**3GPP TSG-CT WG1 Meeting #141eC1-23xxxx**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **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:***  | Update 5G ProSe link modification messages for the L3 UE-to-UE relay reselection procedure |
|  |  |
| ***Source to WG:*** | InterDigital Inc. |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5G\_ProSe\_Ph2 |  | ***Date:*** | 2023-04-10 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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)* |
|  |  |
| ***Reason for change:*** | In S2-2303389 updates were agreed for the UE-to-UE reselection procedure and implemented in 23.304, clause 6.7.4.3. The proposed changes have impact on the 5G ProSe direct link modification procedure, which needs to be implemented in stage-3. Following updates are proposed in this CR:* Corresponding IEs added to the link modification messages
* New PROSE DIRECT LINK MODIFICATION ACK message is added.
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| ***Summary of change:*** | 5G PROSE DIRECT LINK MODIFICATION ACCEPT, and 5G PROSE DIRECT LINK MODIFICATION REQUEST messages are updated, while 5G PROSE DIRECT LINK MODIFICATION ACK is added. |
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| ***Consequences if not approved:*** | Stage 2 updated of 5G ProSe UE-to-UE relay reselection procedure is not implemented |
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| ***Clauses affected:*** | 10.3.6.1,10.3.6.a, 10.3.6.b, 10.3.6.c, 10.3.6.d, 10.3.7.1, 10.3.7.a, 10.3.7.b, 10.3.7.c, 10.3.7.d,10.3.x.1 (new) |
|  |  |
|  | **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 \*\*\*\*\*

#### 10.3.6.1 Message definition

This message is sent by the UE to another peer UE to initiate the direct link modification procedure. See table 10.3.6.1.1.

Message type: PROSE DIRECT LINK MODIFICATION REQUEST

Significance: dual

Direction: UE to peer UE

Table 10.3.6.1.1: PROSE DIRECT LINK MODIFICATION REQUEST message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | PROSE DIRECT LINK MODIFICATION REQUEST message identity | ProSe PC5 signalling message type11.3.1 | M | V | 1 |
|  | Sequence number | Sequence number11.3.2 | M | V | 1 |
|  | Link modification operation code | Link modification operation code11.3.19 | M | V | 1 |
|  | QoS flow descriptions | PC5 QoS flow descriptions11.3.5 | M | LV-E | 5-65537 |
| 7C | QoS rules | PC5 QoS rules11.3.29 | O | TLV-E | 7-65538 |
| XY | Source end UE info | User info ID11.3.xz | O | TLV | 3-257 |
| XZ | Target end UE info | User info ID11.3.xz | O | TLV | 3-257 |
| ZZ | Target end UE layer-2 ID | Layer-2 ID11.3.25 | O | TV | 4 |
| AA | Relay reselection indication | Relay reselection indication11.3.xx | O | TV | 1 |
| AB | List of candidates U2U relay UE info | User info ID11.3.xz | O | TLV | 3-257 |
| AC | Initiating UE IPv6 address | Link local IPv6 address11.3.7 | O | TV | 17 |
| AD | List of target UE IPv6 address | Link local IPv6 address11.3.7 | O | TLV | 17-257 |
| AF | List of candidates U2U relay UE layer-2 ID | Layer-2 ID11.3.25 | O | TV | 4-257 |

#### 10.3.6.a Relay reselection indication

The UE shall include this IE if the 5G ProSe direct link modification request is to trigger UE-to-UE relay reselection, and if:

a) the UE acts as a source 5G ProSe end UE and the 5G ProSe direct link is between the source 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the Relay reselection indication to the 5G ProSe UE-to-UE relay UE; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the target 5G ProSe end UE to indicate the Relay reselection indication to the target 5G ProSe end UE.

#### 10.3.6.b List of candidates U2U relay UE user info

The UE shall include this IE if relay reselection is indicated, and if:

a) the UE acts as a source 5G ProSe end UE and the 5G ProSe direct link is between the source 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the user info ID of the candidate 5G ProSe UE-to-UE relay UEs; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the target 5G ProSe end UE to indicate the user info ID of the candidate 5G ProSe UE-to-UE relay UEs.

#### 10.3.6.c List of target UE IPv6 address

The UE shall include this IE if relay reselection is indicated, and if:

a) the UE acts as a source 5G ProSe end UE and the 5G ProSe direct link is between the source 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the list of link local IPv6 addresses of the target 5G ProSe end UEs.

