**3GPP TSG-SA2 Meeting #161 *S2-2403400***

**Athens, Greece, 26th Feb 2024 - 1st Mar 2024 rev of S2-2402346**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | **23.304** | **CR** | **0423** | **rev** | **3** | **Current version:** | **18.4.0** |  |
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| *For* [***HELP***](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:***  | Update procedure for 5G ProSe UE-to-UE Relay Discovery with Model A |
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| ***Source to WG:*** | InterDigital |
| ***Source to TSG:*** | SA2 |
|  |  |
| ***Work item code:*** | 5G\_ProSe\_Ph2 |  | ***Date:*** | 2024-02-16 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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:*** | U2U relay discovery with model A is intended to provide information of other end UEs in proximity via the U2U relay to the monitoring End UE. It is based on the information “user info ID of other UEs in proximity” in U2U relay discovery announcement message and it is assumed that the information are acquired during U2U relay discovery with model B procedure or during U2U relay communication procedure.The assumption is not compliant to security requirement from SA3 which says direct discovery set in U2U relay discovery message is protected end-to-end between End UEs and it shall be transparent to U2U relay.In TS 33.503 subclause 6.1.3.3.3, security procedure for 5G ProSE UE-to-UE Relay Discovery with Model A provides mechanism to provide the user info of other UEs via U2U relay in compliance with above security requirement.Therefore, as alignment with security requirements from SA3, it is proposed to update U2U relay discovery with model A based on TS33.503.[Revision] According to TS23.304 clause 5.1.2, 5G ProSe UE may support either Model A, Model B, or both per UE’s implementation.And it is possible for UEs only supporting Model A discovery to discover peer UE and setup unicast PC5 connection. But, current U2U Relay extension cannot be applied to those UEs supporting only Model A discovery because U2U Relay Model A discovery only include direct discovery set acquired from model B discovery.Therefore, U2U Relay discovery with Model A should be enhanced to support the end UE supporting only Model A discovery.Current TS33.503 supports the security protection of direct discovery set during U2U relay discovery with model A discovery, as alignment between SA3 and SA2, acquiring direct discovery set during U2U relay discovery with Model A discovery shall be included in U2U relay extension.  |
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| ***Summary of change:*** | Discovery set is clarified. U2U Relay Discovery is updated to include acquiring direct discovery set via Model A discovery. |
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| ***Consequences if not approved:*** | U2U Relay discovery procedure does not satisfy the securtiy requirement from SA3. |
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| ***Clauses affected:*** | 6.3.2.4.2, 6.3.2.4.X |
|  |  |
|  | **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 \* \* \* \*

##### 6.3.2.4.2 Procedure for 5G ProSe UE-to-UE Relay Discovery with Model A

Depicted in Figure 6.3.2.4.2-1 is the procedure for 5G ProSe UE-to-UE Discovery with Model A.



Figure 6.3.2.4.2-1: 5G ProSe UE-to-UE Relay Discovery with Model A

1. The 5G ProSe UE-to-UE Relay has discovered other UEs in proximity and obtains the Direct discovery set from other UEs in proximity per RSC. (e.g. via a previous 5G ProSe UE-to-UE Relay Discovery or via secure PC5 connection between 5G ProSe U2U Relay and 5G ProSe End UE (refer to TS33.503[29]))

2. The 5G ProSe UE-to-UE Relay sends a UE-to-UE Relay Discovery Announcement message. The UE-to-UE Relay Discovery Announcement message contains the Type of Discovery Message, User Info ID of the 5G ProSe UE-to-UE Relay, RSC and list of Direct discovery set received from the 5G ProSe End UEs supporting the RSC. The UE-to-UE Relay Discovery Announcement message is sent using the Source Layer-2 ID and Destination Layer-2 ID as described in clause 5.8.4.

 The 5G ProSe UE-to-UE Relay shall only announce User Info IDs of other UEs in proximity that did not include an Announce Prohibited Indication when they were previously discovered.

NOTE: 5G ProSe UE-to-UE Relay announces Direct discovery set from other UEs in proximity only if their PC5 signal strength measured by the 5G ProSe UE-to-UE Relay is above configured signal strength threshold as specified in TS 38.331 [16]. A 5G ProSe End UE monitors announcement messages from a 5G ProSe UE-to-UE Relay. The 5G ProSe End UEs determine the Destination Layer-2 ID for signalling reception as specified in clause 5.1.

\* \* \* \* Second change \* \* \* \*

##### 6.3.2.4.X Acquiring Direct discovery set by model A discovery

The 5G ProSe UE-to-UE Relay may monitor Announcement messages from the 5G ProSe End UEs.

When receiving an Announcement message from a 5G ProSe End UE, the 5G ProSe UE-to-UE Relay may include a Direct Discovery Set, which was included in the received message, in the list of Direct discovery set to be announced at UE-to-UE Relay Discovery Announcement message as specified in subclause 6.3.2.4.2.

\* \* \* \* End of change \* \* \* \*