CLAIMS

What is claimed is:

1. A method for remote terminal connection management, applied to a relay terminal and comprising:

sending a first relay request to a network-side device, wherein the first relay request is used to request the network-side device to perform relay function–related configuration; and

receiving first configuration information sent by the network-side device, wherein the first configuration information comprises configuration information of a first Uu radio link control RLC bearer, and the first Uu RLC bearer is used to transmit Uu signaling of a remote terminal.

2. The method according to claim 1, wherein the first Uu RLC bearer is a Uu signaling radio bearer SRB RLC bearer or a Uu data radio bearer DRB RLC bearer.

3. The method according to claim 1, wherein if there is more than one remote terminal,

Uu signaling of different remote terminals is transmitted by using different first Uu RLC bearers;

or

Uu signaling of different remote terminals is transmitted by using a same first Uu RLC bearer~~.~~,

or,

~~4. The method according to claim 1,~~ wherein

different types of Uu signaling of a same remote terminal is transmitted by using a same first Uu RLC bearer;

or

different types of Uu signaling of a same remote terminal is transmitted by using different first Uu RLC bearers.

~~5~~4. The method according to claim 3~~ or 4~~, wherein at least one of the following indication information is carried in the Uu signaling or sent simultaneously with the Uu signaling:

an identifier of the remote terminal; and

a type of the Uu signaling.

~~6. The method according to claim 5, wherein whether to carry or send the indication information is configured by the network-side device.~~

~~7~~5. The method according to claim 1, wherein the sending a first relay request to a network-side device comprises:

if the relay terminal is in an idle state, adding the first relay request to a radio resource control RRC connection setup request to be sent to the network-side device, or adding the first relay request to an RRC connection setup complete to be sent to the network-side device, or sending the first relay request through first uplink signaling after RRC connection setup is completed;

and/or

if the relay terminal is in an inactive state, adding the first relay request to an RRC connection resume request to be sent to the network-side device, or adding the first relay request to an RRC connection resume complete to be sent to the network-side device, or sending the first relay request through first uplink signaling after RRC connection resume is completed;

and/or

if the relay terminal is in an RRC connected state, sending the first relay request through first uplink signaling.

~~8~~6. The method according to claim 1, further comprising:

establishing, based on configuration information of a first sidelink sidelink RLC bearer on a relay terminal side, the first sidelink RLC bearer with the remote terminal, wherein the first sidelink RLC bearer is used to transmit Uu signaling of the remote terminal, and the first sidelink RLC bearer has a mapping relationship with the first Uu RLC bearer.

~~9~~7. The method according to claim ~~8~~6, wherein the mapping relationship is configured by the network-side device or the relay terminal~~.~~, or

~~10. The method according to claim 8,~~ wherein the first sidelink RLC bearer is a sidelink DRB bearer or a sidelink SRB RLC bearer~~.~~, or

~~11. The method according to claim 8,~~ wherein before the establishing the first sidelink RLC bearer with the remote terminal, the method further comprises:

sending the configuration information of the first sidelink RLC bearer on a remote terminal side to the remote terminal.

~~12~~8. The method according to claim ~~8 or 11~~6, wherein the configuration information of the first sidelink RLC bearer is determined in at least one of the following manners:

being configured by the network-side device;

being configured by the relay terminal; and

being specified by a protocol~~.~~,

~~13. The method according to claim 12,~~ wherein the being configured by the relay terminal comprises at least one of the following:

being configured by the relay terminal after the relay terminal agrees to provide a relay service for the remote terminal;

being configured by the relay terminal after the relay terminal is accepted by the network-side device as a relay terminal;

being configured by the relay terminal after the relay terminal receives the configuration information of the first Uu RLC bearer;

being configured by the relay terminal based on the configuration information of the first Uu RLC bearer; and

being configured by the relay terminal based on a default parameter of a protocol.

~~14~~9. The method according to claim ~~8 or 11~~6, wherein the configuration information of the first Uu RLC bearer and the configuration information of the first sidelink RLC bearer comprise at least one of the following:

RLC configuration; and

media access control MAC configuration, wherein the MAC configuration comprises at least one of the following: logical channel identifier, logical channel priority, and prioritized bit rate.

~~15~~10. The method according to claim 1, further comprising:

receiving the Uu signaling of the remote terminal from the remote terminal by using a sidelink RRC message~~.~~,

~~16. The method according to claim 15,~~ wherein the sidelink RRC message comprises at least indication information of a type of the Uu signaling, and the type comprises at least one of the following: RRC signaling and non-access stratum NAS signaling.

~~17~~11. The method according to claim 1, wherein the first configuration information further comprises: configuration information of a first Uu DRB RLC bearer, and the first Uu DRB RLC bearer is used to transmit service data of the remote terminal.

