**3GPP TSG-CT WG1 Meeting #133b-eC1-22xxxx**

**E-meeting, 17-21 January 2022 (was C1-220233)**

**Source: ASUSTeK, vivo**

**Title: New cause for ProSe direct link release from AS layer**

**Spec: 3GPP** **TS 24.554 V1.0.0**

**Agenda Item: 17.2.18**

**Document for: Agreement**

**1. Reason for Change**

The following statements were quoted from the running CR of TS38.331 [1] endorsed in RAN2#116 meeting. That is, the path switching from indirect (i.e. accessing network via relay UE) to direct (i.e. accessing network directly) is supported for 5G ProSe L2 remote UE. In case of path switching from indirect to direct, the gNB sends a RRC Reconfiguration with sync message to the 5G ProSe L2 remote UE (as introduced in sub-clause 5.3.5.5.2 in [1]) and the 5G ProSe L2 remote UE then initiates the PC5 RRC connection release procedure (as introduced in sub-clause 5.8.9.5 in [1]). On the other hand, the 5G ProSe L2 relay UE serving this remote UE will also receive a RRC reconfiguration message for releasing this remote UE from the gNB (as introduced in sub-clause 5.3.5.x1.2 in [1]). Similarly, the 5G ProSe L2 relay UE also initiates the PC5 RRC connection release procedure (as introduced in sub-clause 5.8.9.5 in [1]).

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| 5.3.5.5.2 Reconfiguration with syncThe UE shall perform the following actions to execute a reconfiguration with sync.<omitted>1> else (*sl-PathSwitchConfig* is not included):<omitted>2> if the UE is connected with a L2 U2N Relay UE (i.e. the UE is a L2 U2N Remote UE at the source side):3> perform the PC5-RRC connection release as specified in 5.8.9.5.5.3.5.x1 L2 U2N Relay UE configuration5.3.5.x1.1 GeneralThe network configures the L2 U2N Relay UE with relay operation related configurations. For each connected L2 U2N Remote UE indicated in *sl-L2Identity-Remote*, the network provides the configuration parameters used for data relaying.The UE performs the following actions based on a received *sl-L2RelayConfig*:1> if the *sl-L2RelayConfig* contains the *sl-RemoteUE-ToReleaseList*:2> perform the L2 U2N Remote UE release as specified in 5.3.5.x1.2;1> if the *sl-L2RelayConfig* contains the *sl-RemoteUE-ToAddModList*:2> perform the L2 U2N Remote UE addition/modification as specified in 5.3.5.x1.3;5.3.5.x1.2 L2 U2N Remote UE ReleaseThe L2 U2N Relay UE shall:1> if the release is triggered by reception of the *sl-RemoteUE-ToReleaseList*:2> for each *sl-L2Identity-Remote* value included in the *sl-RemoteUE-ToReleaseList*:3> if the current UE has a PC5 RRC connection to a L2 U2N Remote UE with *sl-L2Identity-Remote*:4> perform the PC5-RRC connection release as specified in 5.8.9.5.5.8.9.5 Actions related to PC5-RRC connection release requested by upper layers or AS layerThe UE initiates the procedure when upper layers request the release of the PC5-RRC connection as specified in TS 24.587 [57] or when AS layer releases the the PC5-RRC connection. The UE shall not initiate the procedure for power saving purposes.The UE shall:1> if the PC5-RRC connection release for the specific destination is requested by upper layers, or initiated at the AS:2> discard the NR sidelink communication related configuration of this destination;2> release the DRBs of this destination, in according to sub-clause 5.8.9.1a.1 if any;2> release the SRBs of this destination, in according to sub-clause 5.8.9.1a.3;2> release the sidelink RLC bearers not associated with SL-PDCP of this destination, in according to sub-clause 5.8.9.x1.1;2> reset the sidelink specific MAC of this destination.2> consider the PC5-RRC connection is released for the destination; 1> if the PC5-RRC connection release is initiated at the AS:2> indicate the upper layers the PC5-RRC connection is released for the destination; |

As shown above, both the 5G ProSe L2 remote UE and the 5G ProSe L2 relay UE will indicate the upper layers (i.e. the ProSe layer) the PC5-RRC connection is released when the PC5-RRC connection release is initiated at the AS layer. However, according to the current TS24.554, the ProSe direct link release procedure has not been specified for this release case yet.

We think in this case both the 5G ProSe L2 remote UE and the 5G ProSe L2 relay UE do not need to initiate the ProSe direct link release procedure with two-step signalling exchange. Instead, both the 5G ProSe L2 remote UE and the 5G ProSe L2 relay UE can release the direct link locally upon an indication of PC5-RRC connection release is received from lower layers. Thus, we propose to reflect this release case in the ProSe direct link procedure.

**2. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.554 v1.0.0.

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

7.2.6.1 General

The 5G ProSe direct link release procedure is used to release a secure 5G ProSe direct link between two UEs. The link can be released from either end point. The UE sending the PROSE DIRECT LINK RELEASE REQUEST message is called the "initiating UE" and the other UE is called the "target UE".

If the UE receives an indication of radio link failure or an indication of PC5-RRC connection release from the lower layer, the UE shall release the 5G ProSe direct link locally and may delete the KNRP ID associated with this link after an implementation specific time.

When the direct link between a remote UE and a 5G ProSe UE-to-network relay UE is released, the 5G ProSe layer-3 UE-to-network relay UE shall perform the remote UE report procedure as specified in 3GPP TS 24.501 [11].

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

**3. Reference**

[1] R2-2111490: TS38.331 Running CR, Introduction of Rel-17 Sidelink Relay