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

**E-Meeting, 12th – 20th May 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.554** | **CR** | **0101** | **rev** | **1** | **Current version:** | **17.0.0** |  |
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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 |  |

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| ***Title:*** | UE-to-network relay reselection upon security failure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell, InterDigital | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_ProSe | | | | |  | ***Date:*** | | | 2022-04-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
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| ***Reason for change:*** | | The following is stated in the agreed stage-2 CR S2-2203591:  *NOTE: In security procedure failure case, the 5G ProSe Remote UE can select other 5G ProSe UE-to-Network Relay.*  Which indicates that, the failure of the control plane security procedure can be a trigger for a relay reselection procedure. This can be applicable for both cases: failure in control plane security solution and failure in user plane security solution.  The corresponding requirement needs to be specified into stage-3. | | | | | | | | |
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| ***Summary of change:*** | | Adding a new trigger for relay reselection procedure, which is upon getting a rejection due to failure of security procedure for UE-to-network relay cases. | | | | | | | | |
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| ***Consequences if not approved:*** | | Missing requirements regarding how Remote UE would proceed when the security procedure fails which results in no possibility for Remote UE to get a relaying service with the network. | | | | | | | | |
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| ***Clauses affected:*** | | 8.2.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*\*\*

#### 8.2.3.2 UE-to-network relay reselection procedure initiation

The remote UE shall trigger the UE-to-network relay reselection procedure if one of the following conditions is met:

a) the UE has received a lower layers indication that the serving 5G ProSe UE-to-network relay UE no longer fulfills the lower layers criteria as specified in 3GPP TS 38.331 [13];

b) the parameters related to 5G ProSe UE-to-network relay in the configuration parameters for 5G ProSe UE-to-network relay as specified in clause 5.2.5 (e.g., relay service code, User info ID, etc.) have been updated and the serving 5G ProSe UE-to-network relay UE no longer fulfills the conditions specified in clause 8.2.1.2.2;

c) the UE has received a PROSE DIRECT LINK ESTABLISHMENT REJECT message from the 5G ProSe UE-to-network relay UE with the PC5 signalling protocol cause value #1 "direct communication to the target UE not allowed";

d) the UE has received a PROSE DIRECT LINK RELEASE REQUEST message from the 5G ProSe UE-to-network relay UE with the PC5 signalling protocol cause value #1 "direct communication to the target UE not allowed";

e) the UE has received a PROSE DIRECT LINK RELEASE REQUEST message from the 5G ProSe UE-to-network relay UE with the PC5 signalling protocol cause value #4 "direct connection is not available anymore";

f) the UE has not received any response from the 5G ProSe UE-to-network relay UE after M consecutive retransmissions of PROSE DIRECT LINK ESTABLISHMENT REQUEST or PROSE DIRECT LINK KEEPALIVE REQUEST messages;

g) the UE has not received any response from the 5G ProSe UE-to-network relay UE after M consecutive retransmissions of PROSE PC5 DISCOVERY message for UE-to-network relay discovery solicitation used to trigger the PROSE PC5 DISCOVERY message signal strength measurement between the UE and the 5G ProSe UE-to-network relay UE with which the UE has a link established;

h) the UE has received a PROSE DIRECT LINK ESTABLISHMENT REJECT message from the ProSe UE-to-network relay UE with the cause value #13 "congestion situation";

i) the UE has received a PROSE DIRECT LINK RELEASE REQUEST message from the ProSe UE-to-network relay UE with the cause value #13 "congestion situation"; or

j) the UE has received a PROSE DIRECT LINK ESTABLISHMENT REJECT message from the 5G ProSe UE-to-network relay UE with the cause value #14 "security procedure failure of 5G ProSe UE-to-network relay".

NOTE: The value of M is implementation specific and is less than or equal to the maximum number of retransmissions allowed for PC5 Signalling protocol.

In cases c), d), h) and i), the remote UE shall exclude the 5G ProSe UE-to-network relay UE which sent the message specified in cases c), d), h) or i) from the UE-to-network relay reselection process described below (at least for the indicated back-off time period if provided from the ProSe UE-to-network relay UE in cases h) and i)).

To conduct UE-to-network relay reselection process, the UE shall first initiate one of the following procedures or both depending on UE's configuration parameters for 5G ProSe UE-to-network relay as specified in clause 5.2.5:

a) monitoring procedure for UE-to-network relay discovery as specified in clause 8.2.1.2.2; or

b) discoverer procedure for UE-to-network relay discovery as specified in clause 8.2.1.3.1.

After the execution of the above discovery procedure(s), the remote UE performs the UE-to-network relay selection procedure as specified in clause 8.2.2.

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