**3GPP TSG-CT WG1 Meeting #141eC1-232252**

**Online 17– 21 April 2023**

**Source: Qualcomm Incorporated**

**Title: General section for ranging and sidelink positioning control**

**Spec: 3GPP TS 24.514**

**Agenda item: 18.2.23**

**Document for: Approval**

**1. Introduction**

TS 23.586 specifies architecture enhancement to support ranging based services and sidelink positioning. TS 24.514 specifies the protocol aspect for supporting ranging and sidelink positioning. RSPP will be specified by RAN WG, and the RSPP payload will be transported via NAS layer functionality for ranging and sidelink positioning.

**2. Reason for Change**

It is proposed to introduce general section for ranging and sidelink positioning control and a section for RSPP transport using PC5 communication.

**3. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.514

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\* \* \* First Change \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[ts33533] 3GPP TS 33.533: "Security aspects of ranging based services and sidelink positioning".

[ts24554] 3GPP TS 24.554: "Proximity-services (ProSe) in 5G System (5GS) protocol aspects"

[ts24587] 3GPP TS 24.587: "Vehicle-to-Everything (V2X) services in 5G System (5GS)"

\* \* \* second Change \* \* \* \*

# 4 General description

Any UE supporting ranging and sidelink positioning, e.g. target UE, reference UE, sidelink positioning server UE, supports a ranging and sidelink positioning (RSP) layer. The RSP layer handles service requests received from application layer to control the ranging and sidelink positioning operation.

The RSP layer supports the following functionalities:

a) Provisioning of configuration information and authorization for ranging and sidelink positioning;

b) UE discovery and selection; and

c) Ranging and sidelink positioning communication between UEs or between the UE and the LMF.

Transport of ranging and sidelink positioning protocol (RSPP) payload over PC5-U is supported by the ranging and sidelink positioning communication between UEs over PC5.

NOTE: RSPP is defined in 3GPP TS 38.xxx [ts38xxx]

Editor’s note: The specification number for RSPP (SLPP for RAN) will be added based on RAN WG outcome.

Editor’s note: The protocol used between UE and LMF will be decided by RAN.

The above functions are applicable for both public safety UE and commercial UEs.

The security aspects for 5G ranging and sidelink positioning features are specified in 3GPP TS 33.533 [xx].

\* \* \* Third Change \* \* \* \*

## 7.2 Ranging and sidelink positioning direct communication over PC5

Editor’s Note: This clause will provide description and the procedures for Ranging\_SL direct communication over PC5 .

### 7.2.1 General

Editor’s Note: This clause will provide description for Ranging\_SL direct communication over PC5.

Depending on type of the UE (e.g. V2X capable or 5G ProSe capable), V2X communication procedures as defined in TS 24.587 [ts24587] or 5G ProSe direct communication procedures as defined in 3GPP TS 24.554 [ts24554] are used for ranging and sidelink positioning communication over PC5.

For the RSPP transport between UEs over PC5, the following modification is applied:

a) For V2X capable UEs, V2XP is used to determine the corresponding transport configurations for the RSPP signalling. The V2X service identifier shall take the value(s) defined for "Ranging/SL Positioning Protocol".

b) For 5G ProSe capable UEs, ProSeP is used to determine the corresponding transport configuration for the RSPP signalling. The ProSe identifier shall take the value(s) defined for "Ranging/SL Positioning Protocol".

NOTE: For a UE with both V2X capability and 5G ProSe capability, separate RSPP transport links per the capability are used, i.e., the RSPP transport link over V2X communication is independent with the RSPP transport link over 5G ProSe direct communication.

The RSP layer supports broadcast mode, groupcast mode, and unicast mode PC5 communication depending on the policy and parameter configuration in the UE.

"Non-IP" layer-3 protocol data unit type for V2X capable UEs and "Unstructured" layer-3 protocol data unit type for 5G ProSe capable UEs are used for the transport of RSPP payload.

### 7.2.2 Unicast mode ranging and sidelink positioning direct communication over PC5

Editor’s Note: This clause will provide description of the procedures for unicast mode Ranging\_SL direct communication over PC5.

### 7.2.3 Groupcast mode ranging and sidelink positioning direct communication over PC5

Editor’s Note: This clause will provide description of the procedures for groupcast Ranging\_SL direct communication over PC5.

### 7.2.4 Broadcast mode ranging and sidelink positioning direct communication over PC5

Editor’s Note: This clause will provide description of the procedures for broadcast mode Ranging\_SL direct communication over PC5.

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