~~18~~12. The method according to claim 1, wherein after the sending a first relay request to a network-side device, the method further comprises:

sending a third relay request to the network-side device, wherein the third relay request is used to request the network-side device to configure a Uu RLC bearer for transmitting service data of the remote terminal; and

receiving configuration information of a second Uu DRB RLC bearer sent by the network-side device, wherein the second Uu DRB RLC bearer is used to transmit service data of the remote terminal~~.~~,

wherein the third relay request comprises at least one of the following:

an identifier of the remote terminal; and

service information of the remote terminal.

~~19~~13. The method according to claim 1, wherein the first relay request comprises at least one of the following:

relay indication information, wherein the relay indication information is used to indicate that a current message is the first relay request;

an identifier of the remote terminal;

service information of the remote terminal; and

relay information.

~~20. The method according to claim 18, wherein the third relay request comprises at least one of the following:~~

~~an identifier of the remote terminal; and~~

~~service information of the remote terminal.~~

~~21~~14. The method according to claim ~~19 or 20~~13, wherein the service information comprises at least one of the following:

quality of service flow identifier QFI;

QoS profile;

QoS parameter or QoS indicator;

maximum flow bit rate MBR/MFBR; and

guaranteed flow bit rate GBR/GFBR~~.~~,

or,

~~22. The method according to claim 19,~~ wherein the relay information comprises at least one of the following:

supported relay hop count;

relay architecture option; and

whether a multi-connectivity relay architecture is supported.

~~23~~15. The method according to claim 1, wherein before the sending a first relay request to a network-side device, the method further comprises:

performing a relay related discovery procedure and/or connection establishment procedure between the relay terminal and the remote terminal~~.~~,

~~24. The method according to claim 23,~~ wherein the discovery procedure and/or connection establishment procedure is performed by using a signaling radio bearer of a PC5 link.

~~25. A method for remote terminal connection management, applied to a remote terminal and comprising:~~

~~transmitting Uu signaling of the remote terminal to a relay terminal by using a first sidelink RLC bearer established between the remote terminal and the relay terminal or by using a sidelink RRC message.~~

~~26. The method according to claim 25, wherein the first sidelink RLC bearer is a sidelink DRB bearer or a sidelink SRB RLC bearer.~~

~~27. The method according to claim 25, wherein before the transmitting Uu signaling of the remote terminal to a relay terminal by using a first sidelink RLC bearer established between the remote terminal and the relay terminal, the method further comprises:~~

~~establishing the first sidelink RLC bearer between the remote terminal and the relay terminal based on configuration information of the first sidelink RLC bearer on a remote terminal side.~~

~~28. The method according to claim 27, wherein the configuration information of the first sidelink RLC bearer is determined in at least one of the following manners:~~

~~being configured by a network-side device;~~

~~being configured by the relay terminal; and~~

~~being specified by a protocol.~~

~~29. The method according to claim 27, wherein the configuration information of the first sidelink RLC bearer comprises:~~

~~RLC configuration; and~~

~~MAC configuration, wherein the MAC configuration comprises at least one of the following: logical channel identifier, logical channel priority, and prioritized bit rate.~~

~~30. The method according to claim 25, wherein the sidelink RRC message comprises at least indication information of a type of the Uu signaling of the remote terminal, and the type comprises at least one of the following: RRC signaling and NAS signaling.~~

~~31. The method according to claim 25, further comprising:~~

~~performing a relay related discovery procedure and/or connection establishment procedure between the remote terminal and the relay terminal.~~

~~32. The method according to claim 31, wherein the discovery procedure and/or connection establishment procedure is performed by using a signaling radio bearer of a PC5 link.~~

~~33. The method according to claim 25, further comprising:~~

~~receiving configuration information of a first Uu bearer forwarded by the relay terminal, wherein the configuration information of the first Uu bearer comprises only configuration information of a PDCP layer and an upper layer.~~

~~34~~16. A method for remote terminal connection management, applied to a network-side device and comprising:

receiving a first relay request sent by a relay terminal, wherein the first relay request is used to request the network-side device to perform relay function–related configuration; and

sending first configuration information to the relay terminal based on the first relay request, wherein the first configuration information comprises configuration information of a first Uu RLC bearer, and the first Uu RLC bearer is used to transmit Uu signaling of a remote terminal.

~~35~~17. The method according to claim ~~34~~16, wherein the first Uu RLC bearer is a Uu SRB RLC bearer or a Uu DRB RLC bearer.

~~36~~18. The method according to claim ~~34~~16, wherein if there is more than one remote terminal,

Uu signaling of different remote terminals is transmitted by using different first Uu RLC bearers;

or

Uu signaling of different remote terminals is transmitted by using a same first Uu RLC bearer~~.~~,

or,

~~37. The method according to claim 34,~~ wherein

different types of Uu signaling of a same remote terminal is transmitted by using a same first Uu RLC bearer;

or

different types of Uu signaling of a same remote terminal is transmitted by using different first Uu RLC bearers.

~~38~~19. The method according to claim ~~36 or 37~~18, wherein at least one of the following indication information is carried in the Uu signaling or sent simultaneously with the Uu signaling:

an identifier of the remote terminal; and

a type of the Uu signaling.

