**3GPP TSG-CT WG1 Meeting #146C1-240220**

**E-meeting, 22 – 26 January 2024**

**Source: Xiaomi**

**Title: Update on Sidelink positioning server UE discovery and selection**

**Spec: 3GPP TS 24.514 v0.5.0**

**Agenda item: 18.2.23**

**Document for: Agreement**

**1. Introduction**

This p-CR provides udpate on sidellink positioning server UE discovery and selection.

**2. Reason for Change**

For SL positioning server UE discovery and selection, the general description was agreed captured in clause 6.5.1 3GPP TS 24.514 v0.5.0, based on the stage 2 description on SL positioning server UE discovery and selection in clause 5.2.3 clause 5.5 and clause 5.11 3GPP TS 23.586.

1. For UE Positioning assisted by Sidelink Positioning and involving 5GC
	1. in clause 5.5, the following is described:

*The LMF may decide to choose a SL Positioning Server UE, e.g. Target UE, or Located UE, for result calculation, as described in clause 5.3.1.*

* 1. in clause 6.5.3, the following is described:

*It is indicated in step 14 that Network-assisted SL Positioning is applied and optionally the selected SL Positioning Server UE, e.g. Target UE or Located UE, for result calculation.*

1. For UE-only Operation,
	1. In clause 5.11, the following is described:

*When Target UE not as SL Positioning Server UE, the following principles applies:*

*- The Target UE performs the SL Positioning Server UE's discovery and selection.*

* 1. In clause 6.8, the following is described:

*If UE1 does not support SL Positioning Server functionalities or UE1 opts to select a SL Positioning Server UE different from UE1, a SL Positioning Server UE (either co-located with a SL Reference UE/Located UE, or operated by a separate UE) is discovered (if not yet discovered in step 2) and selected.*

When the selecting of SL Positioning Server UE is performed by the LMF, the LMF decide a SL positioning server UE from the related UE(s) e.g. target UE, SL reference UE or located UE involved in the ongoing ranging and sidelink positioning service and sends the selected SL positioning server UE to the target UE, no additional action is required from the target on selecting SL positioning server UE, so the related procedure is not needed and the related description is updated.

When LMF is not involved, the selecting of SL Positioning Server UE is performed by the target UE, the related general description was covered in clause 6.5.1 3GPP TS 24.514 v0.5.0, the related procedure(s) should be covered in stage 3.

**3. Proposal**

It is proposed to agree the following changes to 3GPP TS 24.514 v0.5.0.

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

## 6.5 SL positioning server UE selection

### 6.5.1 General

When ranging and sidelink positioning service is applied, SL positioning server UE is required in the following case:

1. When LMF is not involved, in case of out-of-coverage or for UE-only operation if the serving network does not support ranging and sidelink positioning, SL positioning server UE can be discovered and selected by the target UE, and the SL positioning server UE is used for result calculation, method determination, assistant data distribution and Sidelink reference UE selection; or
2. When LMF is involved, for network-assisted operation, the LMF can decide a SL positioning server UE from the target UE, SL reference UE or located UE involved in the ongoing ranging and sidelink positioning service to execute the result calculation.

In any case requiring SL positioning server UE, the SL positioning server UE discovery is performed by the target UE.

For the SL positioning server UE selection, the following are considered:

1. Selecting the target UE capable of performing SL positioning server UE functionalities and related positioning methods as the SL positioning server UE; and
2. Selecting the SL reference UE or located UE capable of performing SL positioning server UE functionalities and related positioning methods as the SL positioning server UE.

Editor's note: It is FFS whether and how to consider the "UE's information including whether UE is in coverage or not" for UE selection.

Editor's note: It is FFS whether and how to consider the "related positioning methods" of another UE for UE selection.

If LMF performs the SL positioning server UE selection, the LMF sends the selected SL positioning server UE to the target UE.

 \* \* \* Next Change \* \* \* \*

### 6.5.2 Target UE selecting SL positioning server UE

The target UE shall trigger the target UE selecting SL positioning server UE operation if the following conditions are met:

a) the UE is authorised to act as a target UE for ranging and sidelink positioning as specified in clause 5.2.3 and the target UE is not capable of performing SL positioning server UE functionalities and related positioning methods;

b) a list of SL positioning server UE candidate(s) is available based on the following:

1) the monitoring procedure for UE discovery as specified in clause 6.2.2.1 or clause 6.2.2.3 when SL positioning server UE acts as announcing UE; or

Editor’s Note: Whether and how the SL positioning server UE can be triggered to perform the announcing procedure for UE discovery as specified in clause 6.2.2.1 or clause 6.2.2.3 is FFS.

2) the discoverer procedure for UE discovery as specified in clause 6.2.2.2 or clause 6.2.2.4 when SL positioning server UE acts as discoveree UE.

If there is only one SL positioning server UE candidate satisfying the conditions in clause 6.5.2.1.x2, then that SL positioning server UE is selected. If there are more than one SL positioning server UE candidate satisfying the conditions in clause 6.5.2.1.x2, the SL positioning server UE is selected in the following order of decreasing precedence:

1. any SL reference UE or located UE for the ranging and sidelink positioning service capable of performing SL positioning server UE functionalities and related positioning methods; and
2. a UE other than the SL reference UE or located UE for the ranging and sidelink positioning service capable of performing SL positioning server UE functionalities and related positioning methods.

 \* \* \* Next Change \* \* \* \*

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