

CLAIMS

5 1. A signal transmission method, comprising:

receiving beam indication information sent by a network device, the beam indication information being configured to indicate whether the same beam is adopted for N signals to be sent or received and N being an integer greater than 1; and

10 performing transmission of the N signals with the network device according to the beam indication information.

2. The method of claim 1, wherein the beam indication information is configured for indicating that the network device will send the N signals to a terminal device using different beams, and performing transmission of the N signals with the network device according to the beam indication information comprises:

receiving the N signals according to the beam indication information; and

the method further comprises:

15 sending first indication information to the network device, the first indication information being configured to indicate K signals out of the N signals, $1 \leq K \leq N$ and K being an integer.

3. The method of claim 1, wherein the beam indication information is configured for indicating the terminal device to send the N signals to the network device using different beams, and performing transmission of the N signals with the network device according to the beam indication information comprises:

25 sending the N signals according to the beam indication information; and

the method further comprises:

30 receiving second indication information sent by the network device, the second indication information being configured to indicate L signals out of the N signals, $1 \leq L \leq N$ and L being an integer.

4. The method according to claim 3, wherein sending the N signals according to the beam indication information comprises:

sending the N signals using different beams according to the beam indication

information; and

the method further comprises:

determining a beam used for sending a subsequent signal according to the second indication information.

5

5. The method of claim 1, wherein the beam indication information is configured for indicating the terminal device to send the N signals to the network device using the same beam, and performing transmission of the N signals with the network device according to the beam indication information comprises:

10 sending the N signals using the same beam according to the beam indication information.

6. The method of any one of claims 1-5, wherein the N signals are a same type of reference signals with different transmission resource configurations or a same type of channels with different transmission resource configurations.

7. The method of any one of claims 1-6, wherein the N signals are signals activated or deactivated by a same Media Access Control (MAC) signaling, or the N signals are reference signals triggered by a same Downlink Control Information (DCI) signaling, or the N signals are channels scheduled by the same DCI signaling.

8. The method of any one of claims 1-7, wherein the beam indication information is carried in at least one of the following signaling or signals: Radio Resource Control (RRC) signaling, downlink MAC signaling, DCI signaling, a downlink synchronization signal, a downlink random access signal or a downlink pilot signal.

9. The method of claim 8, wherein the RRC signaling is further used to carry transmission resource configuration information corresponding to the N signals, and performing transmission of the N signals with the network device according to the beam indication information comprises:

performing transmission of the N signals with the network device according to the beam indication information and the transmission resource configuration information.

10. The method of any one of claims 1-9, wherein the beam indication information comprises beam information in one-to-one correspondence with each signal in the N signals, and the beam indication information indicates whether the same beam is adopted for the N signals through at least one of the followings:

responsive to determining that contents indicated by beam information for a first signal and a second signal in the N signals are the same, the same beam is adopted to transmit the first signal and the second signal;

responsive to determining that contents indicated by beam information for a third signal and a fourth signal in the N signals are different, different beams are adopted to transmit the third signal and the fourth signal;

responsive to determining that beam information for a fifth signal and a sixth signal in the N signals is a first preconfigured value, the same beam is adopted to transmit the fifth signal and the sixth signal;

responsive to determining that beam information for a seventh signal and an eighth signal in the N signals is a second preconfigured value, different beams are adopted to transmit the seventh signal and the eighth signal, the first preconfigured value being different from the second preconfigured value;

responsive to determining that a content indicated by beam information for a ninth signal in the N signals comprises an index of a tenth signal in the N signals, the same beam is adopted to transmit the ninth signal and the tenth signal; or

responsive to determining that a content indicated by beam information for an eleventh signal in the N signals comprises an index of a twelfth signal in the N signals, different beams are adopted to transmit the eleventh signal and the twelfth signal.

11. The method of any one of claims 1-10, wherein the N signals are at least one type of the following signals: Channel State Information-Reference Signals (CSI-RSs), Sounding Reference Signals (SRSSs), Physical Random Access Channels (PRACHs), synchronization signals, Physical Broadcast Channels (PBCHs), Demodulation Reference Signals (DMRSs) or Beam-specific Reference Signals (BRSSs).

