**3GPP TSG-CT WG1 Meeting #146C1-240219**

**E-meeting, 22 – 26 January 2024**

**Source: Xiaomi**

**Title: Update on Located 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 update on Located UE discovery and selection.

**2. Reason for Change**

For located UE discovery and selection, the general description for Located UE discovery and selection was agreed captured in clause 6.4.1 3GPP TS 24.514 v0.5.0, based on the stage 2 description on located UE discovery and selection in clause 5.2.2 and clause 5.11 3GPP TS 23.586.

Furthermore, the following is indicated in clause 5.2.2 3GPP TS 23.586:

*When LMF determines SL positioning for target UE and trigger the discovery of the Located UE, LMF can decide that LMF or target UE selects Located UEs. If the decision is LMF selecting Located UEs, Target UE sends the multiple discovered candidate Located UEs to the LMF for the selection. After the LMF determines the selected Located UE(s), the LMF sends the selected Located UE(s) to the Target UE.*

And in clause 6.20.2 and clause 6.20.5 3GPP TS 23.273, the following is dscribed:

*After LMF determines that the assistance of Located UE is needed for Target UE Positioning, LMF decides that Target UE or LMF selects Located UE, and SL-MT-LR request also includes the indication of Target UE/LMF selecting Located UE.*

Therefore, the related general description and procedure description for Located UE discovery and selection 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 \* \* \* \*

## 6.4 Located UE selection

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

#### 6.4.2.1 Target UE selecting located UE

##### 6.4.2.1.x1 General

If the UE is authorised to act as a target UE as specified in clause 5.2.3, the located UE selection is performed by target UE in following cases:

a) when the LMF is not involved, and UE-only operation for ranging and sidelink positioning is used (see clause 6.4.2.1.x2); and

b) when the LMF is involved, network-based operation or network-assisted operation for ranging and sidelink positioning is used and the LMF determines the located UE selection is performed by the target UE (see clause 6.4.2.1.x3).

##### 6.4.2.1.x2 Target UE selecting located UE for UE-only operation

The target UE shall select the located UE(s) from the UE(s) which are discovered using:

a) the monitoring procedure for UE discovery as specified in clause 6.2.2.1 or clause 6.2.2.3 when located UE acts as announcing UE;

b) the discoverer procedure for UE discovery as specified in clause 6.2.2.2 or clause 6.2.2.4 when located UE acts as discoveree UE; or

c) both.

Editor’s Note: Whether and how the located 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.

The target UE shall select the located UE(s) if:

a) the UE role in the RSPP metadata in the PROSE PC5 DISCOVERY message indicates the UE supports UE role as a located UE (see 3GPP TS 38.355 [12]);

b) the serving PLMN ID in the PROSE PC5 DISCOVERY message indicating the same PLMN as the serving PLMN of the target UE;

c) the UE's information including whether UE is in coverage or not in the PROSE PC5 DISCOVERY message indicating the same coverage condition as that of the target UE; and

d) the value of capabilities of the located UE(s), which include the supported sidelink positioning methods if available via procedures related to capability transfer over PC5-U as defined in clause 5.1.2 in 3GPP TS 38.355 [12] matches the capabilities of the target UE.

Editor's note: The capabilities exchange happens over PC5-U which is after the PC5 link establishment, so in order to consider the "Capabilities of the candidate located UE(s), which include the supported Sidelink Positioning methods", the PC5 link needs to be established before the selection. If the UE is not selected, the establishment of the PC5 link is only used for capabilities exchange and without any other use. Further check with SA2 is needed for whether and how to consider the "Capabilities of the candidate located UE(s), which include the supported Sidelink Positioning methods" for UE selection.

##### 6.4.2.1.x3 target UE selecting located UE for network-based operation or network-assisted operation

If the located UE selection is triggered by supplementary service message from the LMF with the indication of target UE selecting located UE to the target UE, the target UE shall select the located UE(s) from

a) the UE(s) as specified in clause 6.4.2.1.x2; and

b) the candidate located UE list if received from the LMF.

The target UE shall send the selected located UE(s) based a) and b) above to the LMF.

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

#### 6.4.2.2 LMF selecting located UE

The located UE selection is performed by LMF if the UE is authorised to act as a target UE as specified in clause 5.2.3, the located UE selection is performed by LMF when the LMF is involved, network-based operation or network-assisted operation for ranging and sidelink positioning is used and the LMF determines the located UE selection is performed by the LMF.

If the located UE selection is triggered by supplementary service message from the LMF with the indication of LMF selecting located UE to the target UE, the target UE shall determine the UE(s) as candidate located UE list to be provided to the LMF from the UE(s) which are discovered using:

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

Editor’s Note: Whether and how the located 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 located UE acts as discoveree UE; or

3) both.

The UE is included as located UE candidates from target sent to LMF if:

a) the UE role in the RSPP metadata in the PROSE PC5 DISCOVERY message indicates the UE supports UE role as a located UE (see 3GPP TS 38.355 [12]);

b) the serving PLMN ID in the PROSE PC5 DISCOVERY message indicating the same PLMN as the serving PLMN of the target UE;

c) the UE’s information including whether UE is in coverage or not in the PROSE PC5 DISCOVERY message indicating the same coverage condition as that of the target UE; and

d) the UE is included candidate located UE list from the LMF, if available.

The target UE shall send the candidate located UE(s) list to the LMF in the corresponding response supplementary service message for located UE selection. The LMF shall select the UE(s) as located UE(s) from:

a) the candidate located UE list if received from the target UE;

b) the locally configured candidate located UE list; and

c) the required QoS parameters of the UE in the candidate located UE list satisfies the target UE's QoS parameters for the ranging and sidelink positioning service.

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