

the present application.

FIG. 5 is a schematic flowchart of an ~~first~~ exemplary embodiment of a method for information reporting of sidelink according to the present invention.

FIG. 6 is a schematic diagram of functional modules of an apparatus for information
5 reporting of sidelink according to the present invention.

FIG. 7 is a schematic diagram of a structure of a terminal for information reporting of sidelink according to the present invention.

Realization of objectives, functional features, and advantages of the present invention will be further described in combination with embodiments and with reference to the accompanying
10 drawings.

Detailed Description

Technical solutions in the embodiments of the present application will be described below with reference to accompanying drawings in the embodiments of the present application. It is
15 apparent that the embodiments described are merely a part of the embodiments of the present application, rather than all of the embodiments of the present application. According to the embodiments of the present application, all other embodiments obtained by a person of ordinary skill in the art without making inventive efforts shall fall within the protection scope of the present application.

It should be understood that the technical solutions of the embodiments of the present application may be applied to a Device to Device (D2D) communication system, such as a Vehicle to Everything system based on Long Term Evolution (LTE) for D2D communication, or a New Radio-Vehicle to Everything (NR-V2X) system. Unlike a traditional LTE system in which communication data is received or sent between terminals through a network device (e.g.,
25 a base station), a Vehicle to Everything system adopts a terminal-to-terminal direct communication mode, therefore, has a higher spectrum efficiency and a lower transmission delay.

Optionally, a communication system on which a Vehicle to Everything system is based

Specifically, if the transmitting end may detect whether acknowledgment feedback information fed back by the receiving end is received in the period; if the acknowledgment feedback information sent by the receiving end is received in the period, acknowledgment reporting information (ACK) may be reported to the network through an uplink transmission resource of transmission resources in the period, and the acknowledgment reporting information (ACK) should conform to preset information amount (such as 1 bit).

If the acknowledgment feedback information from the receiving end is not received in the period, a preset amount of negative acknowledgment reporting information is reported to the network.

In this embodiment, if the transmitting end does not receive acknowledgment feedback information (for example, receives negative acknowledgment feedback information or does not receive feedback) sent by the receiving end in the period, negative acknowledgment reporting information (NACK) may be reported to the network through an uplink transmission resource of the period, and the negative acknowledgment reporting information (NACK) should conform to preset information amount (such as 1 bit).

In this way, the transmitting end may transmit a same transmission block in a form of sidelink feedback through transmission resources, and report a preset amount of information according to a feedback situation in each period. A sidelink transmission and information reporting process under the transmission resources is improved, which is conducive to improving integrity and stability of sidelink transmission.

A fourth embodiment of the method for information reporting of sidelink of the present invention is proposed based on the embodiment shown in FIG. 5 above.

In this embodiment, the transmission resources are used for transmitting a plurality of different transmission blocks, wherein the plurality of different transmission blocks include a first transmission block and a second transmission block; and the act S20 further includes: transmitting a first transmission block to the receiving end based on the transmission resources.

In this embodiment, the transmitting end obtains configured grant transmission resources configured by the network, and each period includes a plurality of sidelink transmission resources, and each sidelink transmission resource is followed by a sidelink feedback resource,

Claims:

1. A method for ~~information-reporting of~~sidelink information, comprising:

acquiring, by a transmitting terminal device~~end~~, transmission resources in a period of configured grant from a network device; ~~whereintransmitting a transmission block to a~~
5 ~~receiving end based on the transmission resources~~, the transmission resources arebeing used for sidelink transmission of~~transmitting~~ a same transmission block ~~or a plurality of different transmission blocks~~; and

reporting, by the transmitting terminal device, a preset amount of reporting information to the network device according to a transmission situation and/or ~~a~~feedback information of the
10 sidelink transmissionsituation from ~~at~~the receiving terminal device~~end~~.

2. The method of claim 1, wherein reporting the preset amount of reporting information to the network device according to the transmission situation comprises:

reporting, by the transmitting terminal device, a preset amount of acknowledgment
reporting information to the network device in the period if the transmitting terminal device
15 does not transmit the transmission block to the receiving terminal device based on the transmission resources.

3.2. The method ~~for information-reporting of sidelink~~ of claim 1, wherein the transmission resources are used for the sidelink transmission of a same transmission block~~transmitting a same transmission block,~~

20 ~~transmitting the transmission block to the receiving end based on the transmission resources~~ comprisinges:

transmitting the same transmission block repeatedly to the receiving terminal device~~end~~ based on the transmission resources, wherein the same transmission block transmitted by the transmitting terminal device~~end~~ to the receiving terminal device~~end~~ does not support sidelink
25 feedback;

~~after transmitting the transmission block to the receiving end based on the transmission resources,~~the method further comprises:

stopping transmission when a number of transmissions of the same transmission block

reaches a first threshold or a maximum delay of data is reached.

