**3GPP TSG-CT WG1 Meeting #137-eC1-22xxxx**

**E-Meeting, 18th – 26th August 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **4614** | **rev** | **1** | **Current version:** | **17.7.1** |  |
|  | | | | | | | | |
| *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:*** | Resolving the ENs related to the UE Identities used in the Remote UE report procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell, Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_ProSe | | | | |  | ***Date:*** | | | 2022-07-06 |
|  |  | | | |  | |  | | |  |
| ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The following two ENs:  Editor's note: It is FFS what are the types of 5G ProSe remote UE identities that can be included in the REMOTE UE REPORT message as this is waiting for stage-2 definitions.  and  Editor's note: It is FFS what are the 5G ProSe remote UE identities that can be included in the Remote UE context list. Depending on the conclusion of this topic, the User identity field needs to be defined and also the Length of user identity is subject to change.  can now be resolved, since SA3 has specified the possible UE Identity in stage-2 TS 33.503, clause 6.3.3.2.2, as following (for user plane security solution):  4d. (…). PRUK ID is used as a 5G ProSe Remote UE ID in the present document.  and  When the 5G ProSe Layer-3 UE-to-Network Relay sends a Remote UE Report to the SMF as specified in TS 23.304 [2], the 5G ProSe Layer-3 UE-to-Network Relay shall include Remote User ID received in step 4d.  Hence the Remote UE identity can be set to the PRUK ID, when the user plane security solution is used.  Similarly, it is proposed to use the 5GPRUK ID as the possible UE identity when the control plane security solution is used. The motivation of reporting 5GPRUK ID in REMOTE UE REPORT procedure is similar to the motivation of reporting PRUK ID (both are identifiers for the Remote UE that can be reported to SMF). | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Resolving the ENs and specifying that, in the Remote UE Report procedure, the Remote UE ID can be set to:  =>PRUK ID, when user plane security solution is used  =>5GPRUK ID when control plane security solution is used | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | ENs are not resolved and the Remote UE Report procedure remains incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.6.2.2, 8.3.19.1, 9.11.4.29 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*\*\*

#### 6.6.2.2 Remote UE report procedure initiation

In order to initiate the 5G ProSe remote UE report procedure, the UE shall create a REMOTE UE REPORT message.

The UE shall include information of newly connected or disconnected 5G ProSe remote UEs to the network in the REMOTE UE REPORT message by setting the values of the Remote UE context connected IE or the Remote UE context disconnected IE to the 5G ProSe remote UE identities that are being connected or disconnected, respectively.

The UE shall set the Remote UE ID with:

a) the PRUK ID of the 5G ProSe remote UE, if the security for 5G ProSe communication via 5G ProSe UE-to-network relay is performed over user plane as specified in 3GPP TS 33.503 [56]; or

b) the 5GPRUK ID of the 5G ProSe remote UE, if the security for 5G ProSe communication via 5G ProSe UE-to-network relay is performed over control plane as specified in 3GPP TS 33.503 [56].

The UE shall set the PDU session ID IE to the value of the PDU session associated with the 5G ProSe remote UE connected to the 5G ProSe layer-3 UE-to-network relay UE or disconnected from the 5G ProSe layer-3 UE-to-network relay UE.

The UE shall allocate a PTI value currently not used and shall set the PTI IE of the REMOTE UE REPORT message to the allocated PTI value.

The UE shall transport the REMOTE UE REPORT message and the PDU session ID, using the NAS transport procedure as specified in subclause 5.4.5, and the UE shall start timer T3586 (see example in figure 6.6.2.2.1).



Figure 6.6.2.2.1: Remote UE report procedure

\*\*\*\*\* Next change \*\*\*\*\*

#### 8.3.19.1 Message definition

The REMOTE UE REPORT message is sent by the UE to the network to report connection or disconnection of 5G ProSe remote UE(s). See table 8.3.19.1.

Message type: REMOTE UE REPORT

Significance: dual

Direction: UE to network

Table 8.3.19.1: REMOTE UE REPORT message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Extended protocol discriminator | Extended protocol discriminator  9.2 | M | V | 1 |
|  | PDU session ID | PDU session identity  9.4 | M | V | 1 |
|  | PTI | Procedure transaction identity  9.6 | M | V | 1 |
|  | Remote UE report message identity | Message type  9.7 | M | V | 1 |
| 76 | Remote UE context connected | Remote UE context list  9.11.4.29 | O | TLV-E | 16-65538 |
| 70 | Remote UE context disconnected | Remote UE context list  9.11.4.29 | O | TLV-E | 16-65538 |

\*\*\*\*\* Next change \*\*\*\*\*

#### 9.11.4.29 Remote UE context list

The purpose of the Remote UE context list information element is to provide identity and optionally IP address of a 5G ProSe remote UE connected to, or disconnected from, a UE acting as a 5G ProSe layer-3 UE-to-network relay.

The Remote UE context list information element is coded as shown in figure 9.11.4.29.1, figure 9.11.4.29.2, table 9.11.4.29.1 and table 9.11.4.29.2.

