**3GPP TSG-WG SA2 Meeting #153E e-meeting *S2-220XXXX***

**Elbonia, October 10 – 17, 2022 (revision of S2-220xxxx)**

**Source: Huawei, HiSilicon**

**Title: KI#7: Evaluation**

**Document for: Approval**

**Agenda Item: 9.26**

**Work Item / Release: FS\_5G\_ProSe\_Ph2 / Rel-18**

*Abstract: This paper proposes the evaluation for KI#7 Support of Emergency for UE-to-Network Relaying.*

# 1. Introduction/Discussion

This KI#7 focuses on Support of Emergency for UE-to-Network Relaying. This contribution provides the overall evaluation for each solution.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-33.

\* \* \* \* First change (all new)\* \* \* \*

## 7.X Key Issue #7: Support of Emergency for UE-to-Network Relaying

For Key Issue #7: "Support of Emergency for UE-to-Network Relaying", based on Table 6.0-1, the following solutions are summarised and evaluated as the following:

- Sol#42 proposes the principles and related procedures for supporting the emergency Services over UE-to-Network Relaying. A dedicated emergency Relay Service Code is configured in both Remote UE and UE-to-Network Relay, and is used during the UE-to-Network Relay Discovery and ProSe Communication via 5G ProSe UE-to-Network Relay. When the UE-to-Network Relay receives the DCR message including the dedicated emergency RSC, Layer-2 UE-to-Network Relay informs AMF and RAN with the emergency service indication, and Layer-3 UE-to-Network Relay sets up or modifies the emergency PDU session for support of Remote UE’s emergency service. Indications of support from the network/RAN are used by the relay to determine whether the network/RAN can support relaying for Layer-2 and/or Layer-3.

- Sol#43 proposes support for emergency services over Layer-2 UE-to-Network Relay and Layer-3 UE-to-Network Relay with N3IWF. The Relay Service Code for emergency services is included in the Relay Authorization parameters. A Layer-2 Relay UE broadcasts the emergency related RSC only if the NG-RAN cell indicates support of emergency services. A Network may use the UE Provided Location Information (UPLI) or Network provided Location Information (NPLI) to get the UE location during an emergency call.

- Sol#44 specifies the emergency services via a 5G ProSe layer-3 UE-to-Network relay without involving N3IWF. A dedicated Relay Service Code associated with emergency services is proposed, and is used in UE-to-Network Relay Discovery and ProSe Communication via 5G ProSe UE-to-Network Relay. Layer-3 UE-to-Network Relay requests the Remote UE to provide identity information and/or location information if the receiving request is for emergency service, and it reports them to the network during the PDU session establishment procedure.

- Sol#45 specifies the principle of emergency service support over Layer-2 UE-to-Network Relay. For the Connection Establishment via Layer-2 UE-to-Network Relay for emergency service, Layer-2 UE-to-Network Relay sets the service request type to "Emergency service" to enter the CM-CONNECTED state. If the 5G ProSe Layer-2 UE-to-Network Relay is already in CM-CONNECTED, it may inform its network of the emergency service for relaying to avoid congestion control. NG-RAN informs the Remote UE’s AMF that the Remote UE is performing relay communication with only emergency service allowed. For the Connection Establishment via Layer-3 UE-to-Network Relay for emergency service, Layer-3 U2N Relay sets the PDU session Request Type to "Emergency Request" for relaying.

- Sol#46 specifies the support emergency services via a 5G ProSe Layer-3 UE-to-network Relay with or without N3IWF. A specific RSC offering emergency service is provisioned. Only the IP type PDU Session is supported to offer emergency service in Layer-3 UE-to-Network Relay, and the PDU session is an emergency PDU session. In the SIP registration, the access type is set to NG-RAN via Layer-3 UE-to-Network Relay.

- Sol#47 propose a dedicated Relay Service Code associated with emergency services for Layer-3 UE-to-Network Relay case. The emergency RSC is used in UE-to-Network Relay Discovery and ProSe Communication via 5G ProSe UE-to-Network Relay. If Remote UE indicates emergency RSC to Layer-3 UE-to-Network Relay, and the Layer-3 UE-to-Network Relay establishes a new emergency PDU session with "Emergency Request" indication.

- Sol#48 addresses how the UE-to Network Relay and Remote UE identify the emergency services from each other. As part of Authorization and Provisioning to UE-to-Network Relay and Remote UE, special Relay Service Code(s) are provided to be associated with emergency service(s).

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