43. The method ~~for information reporting of sidelink~~ of claim 32, wherein reporting the preset amount of reporting information to the network according to the transmission situation and/or the feedback information of the sidelink transmissionsituation from the receiving terminal deviceend comprises:

reporting a preset amount of acknowledgment reporting information to the network device in the period.

54. The method ~~for information reporting of sidelink~~ of claim 1, wherein the transmission resources are used for the sidelink transmission oftransmitting a same transmission block, _

10 ~~transmitting the transmission block to the receiving end based on the transmission resources~~ comprising:

transmitting the same transmission block to the receiving terminal deviceend based on the transmission resources, wherein the same transmission block transmitted by the transmitting terminal deviceend to the receiving terminal deviceend supports sidelink feedback;

15 ~~after transmitting the transmission block to the receiving end based on the transmission resources,~~ the method further comprises:

detecting whether acknowledgment feedback information fed back by the receiving terminal deviceend is received;

20 stopping transmission if the acknowledgment feedback information fed back by the receiving terminal deviceend is received; ~~and~~

continuing performing the transmitting the transmission block to the receiving terminal deviceend based on the transmission resources if the acknowledgment feedback information fed back by the receiving terminal deviceend is not received.

25 65. The method ~~for information reporting of sidelink~~ of claim 54, wherein reporting the preset amount of reporting information to the network device according to the transmission situation and/or the feedback information of the sidelink transmissionsituation from the receiving terminal deviceend comprises:

detecting whether acknowledgment feedback information fed back by the receiving

terminal deviceend is received in the period;

reporting a preset amount of acknowledgment reporting information to the network device if the acknowledgment feedback information from the receiving terminal deviceend is received in the period;

5 reporting a preset amount of negative acknowledgment reporting information to the network device if the acknowledgment feedback information from the receiving terminal deviceend is not received in the period.

10 ~~6. The method for information reporting of sidelink of claim 1, wherein the transmission resources are used for transmitting a plurality of different transmission blocks, wherein the plurality of different transmission blocks comprise a first transmission block and a second transmission block;~~

~~transmitting the transmission block to the receiving end based on the transmission resources comprises:~~

15 ~~transmitting the first transmission block to the receiving end based on the transmission resources; and~~

~~transmitting the second transmission block to the receiving end based on a remaining resource if acknowledgment feedback information from the receiving end for the first transmission block is received or a number of transmissions of the first transmission block reaches a second threshold, and there is the remaining resource unused in the transmission resources.~~

20

~~7. The method for information reporting of sidelink of claim 6, wherein reporting the preset amount of reporting information to the network according to the transmission situation and/or the feedback situation from the receiving end comprises:~~

25 ~~reporting a preset amount of reporting information to the network according to a transmission situation of the second transmission block and/or a feedback situation from the receiving end for the second transmission block if the first transmission block and the second transmission block are transmitted in the period.~~

~~8. The method for information reporting of sidelink of claim 7, wherein reporting the~~

~~preset amount of reporting information to the network according to the transmission situation of the second transmission block and/or the feedback situation from the receiving end for the second transmission block comprises:~~

5 ~~reporting a preset amount of acknowledgment reporting information to the network if the second transmission block does not support sidelink feedback.~~

~~9. The method for information reporting of sidelink of claim 7, wherein reporting the preset amount of reporting information to the network according to the transmission situation of the second transmission block and/or the feedback situation from the receiving end for the second transmission block comprises:~~

10 ~~determining whether acknowledgment feedback information from the receiving end for the second transmission block is received in the period if the second transmission block supports sidelink feedback;~~

15 ~~reporting a preset amount of acknowledgment reporting information to the network if the acknowledgment feedback information from the receiving end for the second transmission block is received in the period; and~~

~~reporting a preset amount of negative acknowledgment reporting information to the network if the acknowledgment feedback information from the receiving end for the second transmission block is not received in the period.~~

20 ~~10. The method for information reporting of sidelink of claim 1, wherein the transmission resources are used for transmitting a plurality of different transmission blocks, and reporting the preset amount of reporting information to the network according to the transmission situation and/or the feedback situation from the receiving end comprises:~~

25 ~~acquiring feedback information from the receiving end for the plurality of transmission blocks in the period, and performing a binding processing on the feedback information for the plurality of transmission blocks; and~~

~~reporting a preset amount of reporting information to the network according to a result of the binding processing.~~

~~11. The method for information reporting of sidelink of claim 1, wherein the transmission~~

~~resources are used for transmitting a plurality of different transmission blocks, and reporting the preset amount of reporting information to the network according to the transmission situation and/or the feedback situation from the receiving end comprises:~~

~~acquiring feedback information from the receiving end for the plurality of transmission blocks in the period, and acquiring priorities of the plurality of transmission blocks;~~

~~determining target feedback information in the feedback information for the plurality of transmission blocks according to the priorities of the transmission blocks, and reporting a preset amount of reporting information to the network according to the target feedback information.~~

~~12. The method for information reporting of sidelink of claim 1, wherein reporting the preset amount of reporting information to the network according to the transmission situation comprises:~~

~~reporting, by the transmitting end, a preset amount of acknowledgment reporting information to the network in the period if the transmitting end does not transmit the transmission block to the receiving end based on the transmission resources.~~

7. A method for reporting sidelink information, comprising:

allocating, by a network device, transmission resources in a period of a configured grant to a transmitting terminal device, wherein the transmission resources are used for sidelink transmission of a same transmission block; and

receiving, by the network device, a preset amount of reporting information reported by the transmitting terminal device to the network device according to a transmission situation and/or feedback information of the sidelink transmission from a receiving terminal device of the sidelink transmission.