The Remote UE context list is a type 6 information element with a minimum length of 16 octets and a maximum length of 65538 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Remote UE context list IEI | | | | | | | | octet 1 |
| Length of remote UE context list contents | | | | | | | | octet 2 |
| octet 3 |
| Number of remote UE contexts | | | | | | | | octet 4 |
| Remote UE context 1 | | | | | | | | octet 5 |
|  |
| octet a |
| … | | | | | | | | octet a+1\*  octet b\* |
| Remote UE context k | | | | | | | | octet b+1\* |
|  |
| octet c\* |

Figure 9.11.4.29.1: Remote UE context list

Table 9.11.4.29.1: Remote UE context list

|  |
| --- |
| Remote UE context (octet 5 etc) |
|  |
| The contents of remote UE context are applicable for one individual UE and are coded as shown in figure 9.11.4.29.2 and table 9.11.4.29.2. |
|  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | | | 6 | 5 | | | 4 | | 3 | 2 | 1 |  |
| Length of remote UE context | | | | | | | | | | | | | octet 5 |
| 0  Spare | | 0  Spare | 0  Spare | | | 0  Spare | Remote UE ID format | | | Remote UE ID type | | | octet 6 |
| Length of remote UE ID | | | | | | | | | | | | | octet 7 |
| Remote UE ID | | | | | | | | | | | | | octet 8 |
| octet j |
| Spare | | | | | | | | | Port type | Protocol used by remote UE | | | octet j+1\* |
| Address information | | | | | | | | | | | | | octet j+2\*  octet j+k\* |

Figure 9.11.4.29.2: Remote UE context

Table 9.11.4.29.2: Remote UE context list information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Remote UE ID type (bits 1 to 3 of octet 6) | | | | | | | | |
| Bits | | | | | | | | |
| **3** | | **2** | | | | **1** |  |  |
| 0 | | 0 | | | | 1 |  | PRUK ID |
| 0 | | 1 | | | | 0 |  | 5GPRUK ID |
| All other values are reserved. | | | | | | | | |
|  | | | | | | | | |
| Remote UE ID format (bit 4 of octet 6) (NOTE) | | | | | | | | |
| Bit | | | | | | | | |
| **4** | | | | | | | | |
| 0 | | | | Network access identifier (NAI) | | | | |
| 1 | | | | 64-bit string | | | | |
|  | | | | | | | | |
| Bits 5 to 8 of octet 6 are spare and shall be coded as zero. | | | | | | | | |
|  | | | | | | | | |
| Remote UE ID (octet 8 to octet j) | | | | | | | | |
| The PRUK ID or the 5GPRUK ID of the 5G ProSe Remote UE. | | | | | | | | |
|  | | | | | | | | |
| Protocol used by remote UE (octet j+1, bits 1 to 3)  Bits | | | | | | | | |
| 3 | | 2 | | | | 1 |  |  |
| 0 | | 0 | | | | 0 |  | No IP info |
| 0 | | 0 | | | | 1 |  | IPv4 |
| 0 | | 1 | | | | 0 |  | IPv6 |
| 1 | | 0 | | | | 0 |  | Unstructured |
| 1 | | 0 | | | | 1 |  | Ethernet |
| All other values are reserved. | | | | | | | | |
|  | | | | | | | | |
| Port type (octet j+1, bits 4) | | | | | | | | |
| Bit | | | | | | | | |
| **4** |  | | | |  | | | |
| 0 |  | | | | UDP port | | | |
| 1 |  | | | | TCP port | | | |
|  | | | | | | | | |
| Bits 5 to 8 of octet j+1 are spare and shall be coded as zero. | | | | | | | | |
|  | | | | | | | | |
| If the Protocol used by remote UE indicates IPv4, the Address information in octet j+2 to octet j+7 contains the IPv4 address and port number. The type of the port number is indicated with the value set in bit 4 of octet j+1. Bit 8 of octet j+2 represents the most significant bit of the IP address and bit 1 of octet j+5 the least significant bit. Bit 8 of octet j+6 represents the most significant bit of the port number and bit 1 of octet j+7 the least significant bit.  If the Protocol used by remote UE indicates IPv6, the Address information in octet j+2 to octet j+9 contains the /64 IPv6 prefix of a remote UE. Bit 8 of octet j+2 represents the most significant bit of the /64 IPv6 prefix and bit 1 of octet j+9 the least significant bit.  If the Protocol used by remote UE indicates Ethernet, the Address information in octet j+2 to octet j+7 contains the remote UE MAC address. Bit 8 of octet j+2 represents the most significant bit of the MAC address and bit 1 of octet j+7 the least significant bit.  If the Protocol used by remote UE indicates Unstructured, the Address information octets are not included.  If the Protocol used by remote UE indicates No IP info, the Address information octets are not included | | | | | | | | |
|  | | | | | | | | |
| NOTE: When Remote UE ID type is set to 5GPRUK ID, the Remote UE ID format shall be always set to network access identifier (NAI) | | | | | | | | |

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