SIDELINK COMMUNICATION METHOD AND DEVICE

TECHNICAL FIELD

[01] This present disclosure relates to the field of communication technology, particular to a sidelink communication method and apparatus, a communication device, and a computer-readable storage medium.

BACKGROUND

[02] ~~Slidelink~~Sidelink is an end-to-end (D2D) communication technology, which means direct communication between terminals. This technology mainly includes two functions. One is a D2D discovery function, which enables user devices to discover each other in the near-field through a radio frequency (RF) air interface, and the other one is a D2D communication function, which enables the user devices to directly perform data transmission with each other through the RF air interface without routing through a network, and the network is only responsible for resource coordination and security control.

[03] The ~~slidelink~~sidelink-based direct communication supports three transmission methods, namely unicast, multicast, and broadcast.

[04] In order to save device power consumption of a terminal during sidelink communication, sidelink discontinuous reception (DRX) is introduced. For the broadcast and groupcast, sidelink DRX configuration of a receiving terminal is determined based on a type of a service. For the unicast, the sidelink DRX configuration of the receiving terminal is configured by a transmitting terminal or a base station of the transmitting terminal.

[05] However, the usage of the sidelink DRX varies among different terminals, and there are some problems when sidelink communication is performed between terminals based on the sidelink DRX.

SUMMARY

[06] In view of this, the embodiments of the present disclosure proposes a sidelink communication method and apparatus to solve technical problems in the related art.

[07] According to a first aspect of the embodiments of the disclosure, a sidelink

CLAIMS

WHAT IS CLAIMED IS:

1. A sidelink communication method, performed by a first terminal, comprising:

~~while~~ determining that the first terminal performs sidelink communication with a destination address based on a sidelink, and determining whether to not apply a limitation of sidelink discontinuous reception (DRX).

2. The method according to claim 1, wherein determining whether to not apply the limitation of the sidelink DRX comprises:

determining whether a second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists; and

when it is determined~~in response to determining~~ that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists, determining to not apply the limitation of the sidelink DRX.

3. The method according to claim 2, wherein determining whether the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists comprises:

determining a communication standard supported by the second terminal; and

~~in response to~~ determining that at least one second terminal does not support a communication protocol of a designated version, and determining that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists; wherein the designated version is a version that supports usage of the sidelink DRX.

4. The method according to claim 2, wherein determining whether the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists comprises:

receiving system information broadcast by a designated cell; and

determining that~~in response to~~ the system information does not ~~including~~ include a parameter for configuring the sidelink DRX, and determining that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists.

5. The method according to claim 2, wherein determining whether the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists comprises:

receiving system information broadcast by a designated cell; and

determining that~~in response to~~ the system information ~~indicating~~ indicates that the designated cell does not support usage of the sidelink DRX, and determining that the second terminal that is unable to use the sidelink DRX exists.

6. The method according to claim 4 or 5, wherein the designated cell is a cell that matches a communication frequency of the sidelink communication.

7. The method according to claim 4 or 5, wherein the designated cell is at least one of a serving cell and a neighboring cell of the first terminal.

8. The method according to claim 2, wherein determining whether the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists comprises:

obtaining sidelink DRX configuration;

transmitting the sidelink DRX configuration to the second terminal that performs the sidelink communication with the destination address; and

determining that~~in response to~~ at least one second terminal ~~rejecting~~ rejects the sidelink DRX configuration, and determining that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists.

9. The method according to any of claims 1 to 8, wherein determining whether to not apply the limitation of the sidelink DRX comprises:

obtaining a service characteristic of the sidelink communication; and

determining that~~in response to~~ the service characteristic ~~indicating~~ indicates that a service does not support the sidelink DRX, and determining to not apply the limitation of the sidelink DRX.

10. The method according to any of claims 1 to 8, wherein the first terminal is a data transmitting end, and the method further comprises:

in response to determining to not apply the limitation of the sidelink DRX,

transmitting indication information to a base station, wherein the indication information indicates the base station to not apply the limitation of the sidelink DRX for data transmission to the destination address.

