

WHAT IS CLAIMED IS:

1. A method for transmitting data, ~~for performed by~~ a network device, comprising:
 - determining an indication signaling for indicating a data stream combination, the data stream combination comprising a plurality of data streams, the plurality of data streams being grouped into at least two data stream groups, one or more data streams in each of the at least two data stream groups being corresponding to a beam direction; and
 - transmitting the indication signaling.
2. The method as claimed in claim 1, wherein transmitting the indication signaling comprises:
 - transmitting the indication signaling through a first downlink control information (DCI), wherein the first DCI comprises a first bit and the first bit comprises 1 bit; and
 - different values of the first bit are configured to indicate different data stream combinations.
- ~~3. The method as claimed in claim 2, wherein the first bit comprises a bit with a reserved value in the first DCI.~~
43. The method as claimed in claim 1, wherein transmitting the indication signaling comprises:
 - transmitting the indication signaling through a second downlink control information (DCI);
 - wherein the second DCI comprises a second bit and the second bit comprises 2 bits;
 - different values of a bit in the second bit are configured to indicate different data stream combinations; or
 - different values of all the bits in the second bit are configured to indicate different data stream combinations.

~~5. The method as claimed in claim 4, wherein one or more bits of the second bit are one or more bits with reserved values in the second DCI.~~

~~64.~~ The method as claimed in claim 1, wherein transmitting the indication signaling comprises:

transmitting the indication signaling through a first radio resource control (RRC) signaling,

wherein the first RRC signaling is configured to indicate at least one data stream combination.

~~75.~~ The method as claimed in claim 1, wherein transmitting the indication signaling comprises:

transmitting the indication signaling through a second radio resource control (RRC) signaling and a medium access control (MAC) signaling,

wherein the second RRC signaling is configured to indicate N data stream combination sets, the MAC signaling is configured to activate at least one data stream combination set in the N data stream combination sets, and N is a positive integer greater than or equal to 1.

~~86.~~ The method as claimed in claim ~~75~~, wherein each data stream combination set in the N data stream combination sets comprises a data stream combination, the MAC signaling comprises N bits, each bit corresponds to a data stream combination, and at least one data stream combination is activated by setting at least one bit.

~~97.~~ The method as claimed in claim ~~75~~, wherein the MAC signaling comprises M bits, M bits are capable to indicate at least N bit values, and each bit value corresponds to activate a data stream combination set, where M is a positive integer greater than or equal to 1.

~~108.~~ The method as claimed in claim ~~97~~, wherein transmitting the indication signaling further comprises:

transmitting the indication signaling through a third downlink control information (DCI),

wherein the third DCI is configured to indicate a data stream combination in a data stream combination set activated by the MAC signaling.

~~119.~~ A method for transmitting data, ~~for performed by~~ a terminal, comprising:

receiving an indication signaling for indicating a data stream combination, the data stream combination comprising a plurality of data streams, the plurality of data streams being grouped into at least two data stream groups, and one or more data streams in each of the at least two data stream groups being corresponding to a beam direction; and

determining a beam for transmitting each data stream in the data stream combination indicated by the indication signaling based on the data stream combination and transmitting the data stream in the data stream combination using the beam.

~~1210.~~ The method as claimed in claim ~~119~~, wherein receiving the indication signaling comprises:

receiving the indication signaling through a first downlink control information (DCI), wherein the first DCI comprises a first bit and the first bit comprises 1 bit; and different values of the first bit are configured to indicate different data stream combinations.

~~13. The method as claimed in claim 12, wherein the first bit comprises a bit with a reserved value in the first DCI.~~

~~1411.~~ The method as claimed in claim ~~119~~, wherein receiving the indication signaling comprises:

receiving the indication signaling through a second downlink control information (DCI); wherein the second DCI comprises a second bit and the second bit comprises 2 bits; different values of a bit in the second bit are configured to indicate different data stream

combinations; or

different values of all the bits in the second bit are configured to indicate different data stream combinations.

