[0005] In a first aspect, there is provided a first terminal device in a radio access network. The first terminal device in the radio access network comprises at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the first terminal device to: transmit, to a second terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using a resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

[0006] In a second aspect, there is provided a second terminal device in a radio access network. The second terminal device in the radio access network comprises at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the second terminal device to: receive, from a first terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using the resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbols dedicated for the control information associated with the SL PRS.

[0007] In a third aspect, there is provided a network device in a radio access network. The network device in the radio access network comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the network device to: transmit to at least one terminal device in the radio access network, configuration information associated with sidelink (SL) positioning sessions for positioning of at least one terminal device in the radio access network, wherein the configuration information indicates whether a resource for control information associated with a SL positioning reference signal (PRS) during the SL positioning sessions is in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

[0008] In a fourth aspect, there is provided a method performed by a first terminal device in a radio access network. The method comprises: transmitting, at a first terminal device in a radio access network to a second terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using a resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel

(PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

[0009] In a fifth aspect, there is provided a method performed by a second terminal device in a radio access network. The method comprises: receiving, at a second terminal device in a radio access network, from a first terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using the resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbols dedicated for the control information associated with the SL PRS.

[0010] In a sixth aspect, there is provided a method performed by a network device in a radio access network. The method comprises: transmitting, at a network device in a radio access network to at least one terminal device in the radio access network, configuration information associated with sidelink (SL) positioning sessions for positioning of at least one terminal device in the radio access network, wherein the configuration information indicates whether a resource for control information associated with a SL positioning reference signal (PRS) during the SL positioning sessions is in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

[0011] In an example, there is provided an apparatus. The apparatus comprising: means for transmitting, at a first terminal device in a radio access network to a second terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using a resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information.

[0012] In an example, there is provided an apparatus. The apparatus comprising: means for receiving, at a second terminal device in a radio access network, from a first terminal device in the radio access network, control information associated with a

sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using the resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbols dedicated for the control information.

[0013] In an example, there is provided an apparatus. The apparatus comprising: means for transmitting, at a network device in a radio access network to at least one terminal device in the radio access network, configuration information associated with sidelink (SL)

positioning sessions for positioning of at least one terminal device in the radio access network.

[0014] In an example, there is provided a non-transitory computer readable medium comprising program instructions for causing an apparatus to perform at least the method in the fourth, fifth, and sixth aspects.

[0015] It is to be understood that the summary section is not intended to identify key or essential features of examples of the present disclosure, nor is it intended to be used to limit the scope of the present disclosure. Other features of the present disclosure will become easily comprehensible through the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] Some example embodiments will now be described with reference to the accompanying drawings, in which:

[0017] FIG. 1 illustrates an example of a network environment in which some example embodiments of the present disclosure may be implemented;

[0018] FIG. 2 illustrates an example of a process flow for transmissions of the control information associated with SL PRS;

[0019] FIG. 3A illustrates an example of a sidelink frame format in accordance with some example embodiments of the present disclosure;

[0020] FIG. 3B illustrates another example of a sidelink frame format in accordance with some example embodiments of the present disclosure;

[0021] FIG. 4 illustrates an example of a slot structure for SL PRS in accordance with some example embodiments of the present disclosure;

[0022] FIG. 5A illustrates another example of a slot structure for SL PRS in accordance with some example embodiments of the present disclosure;

[0023] FIG. 5B illustrates a further example of a slot structure for SL PRS in accordance with some example embodiments of the present disclosure;

[0024] FIG. 6 illustrates a still further example of a slot structure for SL PRS in accordance with some example embodiments of the present disclosure;

WHAT IS CLAIMED IS:

1. A first terminal device in a radio access network, comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the first terminal device to:

transmit, to a second terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using a resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

2. The first terminal device of claim 1, wherein the control information associated with the SL PRS indicates at least one of:

a resource for the SL PRS, the resource for the SL PRS being comprised in at least one of:

at least one Demodulation Reference Signal (DMRS) symbol or at least one symbol dedicated for the SL PRS,

an identifier of a resource pool comprising the resource for the SL PRS, and

an offset indicating the number of slots after which the SL PRS is to be transmitted.

3. The first terminal device of claim 2, the first terminal device is further caused to:

receive, from a network device in the radio access network, configuration information associated with SL positioning sessions for positioning of at least one terminal device in the radio access network; and

determine the resource for the control information associated with the SL PRS and the resource for the SL PRS based on the configuration information.

4. The first terminal device of any of claims 1-3, the first terminal device is further caused to:

transmit, to the second terminal device, the control information associated with the SL PRS, using the resource for the control information associated with the SL PRS in at least one Physical Sidelink Control Channel (PSCCH) symbol.

5. The first terminal device of any of claims 2-4, wherein the first terminal device is an anchor terminal device, the first terminal device is further caused to determine the resource for the SL PRS based on at least one of:

a number of terminal devices in the radio access network in SL positioning sessions,

criticality of the SL positioning session indicated in a positioning quality of service (QoS), and

resource availability at the anchor terminal device.

