# Description

## Title of Invention: Transmission and Reception of Sidelink Positioning Reference Signal

## TECHNICAL FIELD

[1] The present disclosure relates to communication apparatuses and communication methods for transmission and reception of sidelink positioning reference signal (SL-PRS).

## BACKGROUND

[2] Sidelink (SL) positioning has been specified in 3GPP Release 18 Expanded and Improved New Radio (NR) Positioning, as described in WID RP-223549. A work item relating to sidelink positioning is newly introduced into 3GPP in release 18 to support sidelink ranging and positioning with sidelink positioning reference signal (SL-PRS).

[3] However, there has still been no discussion on how transmission and reception of SL-PRS can be implemented.

[4] There is thus a need for communication apparatuses and methods that provide feasible technical solutions for transmission and reception of SL-PRS. Furthermore, other desirable features and characteristics will become apparent from the subsequent detailed description and the appended claims, taken in conjunction with the accompanying drawings and this background of the disclosure.

## SUMMARY

[5] Non-limiting and exemplary embodiments facilitate providing communication apparatuses and methods for transmission and reception of SL-PRS.

[6] According to an aspect of the present disclosure, there is provided a communication apparatus comprising: circuitry, which in operation, generates a

sidelink positioning reference signal (SL-PRS); and a transmitter, which in operation, transmits the SL-PRS based on a signaling.

[7] According to an aspect of the present disclosure, there is provided a communication apparatus comprising: a receiver, which in operation, receives a sidelink positioning reference signal (SL-PRS) based on a signaling; and; circuitry, which in operation, decodes the SL-PRS.

[8] According to an example of the present disclosure, there is provided a first communication apparatus comprising: circuitry, which in operation, generates a signaling indicating a request to transmit or receive a sidelink positioning reference signal (SL-PRS); and a transmitter, which in operation, transmits the signaling to a second communication apparatus.

[9] According to an aspect of the present disclosure, there is provided a communication method comprising: generating a sidelink positioning reference signal (SL-PRS); and transmitting the SL-PRS based on a signaling.

[9a] According to an aspect, the present disclosure refers to an integrated circuitry, comprising: circuitry, which in operation: generates a sidelink positioning reference signal (SL-PRS); and transmits the SL-PRS based on a signaling.

[9a] According to an aspect, the present disclosure refers to an integrated circuitry, comprising: circuitry, which in operation, receives a sidelink positioning reference signal (SL-PRS) based on a signaling; and decodes the SL-PRS.

[10] It should be noted that general or specific embodiments may be implemented as a system, a method, an integrated circuit, a computer program, a storage medium, or any selective combination thereof.

[11] Additional benefits and advantages of the disclosed embodiments will become apparent from the specification and drawings. The benefits and/or advantages may be individually obtained by the various embodiments and features of the specification and drawings, which need not all be provided in order to obtain one or more of such benefits and/or advantages.

## BRIEF DESCRIPTION OF THE DRAWINGS

[12] Embodiments of the disclosure will be better understood and readily apparent to one of ordinary skilled in the art from the following written description, by way of example only, and in conjunction with the drawings, in which:

[13] Fig. 1 shows an exemplary 3GPP NR radio access network (NR-RAN) architecture to which exemplary embodiments of the present disclosure can be applied.