8. The method of claim 7, wherein the transmission resources are used for the sidelink transmission of a same transmission block, comprising:

transmitting the same transmission block repeatedly to the receiving terminal device based on the transmission resources, wherein the same transmission block transmitted by the transmitting terminal device to the receiving terminal device does not support sidelink feedback.

9. The method of claim 7, wherein the transmission resources are used for the sidelink transmission of a same transmission block, comprising:

transmitting the same transmission block to the receiving terminal device based on the transmission resources, wherein the same transmission block transmitted by the transmitting terminal device to the receiving terminal device supports sidelink feedback.

10. A terminal device, configured to implement the method of any one of claims 1 to 6.

11. A network device, configured to implement the method of any one of claims 7 to 9.

13. An apparatus for information reporting of sidelink, comprising:

a resource acquisition module, configured to acquire transmission resources in a period of configured grant from a network;

a transmission module, configured to transmit a transmission block to a receiving end based on the transmission resources, the transmission resources being used for transmitting a same transmission block or a plurality of different transmission blocks; and

a reporting module, configured to report a preset amount of reporting information to the network according to a transmission situation and/or a feedback situation from the receiving end.

14. The apparatus for information reporting of claim 13, wherein the transmission resources are used for transmitting a same transmission block,

the transmission module is further configured to transmit repeatedly the same transmission block to the receiving end based on the transmission resources, wherein the same transmission block transmitted by the transmitting end to the receiving end does not support sidelink feedback;

the apparatus for information reporting further comprises:

a stopping module, configured to stop transmission when a number of transmissions of the same transmission block reaches a first threshold or a maximum delay of data is reached.

15. The apparatus for information reporting of claim 14, wherein the reporting module is further configured to report a preset amount of acknowledgment reporting information to the

network in the period.

~~16. The apparatus for information reporting of claim 13, wherein the transmission resources are used for transmitting a same transmission block,~~

5 ~~the transmission module is further configured to transmit the same transmission block to the receiving end based on the transmission resources, wherein the same transmission block transmitted to the receiving end supports sidelink feedback;~~

~~the apparatus for information reporting further comprises:~~

~~a detection module, configured to detect whether acknowledgment feedback information fed back by the receiving end is received;~~

10 ~~a stopping module, configured to stop transmission if the acknowledgment feedback information fed back by the receiving end is received; and~~

~~the transmission module is further configured to transmit the transmission block to the receiving end based on the transmission resources if the acknowledgment feedback information fed back by the receiving end is not received.~~

15 ~~17. A terminal for information reporting of sidelink, comprising: a memory, a processor, and a computer program stored in the memory and executable by the processor, and following acts are implemented when the computer program is executed by the processor:~~

~~acquiring transmission resources in a period of configured grant from a network;~~

20 ~~transmitting a transmission block to a receiving end based on the transmission resources, the transmission resources being used for transmitting a same transmission block or a plurality of different transmission blocks; and~~

~~reporting a preset amount of reporting information to the network according to a transmission situation and/or a feedback situation from the receiving end.~~

25 ~~18. The terminal for information reporting of claim 17, wherein the transmission resources are used for transmitting a same transmission block,~~

~~transmitting the transmission block to the receiving end based on the transmission resources comprises:~~

~~transmitting the same transmission block repeatedly to the receiving end based on the transmission resources, wherein the same transmission block transmitted by the transmitting end to the receiving end does not support sidelink feedback;~~

5 ~~after transmitting the transmission block to the receiving end based on the transmission resources, further comprising:~~

~~stopping transmission when a number of transmissions of the same transmission block reaches a first threshold or a maximum delay of data is reached.~~

10 ~~19. The terminal for information reporting of claim 18, wherein reporting the preset amount of reporting information to the network according to the transmission situation and/or the feedback situation from the receiving end comprises:~~

~~reporting a preset amount of acknowledgment reporting information to the network in the period.~~

15 ~~20. A readable storage medium, wherein a computer program is stored on the readable storage medium, and when the computer program is executed by a processor, following acts are implemented:~~

~~acquiring transmission resources in a period of configured grant from a network;~~

~~transmitting a transmission block to a receiving end based on the transmission resources, the transmission resources being used for transmitting a same transmission block or a plurality of different transmission blocks; and~~

20 ~~reporting a preset amount of reporting information to the network according to a transmission situation and/or a feedback situation from the receiving end.~~