**3GPP TSG-SA5 Meeting #139-e *S5-215171rev1***

**e-meeting, 11 - 20 October 2021**

**Source: CATT**

**Title: pCR Add evaluation and conclusion for 5G ProSe Direct Communication charging**

**Document for: Approval**

**Agenda Item: 7.5.3**

# 1 Decision/action requested

***The group is asked to discuss and agree on the proposal.***

# 2 References

[1] 3GPP TR 32.846: “Study on charging aspects of Proximity-based Services in 5GS”.

# 3 Rationale

This pCR is to add evaluation and conclusion for 5G ProSe Direct Communication charging.

# 4 Detailed proposal

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### 6.2.5 Evaluation

This clause evaluates the solutions for KI#2.1 as following.

- Solution #2.1 and Solution #2.2 provide event-based charging and session-based charging solutions for ProSe Unicast mode, while Solution #2.3 focuses on ProSe Broadcast mode charging and Solution #2.4 focuses on ProSe Groupcast mode charging, and Solution #2.5 proposes ProSe charging solutions for ProSe Direct Communication via UE-to-Network Relay, for both Layer-2 and Layer-3 UE-to-Network Relay.

NOTE 1: For 5G ProSe Direct Communication via Unicast mode, Broadcast mode, Groupcast mode, and Direct Communication via ProSe UE-to-Network Relay, either event based charging or session based charging can be used, depending on configuration of the ProSe Function and CHF.

- When it comes to 5G ProSe Direct Communication over NR based PC5 reference point, distributed CTF architecture is proposed to be utilized. CTF is split into UE (AMC) and 5G DDNMF (ADF), the 5G ProSe enabled UEs send usage information to ProSe NF (e.g., 5G-DDNFM) via PC3ch, then ADF sends the events directly to the CHF or through a CEF.

- The triggers for charging events are identified. When UE(AMC) decides that reporting criteria are met, the CTF (ADF) receives usage information from the CTF (AMC). The Charging reporting is achieved by sending Charging Data Request to the CHF from the ProSe related CTF (e.g., 5G-DDNFM) or CEF.

NOTE 2: For 5G ProSe Direct Communication, the known NF(s) that may support an ADF is 5G DDNMF.

- The charing information in 5G ProSe Direct Communication are captured in these solutions, including UE identity, identities of the transmitters in session (e.g. Source L2 ID and IP address, Target Layer-2 ID), Application specific data, etc.

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### 6.2.6 Conclusion

Based on the evaluation in clause 6.2.5,

- **Solution #2.1** and **Solution #2.2** is the feasible solution for ProSe Unicast mode of Direct Communication charging.

- **Solution #2.3** is the feasible solution for ProSe Broadcast mode of Direct Communication charging.

- **Solution #2.3** is the feasible solution for ProSe Groupcast mode of Direct Communication charging.

- **Solution #2.3** is the feasible solution for ProSe Direct Communication via UE-to-Network Relay charging.

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