**3GPP TSG-CT WG1 Meeting #141eC1-232551**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.554** | **CR** | **0319** | **rev** |  | **Current version:** | **18.0.0** |  |
|  | | | | | | | | |
| *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:*** | Support of Emergency service relaying by 5G ProSe UE-to-Network | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China Telecom | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_ProSe\_Ph2 | | | | |  | ***Date:*** | | | 2023-04-10 |
|  |  | | | |  | |  | | |  |
| ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | The following was agreed in SA2 for U2N relay providing the emergency service:  A 5G ProSe enabled UE acting as 5G ProSe UE-to-Network Relay shall have a normal registration (including also normal registration for a 5G ProSe Relay enabled UE in Non-Allowed Area). A 5G ProSe enabled UE in limited-service state shall not act as 5G ProSe UE-to-Network Relay. Mobility Restrictions that are overruled for UE requesting direct emergency service are overruled also for 5G ProSe UE-to-Network Relay that is relaying emergency service as specified in clause 5.4.3.  This requirement should be implemented to stage 3. | | | | | | | | |
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| ***Summary of change:*** | | Add some description of Emergency service for UE-to-Network Relaying in the stage-3 spec | | | | | | | | |
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| ***Consequences if not approved:*** | | Emergency service via 5G ProSe Remote UE is not specified in the stage-3 spec. | | | | | | | | |
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| ***Clauses affected:*** | | 8.2.1.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* Start of Changes \* \* \*

\* \* \* Next Changes \* \* \*

#### 8.2.1.1 General

This clause describes the procedures for both layer-3 and layer-2 UE-to-network relay discovery for public safety use and commercial services at a ProSe-enabled UE over the PC5 interface. The purpose of the UE-to-network relay discovery procedure over PC5 interface is to enable a ProSe-enabled UE to detect and identify another ProSe-enabled UE over PC5 interface for UE-to-network relay communication between a UE and 5GC.

NOTE 1: Relaying Multicast/Broadcast Service traffic to a 5G ProSe remote UE by a 5G ProSe UE-to-network relay is not supported in this release of the specification.

A 5G ProSe UE-to-network relay supporting multiple relay service codes can advertise the relay service codes using multiple discovery messages, with one relay service code per discovery message.

The following principles for 5G ProSe UE-to-network relay apply when the 5G ProSe UE-to-network relay UE or the 5G ProSe remote UE is in service area restriction as defined in clause 5.3.5 of 3GPP TS 24.501 [11], except the case when the 5G ProSe UE-to-network relay UE is relaying the emergency service for the 5G ProSe remote UE:

a) in non-allowed area of its serving PLMN, the 5G ProSe layer-3 UE-to-network relay UE is not allowed to perform relay operations (e.g., UE-to-network relay discovery as specified in clause 8.2.1, or accept the 5G ProSe direct link establishment procedure as specified in clause 7.2.2) except for e.g. high priority access as defined in clause 5.3.5 of 3GPP TS 24.501 [11] based on relay service codes as specified in clause 5.2.5;

b) service area restriction is not applicable to the 5G ProSe layer-3 remote UE;

c) in non-allowed area of its serving PLMN, the 5G ProSe layer-2 UE-to-network relay UE is not allowed to perform relay operations (e.g., UE-to-network relay discovery as specified in clause 8.2.1, or accept the 5G ProSe direct link establishment procedure as specified in clause 7.2.2); and

d) in non-allowed area of its serving PLMN, the 5G ProSe layer-2 remote UE follows the same principles of service area restrictions as specified in clause 5.3.5 of 3GPP TS 24.501 [11] for communication with the network via the 5G ProSe layer-2 UE-to-network relay UE, taking into account the TAI in the RRC container received from the 5G ProSe layer-2 UE-to-network relay UE.

NOTE 2: Closed access group information is not specified for 5G ProSe.

NOTE 3: Principles of operation for emergency services (incl. exceptions from mobility restrictions) are not specified in this release of the specification.

The following principles for 5G ProSe UE-to-network relay apply when the relay UE or the 5G ProSe remote UE is in 5GS forbidden tracking areas as defined in clause 5.3.13 of 3GPP TS 24.501 [11]:

a) in a 5GS forbidden tracking area of its serving PLMN, the 5G ProSe UE-to-network relay UE is not allowed to perform relay operations; and

b) in a 5GS forbidden tracking area of its serving PLMN, the 5G ProSe remote UE is not allowed to access the network via the 5G ProSe UE-to-network relay UE unless the 5G ProSe remote UE is attempting for emergency service, taking into account the TAI in the RRC container received from the 5G ProSe layer-2 UE-to-network relay UE.

To perform UE-to-network relay discovery over PC5 interface, the UE is configured with the related information as described in clause 5.2.5. The following models for UE-to-network relay discovery procedure over PC5 interface as specified in 3GPP TS 23.304 [2] are supported:

a) Model A uses a single discovery protocol message (Announcement); and

b) Model B uses two discovery protocol messages (Solicitation and Response).

NOTE 4: If the UE is authorized to perform both 5G ProSe UE-to-network relay discovery Model A and 5G ProSe UE-to-network relay discovery Model B, it is up to UE implementation to select which model to perform or perform both models simultaneously.

The 5G ProSe UE-to-network relay UE and 5G ProSe layer-3 remote UE may use the PC5 DRX mechanism to perform 5G ProSe UE-to-network relay discovery over PC5 interface when the UE is not served by NG-RAN as specified in clause 5.2.5.

The following procedures are defined for UE-to-network relay discovery procedure over PC5 interface:

a) UE-to-network relay discovery over PC5 interface with Model A:

1) Announcing UE procedure for UE-to-network relay discovery initiation;

2) Announcing UE procedure for UE-to-network relay discovery completion;

3) Monitoring UE procedure for UE-to-network relay discovery initiation;

4) Monitoring UE procedure for UE-to-network relay discovery completion;

5) Announcing UE procedure for UE-to-network relay discovery additional information; and

6) Monitoring UE procedure for UE-to-network relay discovery additional information; and

b) UE-to-network relay discovery over PC5 interface with Model B:

1) Discoverer UE procedure for UE-to-network relay discovery initiation;

2) Discoverer UE procedure for UE-to-network relay discovery completion;

3) Discoveree UE procedure for UE-to-network relay discovery initiation; and

4) Discoveree UE procedure for UE-to-network relay discovery completion.

\* \* \* End of Changes \* \* \*