

CLAIMS

1. A signal transmission method, comprising:

5 receiving beam indication information sent by a network device through downlink Radio Resource Control, RRC, signaling; and

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

10 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 N is an integer greater than 1,

15 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:

receiving the N signals according to the beam indication information and the transmission resource configuration information; and

the method further comprises:

20 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.

25 2. The method of claim 1, 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.

30 3. The method of claim 1 or 2, 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.

~~4. The method of any one of claims 1-3, 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.

5. The method of claim 4, 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.

64. The method of any one of claims 1-53, 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~~ receive 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 ~~receive~~ 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 ~~receive~~ 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 ~~receive~~ 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 ~~receive~~ 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 ~~receive~~transmit the eleventh signal and the twelfth signal.

- 5 75. The method of any one of claims 1-6, 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), Demodulation Reference Signals (DMRSs) or Beam-specific Reference Signals (BRSs).

10

86. A signal transmission method, comprising:

 sending beam indication information to a terminal device through downlink Radio Resource Control, RRC, signaling; and

 performing transmission of N signals with the terminal device;

15

 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 and N is an integer greater than 1;

wherein the RRC signaling is further used to carry transmission resource configuration information corresponding to the N signals, and performing

20

transmission of the N signals with the terminal device comprises:

 sending the N signals by using different beams according to the transmission resource configuration information; and

 the method further comprises:

25

 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 indication information.

30

97. A terminal device for signal transmission, comprising:

 a receiving unit, configured to receive beam indication information sent by a network device through downlink Radio Resource Control, RRC, signaling; and

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

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

5 and N is an integer greater than 1,

wherein the RRC signaling is further used to carry transmission resource configuration information corresponding to the N signals, and the transmission unit is specifically configured to:

10 receive the N signals according to the beam indication information and the transmission resource configuration information; and

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.

15

~~108.~~ The terminal device of claim ~~97~~, 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.

20 ~~119.~~ The terminal device of claim ~~9-7~~ or ~~108~~, 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.

25 ~~12.~~ The terminal device of any one of claims ~~9-11~~, 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.

30

~~13.~~ The terminal device of claim ~~12~~, wherein the RRC signaling is further used to carry transmission resource configuration information corresponding to the N signals,

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.~~

5

1410. The terminal device of any one of claims 97-139, 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:

10

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~~receive the first signal and the second signal;

15

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 ~~receive~~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 ~~receive~~transmit the fifth signal and the sixth signal;

20

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 ~~receive~~transmit the seventh signal and the eighth signal, the first preconfigured value being different from the second preconfigured value;

25

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 ~~receive~~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 ~~receive~~transmit the eleventh signal and the twelfth signal.

30

1511. The terminal device of any one of claims 97-1410, 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), Demodulation Reference Signals (DMRSs) or Beam-specific Reference Signals (BRSs).