN.

The procedures described in this subclause 5.3A shall apply to the UE and the N5CW device.

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#### 7.3A.4.1 General

A trusted non-3GPP access network (TNAN) may be implemented as a trusted WLAN access network (TWAN) which supports a WLAN access technology such as the one described in IEEE 802.11 [19]. A non 5G capable over WLAN (N5CW) device does not support 5G NAS signalling over WLAN, but may access 5GCN via a TWAN supporting a trusted WLAN interworking function (TWIF). An N5CW device may be a 5G UE with capability for 5G NAS signalling over 3GPP access although it lacks capability of NAS signalling over WLAN.

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#### 7.3A.4.2 N5CW device registration over trusted WLAN access network

A trusted WLAN access network (TWAN) includes a trusted WLAN access point (TWAP) and a trusted WLAN interworking function (TWIF) as illustrated in figure 7.3A.4.2-1.

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Figure 7.3A.4.2-1: Trusted WLAN Access Network

The EAP-AKA' authentication procedure is executed for connecting the N5CW device to a TWAN according to 3GPP TS 33.501 [5].

The TWAN and an N3CW device initiate an exchange of EAP-Request/Identity message and EAP-Response/Identity message as specified in IETF RFC 3748 [9] for link layer authentication of the UE by the TWAP. In the trusted WLAN access network, the TWAP and the N5CW device exchange EAP-Request/Identity message and EAP-Response/Identity message, encapsulated in the link layer protocol packets i.e. IEEE 802.11/802.1x packets.

Upon reception of EAP-Request/Identity message encapsulated in the IEEE 802.11/802.1x packets from the TWAP, the N5CW device shall:

a) construct an EAP-Response/Identity message as described in IETF RFC 3748 [9] containing an NAI as specified in subclause 28.7 of 3GPP TS 23.003 [8] to Request the PLMN with trusted 5G connectivity without NAS signalling capability; and

NOTE 1: The NAI includes the 5G-GUTI assigned to the N5CW device over 3GPP access, if the N5CW device is also a 5G UE and is already registered to 5GCN over 3GPP access.

Editor's note: An NAI for requesting the PLMN with trusted 5G connectivity without NAS signalling capability needs to be specified in subclause 28.7 of 3GPP TS 23.003 [8].

b) transmit the EAP-Response of identity type encapsulated in the link layer protocol packets towards the TWAP.

The TWAP conveys the information provided by the N5CW device to the TWIF which initiate the registration on behalf of the N5CW device to an AMF.

NOTE 2: The communication protocol between the TWAP and the TWIF is outside of the scope of 3GPP.

An exchange of the EAP request and EAP response as described in IETF RFC 3748 [9] occurs until the N5CW device is authenticated by the 5GCN with the EAP authentication described in 3GPP TS 33.501 [5]. Upon completion of the N5CW device authentication and reception of the EAP-Success by the N5CW device, the N5CW device and the TWAP use the TWAP key to establish access specific layer-2 security 4-way handshake according to IEEE 802.11 [19].

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