~~39. The method according to claim 38, wherein whether to carry or send the indication information is configured by the network-side device.~~

~~40. The method according to claim 34, further comprising:~~

~~sending configuration information of a first sidelink RLC bearer to the relay terminal, wherein the first sidelink RLC bearer is used to transmit Uu signaling of the remote terminal, and the first sidelink RLC bearer has a mapping relationship with the first Uu RLC bearer.~~

~~41. The method according to claim 40, wherein the mapping relationship is configured by the network-side device.~~

~~42. The method according to claim 40, wherein the first sidelink RLC bearer is a sidelink DRB bearer or a sidelink SRB RLC bearer.~~

~~43. The method according to claim 40, wherein the configuration information of the first Uu RLC bearer and the configuration information of the first sidelink RLC bearer comprise at least one of the following:~~

~~RLC configuration; and~~

~~MAC configuration, wherein the MAC configuration comprises at least one of the following: logical channel identifier, logical channel priority, and prioritized bit rate.~~

~~44. The method according to claim 34, wherein the first configuration information further comprises: configuration information of a first Uu DRB RLC bearer, and the first Uu DRB RLC bearer is used to transmit service data of the remote terminal.~~

~~45. The method according to claim 34, wherein after the receiving a first relay request sent by a relay terminal, the method further comprises:~~

~~receiving a third relay request sent by the relay terminal, wherein the third relay request is used to request the network-side device to configure a Uu RLC bearer for transmitting service data of the remote terminal; and~~

~~sending configuration information of a second Uu DRB RLC bearer to the relay terminal based on the third relay request, wherein the second Uu DRB RLC bearer is used to transmit service data of the remote terminal.~~

~~46. The method according to claim 34, further comprising:~~

~~sending configuration information of a first Uu bearer of the network-side device and the remote terminal to the relay terminal, wherein the configuration information of the first Uu bearer comprises only configuration information of a PDCP layer and an upper layer.~~

~~47. A terminal, comprising:~~

~~a first sending module, configured to send a first relay request to a network-side device, wherein the first relay request is used to request the network-side device to perform relay function-related configuration; and~~

~~a first receiving module, configured to receive first configuration information sent by the network-side device based on the first relay request, wherein the first relay request is used to request the network-side device to configure a Uu RLC bearer for transmitting Uu signaling of a remote terminal.~~

~~48. A terminal, comprising:~~

~~a transmission module, configured to transmit Uu signaling of a remote terminal by using a first sidelink RLC bearer established between the remote terminal and a relay terminal or by using a sidelink RRC message.~~

~~49. A network-side device, comprising:~~

~~a first receiving module, configured to receive a first relay request sent by a relay terminal, wherein the first relay request is used to request the network-side device to perform relay function-related configuration; and~~

~~a first sending module, configured to send first configuration information to the relay terminal based on the first relay request, wherein the first configuration information comprises configuration information of a first Uu RLC bearer, and the first Uu RLC bearer is used to transmit Uu signaling of a remote terminal.~~

~~50~~20. A terminal, comprising a processor, a memory, and a program or instructions stored in the memory and capable of running on the processor, wherein when the

program or the instructions are executed by the processor, the steps of the method for remote terminal connection management according to any one of claims 1 to ~~24~~ 15 are implemented.

~~51. A terminal, comprising a processor, a memory, and a program or instructions stored in the memory and capable of running on the processor, wherein when the program or the instructions are executed by the processor, the steps of the method for remote terminal connection management according to any one of claims 25 to 33 are implemented.~~

~~52. A network-side device, comprising a processor, a memory, and a program or instructions stored in the memory and capable of running on the processor, wherein when the program or the instructions are executed by the processor, the steps of the method for remote terminal connection management according to any one of claims 34 to 46 are implemented.~~

~~53. A readable storage medium, wherein a program or instructions are stored in the readable storage medium, and when the program or the instructions are executed by a processor, the steps of the method for remote terminal connection management according to any one of claims 1 to 24 are implemented; or when the program or the instructions are executed by a processor, the steps of the method for remote terminal connection management according to any one of claims 25 to 33 are implemented; or when the program or the instructions are executed by a processor, the steps of the method for remote terminal connection management according to any one of claims 34 to 46 are implemented.~~

~~54. A chip, comprising a processor and a communication interface, wherein the communication interface is coupled to the processor, and the processor is configured to run a program or instructions to implement the steps of the method for remote terminal connection management according to any one of claims 1 to 24; or implement the steps of the method for remote terminal connection management according to any one of claims 25 to 33; or implement the steps of the method for remote terminal connection management according to any one of claims 34 to 46.~~

~~55. A computer software product, wherein the computer software product is stored in a non-volatile storage medium, and the software product is configured to be executed by at least one processor to implement the steps of the method for remote terminal connection management according to any one of claims 1 to 24; or to implement the steps of the method for remote terminal connection management according to any one of claims 25 to 33; or to implement the steps of the method for remote terminal connection management according to any one of claims 34 to 46.~~