**3GPP TSG-SA3 Meeting #115 *draft\_S3-240864-r1***

Athens, Greece, 26th February - 1st March 2024 merger of *S3-240388, S3-240779*

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **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 |  |

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|  |
| ***Title:***  | Remove circular reference in U2U Relay discovery Model A |
|  |  |
| ***Source to WG:*** | Interdigital |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** | 5G\_Prose\_Ph2 |  | ***Date:*** | 2024-02-12 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | SA2 agreed CR 0423 refers to TS 33.503 text for the retrieval by U2U Relay of directy discovery set from UE via secure PC5 link. TS 33.503 referring to TS 23.304 for direct discovery set obtained via previous communication procedures, is now a circular reference. |
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| ***Summary of change:*** | Remove circular reference to TS 23.304 related to direct discovery set obtained via previous communication. |
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| ***Consequences if not approved:*** | Confusing circular reference between TS 23.304 and TS 33.503.  |
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| ***Clauses affected:*** | 6.1.3.3.3.1 |
|  |  |
|  | **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:*** |  |

\*\*\*\*\*\*\*\*\*\*\*\* START OF CHANGE\*\*\*\*\*\*\*

###### 6.1.3.3.3.1 Security procedure for 5G ProSe UE-to-UE Relay Discovery with Model A

The security procedure for 5G ProSe UE-to-UE Relay Discovery with Model A is described as follows.



Figure 6.1.3.3.3.1-1: Security procedure for 5G ProSe UE-to-UE Relay Discovery with Model A

NOTE 1: The protection of direct discovery set and Announcement message reuses the protection mechanism specified in clause 6.1.3.2.3 of the present document.

1a. The monitoring 5G ProSe End UE and announcing 5G ProSe End UE are provisioned with the discovery security materials associated with a 5G ProSe Direct Discovery service based on the discovery security materials provisioning procedure for Restricted 5G ProSe Direct Discovery, as specified in clause 6.1.3.2.2.1 of the present document.

1b. The monitoring 5G ProSe End UE, announcing 5G ProSe End UE, and 5G ProSe UE-to-UE Relay are provisioned with discovery security materials associated with an RSC based on the discovery security materials provisioning procedure for UE-to-Network Relay Discovery, as specified in clause 6.1.3.2.2.1 of the present document.

2. The announcing 5G ProSe End UE shall protect the direct discovery set using the discovery security materials associated with the 5G ProSe Direct Discovery service as specified in clause 6.1.3.2.3 of the present document. The protected direct discovery set shall include User Info ID of the announcing 5G ProSe End UE, the UTC-based counter LSB parameter, and a MIC IE. The 5G ProSe UE-to-UE Relay obtains the RSC and protected direct discovery set from the announcing 5G ProSe End UE in proximity (e.g., via a previous 5G ProSe UE-to-UE Relay Discovery procedure as specified in clause 6.3.2.4.2 of TS 23.304 [2] or via secure PC5 unicast link between 5G ProSe U2U Relay and 5G ProSe End UE). When 5G ProSe UE-to-UE Relay Discovery is used to deliver the direct discovery set, the announcing 5G ProSe End UE shall include the RSC and protected direct discovery set in a discovery message that is protected using the discovery security materials associated with the RSC as specified in clause 6.1.3.2.3 of the present document. When 5G ProSe UE-to-UE Relay Communication is used to deliver the direct discovery set, the announcing 5G ProSe End UE shall use the secure PC5 unicast link with the 5G ProSe UE-to-UE Relay to send the RSC and protected direct discovery set. The 5G ProSe UE-to-UE Relay shall store the valid protected direct discovery set along with its validity time. A protected discovery set shall be removed once its validity time has expired. The validity time is determined from the UTC-based counter associated to the received direct discovery set that works as a timestamp.

NOTE 2: The protected direct discovery set remains valid as long as the 5G ProSe UE-to-UE Relay and Monitoring 5G ProSe End UE estimates the same UTC-based counter used by the Announcing ProSe End UE.

3. When broadcasting the Announcement message, the 5G ProSe UE-to-UE Relay shall include the list of valid protected direct discovery sets in the Announcement message and protect the Announcement message using the discovery security materials associated with the RSC as specified in clause 6.1.3.2.3 of the present document. Then, the 5G ProSe UE-to-UE Relay sends the Announcement message.

4. On receiving the Announcement message from the 5G ProSe UE-to-UE Relay, the monitoring 5G ProSe End UE shall process the received Announcement message using the discovery security materials associated with the RSC as specified in clause 6.1.3.2.3 of the present document. If the verification is successful, the monitoring 5G ProSe End UE shall extract the direct discovery set(s) from the Announcement message, and process the direct discovery set(s) using the discovery security materials associated with the 5G ProSe Direct Discovery service as specified in clause 6.1.3.2.3 of the present document.

\*\*\*\*\*\*\*\*\*\*\*\* END OF 1st CHANGE\*\*\*\*\*\*\*\*