

CLAIMS

5 1. A wireless communication method, comprising:

determining, by a terminal device, a first feedback manner for feeding back signal quality of multiple transmit beams of a network device, the first feedback manner being different from another feedback manner supported by the terminal device in at least one of:

10 a receiving capability of receive beams or receive beam groups configured for signal quality feedback, or a number of the receive beams or receive beam groups configured for the signal quality feedback; and

feeding back, by the terminal device, the signal quality to the network device according to the first feedback manner;

15 wherein before determining, by the terminal device, the first feedback manner for feeding back the signal quality of the multiple transmit beams of the network device, the method further comprises:

sending, by the terminal device, second information to the network device according to an existing configuration, a capability of the terminal device and a service
20 requirement of the terminal device, the second information being configured to indicate at least one of:

receiving capabilities of receive beams or receive beam groups supported by the terminal device, a number of the receive beams or the receive beam groups supported by the terminal device, composition manners of the receive beams or the receive beam
25 groups supported by the terminal device, or a number of the composition manners of the receive beams or the receive beam groups supported by the terminal device, each composition manner being indexed to the number of the receive beams or receive beam groups configured for the signal quality feedback;

30 wherein the terminal device is configured by the network device according to the second information.

2. The method of claim 1, wherein the receiving capability of the receive beams or the receive beam groups comprises at least one of a first receiving capability or a second receiving capacity;

in the first receiving capability, the same receive beam or the same receive beam group is capable of simultaneously receiving downlink signals sent by multiple transmit beams; and

5 in the second receiving capability, different receive beams or different receive beam are capable of simultaneously receiving downlink signals sent by different transmit beams.

3. The method of claim 1 or 2, further comprising:

10 receiving, by the terminal device, first information sent by the network device, wherein the first information is to configure at least one of the followings for the terminal device:

15 the receiving capability of the receive beams or receive beam groups configured for the signal quality feedback, the number of the receive beams or receive beam groups configured for the signal quality feedback, or a composition manner of the receive beams or receive beam groups configured for the signal quality feedback, the composition manner being indexed to the number of the receive beams or receive beam groups configured for the signal quality feedback, wherein

determining, by the terminal device, the first feedback manner for feeding back the signal quality of the multiple transmit beams of the network device comprises:

20 determining, by the terminal device, the first feedback manner according to the first information.

4. The method of claim 1, wherein, when the terminal device supports at least two receiving capabilities of the receive beams or the receive beam groups, the second information at least indicates the receiving capabilities of the receive beams or the receive beam groups supported by the terminal device;

the method further comprises:

30 receiving, by the terminal device, third information sent by the network device, wherein the third information is to at least configure the following for the terminal device: the receiving capability of the receive beams or receive beam groups configured for the signal quality feedback; and

determining, by the terminal device, the first feedback manner for feeding back the signal quality of the multiple transmit beams of the network device comprises:

determining the first feedback manner according to the third information.

5. The method of claim 1 or 4, wherein, when the terminal device supports at least two composition manners of the receive beams or the receive beam groups, the second information indicates at least one of the followings: the composition manners of the receive beams or the receive beam groups supported by the terminal device, the number of the receive beams or the receive beam groups supported by the terminal device, or the number of the composition manners of the receive beams or the receive beam groups supported by the terminal device;

10 the method further comprises:

receiving, by the terminal device, fourth information sent by the network device, wherein the fourth information is to configure at least one of the followings for the terminal device: the composition manner of the receive beams or receive beam groups configured for the signal quality feedback, the number of the composition manners of the receive beams or the receive beam groups supported by the terminal device, or the number of the receive beams or receive beam groups configured for the signal quality feedback; and

determining, by the terminal device, the first feedback manner for feeding back the signal quality of the multiple transmit beams of the network device comprises:

20 determining the first feedback manner according to the fourth information.

6. The method of claim 1, wherein, when the terminal device supports one receiving capability of the receive beams or the receive beam groups and the terminal device supports one composition manner of the receive beams or the receive beam groups, determining, by the terminal device, the first feedback manner for feeding back the signal quality of the multiple transmit beams of the network device comprises:

determining, by the terminal device, the first feedback manner according to the second information.

30 7. The method of any one of claims 1 and 4-6, wherein sending, by the terminal device, the second information to the network device comprises:

sending, by the terminal device, a message carrying capability information of the terminal device to the network device, the capability information comprising the

second information.

8. A terminal device, comprising a processing unit and a transceiver unit, wherein
the processing unit is configured to determine a first feedback manner for
5 feeding back signal quality of multiple transmit beams of a network device, the first
feedback manner being different from another feedback manner supported by the
terminal device in at least one of:

a receiving capability of receive beams or receive beam groups configured for
signal quality feedback, or a number of the receive beams or receive beam groups
10 configured for the signal quality feedback; and

the transceiver unit is configured to feed back the signal quality to the network
device according to the first feedback manner;

wherein the transceiver unit is further configured to:

send second information to the network device according to an existing
15 configuration, a capability of the terminal device and a service requirement of the
terminal device, the second information being configured to indicate at least one of:

receiving capabilities of receive beams or receive beam groups supported by the
terminal device, a number of the receive beams or the receive beam groups supported
by the terminal device, composition manners of the receive beams or the receive beam
20 groups supported by the terminal device, or a number of the composition manners of
the receive beams or the receive beam groups supported by the terminal device, each
composition manners being indexed to the number of the receive beams or receive beam
groups configured for the signal quality feedback;

wherein the terminal device is configured by the network device according to
25 the second information.