12. A signal transmission method, comprising:

sending beam indication information to a terminal device, the beam indication

information being configured to indicate whether the same beam is adopted for N signals to be sent or received and N being an integer greater than 1; and
performing transmission of the N signals with the terminal device.

5 13. The method of claim 12, wherein the beam indication information is configured for indicating that a network device will send the N signals to the terminal device using different beams;

performing transmission of the N signals with the terminal device comprises:
sending the N signals by using different beams; and

10 the method further comprises:

receiving first indication information sent by the terminal device, the first indication information being configured to indicate K signals out of the N signals, $1 \leq K \leq N$ and K being an integer; and

determining a beam used for sending a subsequent signal according to the first
15 indication information.

14. A terminal device for signal transmission, comprising:

a receiving unit, configured to receive beam indication information sent by a network device, the beam indication information being configured to indicate whether
20 the same beam is adopted for N signals to be sent or received and N being an integer greater than 1; and

a transmission unit, configured to perform transmission of the N signals with the network device according to the beam indication information.

25 15. The terminal device of claim 14, wherein the beam indication information is configured for indicating that the network device will send the N signals to the terminal device using different beams, and the transmission unit is specifically configured to:

receive the N signals according to the beam indication information; and

30 the terminal device further comprises:

a sending unit, configured to send first indication information to the network device, the first indication information being configured to indicate K signals out of the N signals, $1 \leq K \leq N$ and K being an integer.

16. The terminal device of claim 14, wherein the beam indication information is configured for indicating the terminal device to send the N signals to the network device using the same beam, and the transmission unit is specifically configured to:

5 send the N signals using the same beam according to the beam indication information.

17. The terminal device of any one of claims 14-16, wherein the N signals are a same type of reference signals with different transmission resource configurations or a same
10 type of channels with different transmission resource configurations.

18. The terminal device of any one of claims 14-17, wherein the N signals are signals activated or deactivated by a same Media Access Control (MAC) signaling, or the N signals are reference signals triggered by a same Downlink Control Information (DCI)
15 signaling, or the N signals are channels scheduled by the same DCI signaling.

19. The terminal device of any one of claims 14-18, wherein the beam indication information is carried in at least one of the following signaling or signals: Radio Resource Control (RRC) signaling, downlink MAC signaling, DCI signaling, a
20 downlink synchronization signal, a downlink random access signal or a downlink pilot signal.

20. The terminal device of claim 19, wherein the RRC signaling is further used to carry transmission resource configuration information corresponding to the N signals,
25 and the transmission unit is specifically configured to:

 perform transmission of the N signals with the network device according to the beam indication information and the transmission resource configuration information.

21. The terminal device of any one of claims 14-20, wherein the beam indication information comprises beam information in one-to-one correspondence with each signal in the N signals, and the beam indication information indicates whether the same beam is adopted for the N signals through at least one of the followings:

responsive to determining that contents indicated by beam information for a first signal and a second signal in the N signals are the same, the same beam is adopted to transmit the first signal and the second signal;

5 responsive to determining that contents indicated by beam information for a third signal and a fourth signal in the N signals are different, different beams are adopted to transmit the third signal and the fourth signal;

responsive to determining that beam information for a fifth signal and a sixth signal in the N signals is a first preconfigured value, the same beam is adopted to transmit the fifth signal and the sixth signal;

10 responsive to determining that beam information for a seventh signal and an eighth signal in the N signals is a second preconfigured value, different beams are adopted to transmit the seventh signal and the eighth signal, the first preconfigured value being different from the second preconfigured value;

15 responsive to determining that a content indicated by beam information for a ninth signal in the N signals comprises an index of a tenth signal in the N signals, the same beam is adopted to transmit the ninth signal and the tenth signal; and

responsive to determining that a content indicated by beam information for an eleventh signal in the N signals comprises an index of a twelfth signal in the N signals, different beams are adopted to transmit the eleventh signal and the twelfth signal.

20

22. The terminal device of any one of claims 14-21, wherein the N signals are at least one type of the following signals: Channel State Information-Reference Signals (CSI-RSs), Sounding Reference Signals (SRSs), Physical Random Access Channels (PRACHs), synchronization signals, Physical Broadcast Channels (PBCHs),
25 Demodulation Reference Signals (DMRSs) or Beam-specific Reference Signals (BRSs).