11. The method according to any of claims 1 to 8, wherein the first terminal is a data transmitting end, and not applying the limitation of the sidelink DRX comprises:

not applying the limitation of the sidelink DRX while selecting a sidelink resource for transmitting data to the destination address.

12. The method according to any of claims 1 to 8, wherein the first terminal is a data transmitting end, and not applying the limitation of the sidelink DRX comprises:

receiving data transmitted to the destination address in response to not applying the limitation of the sidelink DRX.

13. The method according to any of claims 1 to 8, wherein the destination address is a destination address of sidelink broadcast or sidelink groupcast.

14. A sidelink communication apparatus, applied to a first terminal, comprising:

a communication module, configured to determine that the first terminal performs sidelink communication with a destination address based on a sidelink, and determine whether to not apply a limitation of sidelink discontinuous reception (DRX) ~~while the first terminal performs sidelink communication with a destination address based on a side~~ sidelink.

15. The apparatus according to claim 14, wherein the communication module is configured to:

determine whether a second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists; and

when it is determined~~in response to determining~~ that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists, determine to not apply the limitation of the sidelink DRX.

16. The apparatus according to claim 15, wherein the communication module is configured to:

determine a communication standard supported by the second terminal; and

~~in response to determining~~ determine that at least one second terminal does not support

a communication protocol of a designated version, and determine that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists; wherein the designated version is a version that supports usage of the sidelink DRX.

17. The apparatus according to claim 15, wherein the communication module is configured to:

receive system information broadcast by a designated cell; and

determine that~~in response to~~ the system information does not ~~including~~ includes a parameter for configuring the sidelink DRX, and determine that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists.

18. The apparatus according to claim 15, wherein the communication module is configured to:

receive system information broadcast by a designated cell; and

determine that~~in response to~~ the system information ~~indicating~~ indicates that the designated cell does not support usage of the sidelink DRX, and determine that the second terminal that is unable to use the sidelink DRX exists.

~~19. The apparatus according to claim 15, wherein the communication module is configured to:~~

~~obtain sidelink DRX configuration;~~

~~transmit the sidelink DRX configuration to the second terminal that performs the sidelink communication with the destination address; and~~

~~in response to at least one second terminal rejecting the sidelink DRX configuration, determine that the second terminal that is unable to use the sidelink DRX and that performs sidelink communication with the destination address exists.~~

~~20. The apparatus according to claim 14, wherein the communication module is configured to:~~

~~obtain a service characteristic of the sidelink communication; and~~

~~in response to the service characteristic indicating that a service does not support the sidelink DRX, determine to not apply the limitation of the sidelink DRX.~~

~~21. The apparatus according to claim 14, wherein the first terminal is a data transmitting end, and the apparatus further comprises:~~

~~an indication module, configured to transmit indication information to a base station in response to determining to not apply the limitation of the sidelink DRX, wherein the indication information indicates the base station to not apply the limitation of the sidelink DRX for data transmission to the destination address.~~

~~22. The apparatus according to claim 14, wherein the first terminal is a data transmitting end, and the communication module is configured to:~~

~~not apply the limitation of the sidelink DRX while selecting a sidelink resource for transmitting data to the destination address.~~

~~23. The apparatus according to claim 14, wherein the first terminal is a data transmitting end, and the communication module is configured to:~~

~~receive data transmitted to the destination address in response to not applying the limitation of the sidelink DRX.~~

~~24~~19. A sidelink communication device, comprising:

a processor; and

a memory for storing a computer program executable by the processor;

wherein, when the computer program is executed by the processor, the sidelink communication method according to any one of claims 1 to 13 is performed.

~~25~~20. A computer-readable storage medium having stored thereon~~for storing~~ a computer program that, ~~wherein~~ when ~~the computer program is~~ executed by a processor of a first terminal, causes the first terminal to perform~~the step in~~ the sidelink communication method according to any one of claims 1 to 13 are performed.