6. The first terminal device of any of claims 2-5, wherein:

the resource for the control information associated with the SL PRS and the resource the SL PRS are comprised in a resource pool.

7. The first terminal device of any of claims 2-5, wherein:

the resource for the control information associated with the SL PRS and the resource for the SL PRS are comprised in different resource pools.

8. The first terminal device of any of claims 1-7, wherein the control information associated with the SL PRS is comprised in a sidelink control information (SCI).

9. The first terminal device of any of claims 3-8, wherein the configuration information indicates at least one of:

a plurality of slots for SL positioning sessions,

whether the resource for control information associated with the SL PRS is in at least one PSFCH symbol, at least one PSCCH symbol, and at least one symbol dedicated for the control information,

whether the resource for the control information associated with the SL PRS and the resource for the SL PRS are in different resource pools, and

whether the resource for SL PRS is in at least one DRMS symbol or the at least one symbol dedicated for the SL PRS.

10. The first terminal device of claim 9, wherein the configuration information is comprised in a broadcast downlink (DL) radio resource control (RRC) system information block (SIB) message.

11. A second terminal device in a radio access network, comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the second terminal device to:

receive, from a first terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using the resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbols dedicated for the control information associated with the SL PRS.

12. The second terminal device of claim 11, wherein the control information associated with the SL PRS indicates at least one of:

a resource for the SL PRS, the resource for the SL PRS being comprised in at least one of:

at least one Demodulation Reference Signal (DMRS) symbol or at least one symbol dedicated for the SL PRS,

an identifier of a resource pool comprising the resource for the SL PRS, and

an offset indicating the number of slots after which the SL PRS is to be transmitted.

13. The second terminal device of claim 11 or 12, the second terminal device is further caused to:

receive, from a network device in a radio access network, configuration information associated with SL positioning sessions for positioning of at least one terminal device in the radio access network.

14. The second terminal device of any of claims 12-13, the second terminal device is further caused to:

receive, from the first terminal device, the control information using the resource for the control information associated with the SL PRS in at least one Physical Sidelink Control Channel (PSCCH) symbol.

15. The second terminal device of any of claims 12-14, wherein:

the resource for the control information associated with the SL PRS and the resource for the SL PRS are comprised in a resource pool.

16. The second terminal device of any of claims 12-14, wherein:

the resource for the control information associated with the SL PRS and the resource for the SL PRS are comprised in different resource pools.

17. The second terminal device of any of claims 12-16, wherein the control information associated with the SL PRS is comprised in a sidelink control information (SCI).

18. The second terminal device of any of claims 13-17, wherein the configuration information associated with SL PRS indicates at least one of:

a plurality of slots associated with SL positioning sessions,

whether the resource for control information associated with the SL PRS is in at least one PSFCH symbol, at least one PSCCH symbol, and at least one symbol dedicated for the control information associated with the SL PRS, and

whether the resource for the control information associated with the SL PRS and the resource for the SL PRS are in different resource pools.

19. The second terminal device of claim 18, wherein the configuration information is comprised in a broadcast downlink (DL) radio resource control (RRC) system information block (SIB) message.

20. A network device in a radio access network, comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the network device to:

transmit to at least one terminal device in the radio access network, configuration information associated with sidelink (SL) positioning sessions for positioning of at least one terminal device in the radio access network, wherein the configuration information indicates whether a resource for control information associated with a SL positioning reference signal (PRS) during the SL positioning sessions is in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

21. The network device of claim 20, wherein the configuration information indicates at least one of:

a plurality of slots for SL positioning sessions,

whether the resource for the control information associated with the SL PRS and a resource for the SL PRS are in different resource pools, and

whether the resource for the SL PRS is in at least one Demodulation Reference Signal (DMRS) symbol or at least one symbol dedicated for the SL PRS.

22. The network device of any of claims 20-21, wherein the configuration information is comprised in a broadcast downlink (DL) radio resource control (RRC) system information block (SIB) message.

23. A method for wireless communication, comprising:

transmitting, at a first terminal device in a radio access network to a second terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using a resource for the control information associated with the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.

24. A method for wireless communication, comprising:

receiving, at a second terminal device in a radio access network, from a first terminal device in the radio access network, control information associated with a sidelink (SL) positioning reference signal (PRS) during a SL positioning session for positioning of the second terminal device, using the resource for the control information associated with

the SL PRS in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbols dedicated for the control information associated with the SL PRS.

25. A method for wireless communication, comprising:

transmitting, at a network device in a radio access network to at least one terminal device in the radio access network, configuration information associated with sidelink (SL) positioning sessions for positioning of at least one terminal device in the radio access network, wherein the configuration information indicates whether a resource for control information associated with a SL positioning reference signal (PRS) during the SL positioning sessions is in a Physical Sidelink Feedback Channel (PSFCH) symbol or in at least one symbol dedicated for the control information associated with the SL PRS.