9. The terminal device of claim 8, wherein the receiving capability of the receive beams
or the receive beam groups comprises at least one of a first receiving capability or a
second receiving capacity;

30 in the first receiving capability, the same receive beam or the same receive beam
group is capable of simultaneously receiving downlink signals sent by multiple transmit
beams; and

in the second receiving capability, different receive beams or different receive

beam groups are capable of simultaneously receiving downlink signals sent by different transmit beams.

10. The terminal device of claim 8 or 9, wherein the transceiver unit is further
5 configured to:

receive first information sent by the network device, wherein the first information is to configure at least one of the followings for the terminal device:

the receiving capability of the receive beams or receive beam groups configured for the signal quality feedback, the number of the receive beams or receive beam groups
10 configured for the signal quality feedback, or a composition manner of the receive beams or receive beam groups configured for the signal quality feedback, the composition manner being indexed to the number of the receive beam or receive beam groups configured for the signal quality feedback; and

the processing unit is further configured to:

15 determine the first feedback manner according to the first information.

11. The terminal device of claim 8, wherein, when the terminal device supports at least two receiving capabilities of the receive beams or the receive beam groups, the second information at least indicates the receiving capabilities of the receive beams or the
20 receive beam groups supported by the terminal device;

the transceiver unit is further configured to:

receive third information sent by the network device, wherein the third information is to at least configure the following for the terminal device: the receiving capability of the receive beams or receive beam groups configured for the signal quality
25 feedback; and

the processing unit is further configured to:

determine the first feedback manner according to the third information.

12. The terminal device of claim 8 or 11, wherein, when the terminal device supports
30 at least two composition manners of the receive beams or the receive beam groups, the second information indicates at least one of the followings: the composition manners of the receive beams or the receive beam groups supported by the terminal device, the number of the receive beams or the receive beam groups supported by the terminal

device, or the number of the composition manners of the receive beams or the receive beam groups supported by the terminal device;

the transceiver unit is further configured to:

- 5 receive fourth information sent by the network device, wherein the fourth information is to configure at least one of the followings for the terminal device: the composition manner of the receive beams or receive beam groups configured for the signal quality feedback, the number of the composition manners of the receive beams or the receive beam groups supported by the terminal device, or the number of the receive beams or receive beam groups configured for the signal quality feedback; and
- 10 the processing unit is further configured to:
determine the first feedback manner according to the fourth information.

13. The terminal device of claim 8, wherein, when the terminal device supports one receiving capability of the receive beams or the receive beam groups and the terminal
- 15 device supports one composition manner of the receive beams or the receive beam groups, the processing unit is further configured to:
determine the first feedback manner according to the second information.

14. The terminal device of claim 8, wherein the second information indicates at least
- 20 one of: the composition manners of the receive beams or the receive beam groups supported by the terminal device, the number of the receive beams or the receive beam groups supported by the terminal device, or the number of the composition manners of the receive beams or the receive beam groups supported by the terminal device.

- 25 15. The terminal device of any one of claims 8 and 11-14, wherein the transceiver unit is further configured to:
send a message carrying capability information of the terminal device to the network device, the capability information comprising the second information.

- 30 16. The terminal device of claim 14, wherein the transceiver unit is further configured to:
sending, by the terminal device, a measurement report for feeding back the signal quality to the network device, wherein the measurement report is configured to

indicate the receiving capabilities of the receive beams or the receive beam groups supported by the terminal device.

17. A network device, comprising a processing unit and a transceiver unit, wherein

5 the processing unit is further configured to generate first information, wherein the first information is to configure a feedback manner in which a terminal device feeds back signal quality of multiple transmit beams of the network device to the network device and the first information is to configure at least one of the followings for the terminal device:

10 a receiving capability of receive beams or receive beam groups configured for signal quality feedback, a number of the receive beams or receive beam groups configured for the signal quality feedback, or a composition manner of the receive beams or receive beam groups configured for the signal quality feedback, the composition manner being indexed to the number of the receive beam or receive beam
15 groups configured for the signal quality feedback; and

 the transceiver unit is further configured to send the first information to the terminal device;

 wherein the transceiver unit is further configured to:

 receive second information sent by the terminal device according to an existing
20 configuration, a capability of the terminal device and a service requirement of the terminal device, the second information being configured to indicate at least one of:

 receiving capabilities of receive beams or receive beam groups supported by the terminal device, a number of the receive beams or the receive beam groups supported by the terminal device, composition manners of the receive beams or the receive beam
25 groups supported by the terminal device, or a number of the composition manners of the receive beams or the receive beam groups supported by the terminal device;

 wherein the network device configures the terminal device according to the second information.

30 18. The network device of claim 17, wherein the processing unit is further configured to determine a first feedback manner for the signal quality feedback of the terminal device, the first feedback manner being different from another feedback manner supported by the terminal device in at least one of:

the receiving capability of the receive beams or receive beam groups configured for the signal quality feedback, or the number of the receive beams or receive beam groups configured for the signal quality feedback, and

- determine a transmit beam for sending a downlink signal to the terminal device
- 5 according to the first feedback manner and a measurement report for the signal quality fed back by the terminal device; and

the transceiver unit is further configured to send the downlink signal via the determined transmit beam.