#### 10.3.6.d List of candidates U2U relay UE layer-2 ID

The UE shall include this IE if relay reselection is indicated, and if:

a) the UE acts as a source 5G ProSe end UE and the 5G ProSe direct link is between the source 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the layer-2 ID of the 5G ProSe UE-to-UE relay UE; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the target 5G ProSe end UE to indicate the layer-2 ID of the 5G ProSe UE-to-UE relay UE.

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

#### 10.3.7.1 Message definition

This message is sent by the UE to another peer UE to indicate that the link modification request is accepted. See table 10.3.7.1.1.

Message type: PROSE DIRECT LINK MODIFICATION ACCEPT

Significance: dual

Direction: UE to peer UE

Table 10.3.7.1.1: PROSE DIRECT LINK MODIFICATION ACCEPT message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | PROSE DIRECT LINK MODIFICATION ACCEPT message identity | ProSe PC5 signalling message type11.3.1 | M | V | 1 |
|  | Sequence number | Sequence number11.3.2 | M | V | 1 |
| 79 | QoS flow descriptions | PC5 QoS flow descriptions11.3.5 | O | TLV-E | 6-65538 |
| 7C | QoS rules | PC5 QoS rules11.3.29 | O | TLV-E | 7-65538 |
| XY | Source end UE info | User info ID11.3.xz | O | TLV | 3-257 |
| XZ | Target end UE info | User info ID11.3.xz | O | TLV | 3-257 |
| BA | Relay reselection indication | Relay reselection indication11.3.xx | O | TV | 1 |
| BB | New 5G ProSe UE-to-UE relay UE info | User info ID11.3.xz | O | TLV | 3-257 |
| BC | Initiating UE IPv6 address | Link local IPv6 address11.3.7 | O | TV | 17 |
| BD | Target UE IPv6 address | Link local IPv6 address11.3.7 | O | TV | 17 |

#### 10.3.7.a Relay reselection indication

The UE shall include this IE if the 5G ProSe direct link modification request for UE-to-UE relay reselection is accepted, and if:

a) the UE acts as a target 5G ProSe end UE and the 5G ProSe direct link is between the target 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the Relay reselection indication to the 5G ProSe UE-to-UE relay UE; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the source 5G ProSe end UE to indicate the Relay reselection indication to the source 5G ProSe end UE.

#### 10.3.7.b New 5G ProSe UE-to-UE relay UE info

The UE shall include this IE if relay reselection is indicated, and if:

a) the UE acts as a target 5G ProSe end UE and the 5G ProSe direct link is between the target 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the user info ID of the new 5G ProSe UE-to-UE relay UE; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the source 5G ProSe end UE to indicate the user info ID of the new 5G ProSe UE-to-UE relay UEs.

#### 10.3.7.c Initiating UE IPv6 address

The UE shall include this IE if relay reselection is indicated, and if:

a) the UE acts as a target 5G ProSe end UE and the 5G ProSe direct link is between the target 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the link local IPv6 address of the source 5G ProSe end UE; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the source 5G ProSe end UE to indicate the link local IPv6 address of the target end UE.

#### 10.3.7.d Target UE IPv6 address

The UE shall include this IE if relay reselection is indicated, and if:

a) the UE acts as a target 5G ProSe end UE and the 5G ProSe direct link is between the target 5G ProSe end UE and the 5G ProSe UE-to-UE relay UE to indicate the link local IPv6 address of the target 5G ProSe end UE; or

b) the UE acts as a 5G ProSe UE-to-UE relay UE and the 5G ProSe direct link is between the 5G ProSe UE-to-UE relay UE and the source 5G ProSe end UE to indicate the link local IPv6 address of the target end UE.

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

#### 10.3.x.1 Message definition

This message is sent by the UE to another peer UE to ack the direct link modification procedure. See table 10.3.x.1.1.

Message type: PROSE DIRECT LINK MODIFICATION ACK

Significance: dual

Direction: UE to peer UE

Table 10.3.x.1.1: PROSE DIRECT LINK MODIFICATION ACK message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | PROSE DIRECT LINK MODIFICATION ACK message identity | ProSe PC5 signalling message type11.3.1 | M | V | 1 |
|  | Sequence number | Sequence number11.3.2 | M | V | 1 |
|  | Relay reselection indication | Relay reselection indication11.3.xx | M | TV | 1 |
|  | Initiating UE IPv6 address | Link local IPv6 address11.3.7 | M | TV | 17 |
|  | Responding UE IPv6 address | Link local IPv6 address11.3.7 | M | TV | 17 |

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