~~15. The method as claimed in claim 14, wherein one or more bits of the second bit are one or more bits with reserved values in the second DCI.~~

~~16~~12. The method as claimed in claim ~~14~~9, wherein receiving the indication signaling comprises:

receiving the indication signaling through a first radio resource control (RRC) signaling, wherein the first RRC signaling is configured to indicate at least one data stream combination.

~~17~~13. The method as claimed in claim ~~14~~9, wherein receiving the indication signaling comprises:

receiving the indication signaling through a second radio resource control (RRC) signaling and a medium access control (MAC) signaling,

wherein the second RRC signaling is configured to indicate N data stream combination sets, the MAC signaling is configured to activate at least one data stream combination set in the N data stream combination sets, and N is a positive integer greater than or equal to 1.

~~18~~14. The method as claimed in claim ~~17~~13, wherein each data stream combination set in the N data stream combination sets comprises a data stream combination, the MAC signaling comprises N bits, each bit corresponds to a data stream combination, and at least one data stream combination is activated by setting at least one bit.

~~19~~15. The method as claimed in claim ~~17~~13, wherein the MAC signaling comprises M bits, M bits are capable to indicate at least N bit values, and each bit value corresponds to activate a data stream combination set, where M is a positive integer greater than or equal to

1.

~~20~~16. The method as claimed in claim ~~19~~15, wherein receiving the indication signaling further comprises:

receiving the indication signaling through a third downlink control information (DCI),
wherein the third DCI is configured to indicate a data stream combination in a data stream combination set activated by the MAC signaling.

~~21. An apparatus for transmitting data, for a network device, comprising:
a determining unit, configured to determine an indication signaling for indicating a data stream combination, the data stream combination comprising a plurality of data streams, the plurality of data streams being grouped into at least two data stream groups, and one or more data streams in each of the at least two data stream groups being corresponding to a beam direction; and~~

~~a transmitting unit, configured to transmit the indication signaling.~~

~~22. The apparatus as claimed in claim 21, wherein the transmitting unit is configured to transmit the indication signaling by:~~

~~transmitting the indication signaling through a first downlink control information (DCI),
wherein the first DCI comprises a first bit and the first bit comprises 1 bit; and
different values of the first bit are configured to indicate different data stream combinations.~~

~~23. The apparatus as claimed in claim 22, wherein the first bit comprises a bit with a reserved value in the first DCI.~~

~~24. The apparatus as claimed in claim 21, wherein the transmitting unit is configured to transmit the indication signaling by:~~

~~transmitting the indication signaling through a second downlink control information~~

~~(DCI);~~

~~wherein the second DCI comprises a second bit and the second bit comprises 2 bits;
different values of a bit in the second bit are configured to indicate different data stream combinations; or~~

~~different values of all the bits in the second bit are configured to indicate different data stream combinations.~~

~~25. The apparatus as claimed in claim 24, wherein one or more bits of the second bit are one or more bits with reserved values in the second DCI.~~

~~26. The apparatus as claimed in claim 21, wherein the transmitting unit is configured to transmit the indication signaling by:~~

~~transmitting the indication signaling through a first radio resource control (RRC) signaling,~~

~~wherein the first RRC signaling is configured to indicate at least one data stream combination.~~

~~27. The apparatus as claimed in claim 21, wherein the transmitting unit is configured to transmit the indication signaling by:~~

~~transmitting the indication signaling through a second radio resource control (RRC) signaling and a medium access control (MAC) signaling,~~

~~wherein the second RRC signaling is configured to indicate N data stream combination sets, the MAC signaling is configured to activate at least one data stream combination set in the N data stream combination sets, and N is a positive integer greater than or equal to 1.~~

~~28. The apparatus as claimed in claim 27, wherein each data stream combination set in the N data stream combination sets comprises a data stream combination, the MAC signaling comprises N bits, each bit corresponds to a data stream combination, and at least one data stream combination is activated by setting at least one bit.~~

~~29. The apparatus as claimed in claim 27, wherein the MAC signaling comprises M bits, M bits are capable to indicate at least N bit values, and each bit value corresponds to activate a data stream combination set, where M is a positive integer greater than or equal to 1.~~

~~30. The apparatus as claimed in claim 29, wherein the transmitting unit is configured to transmit the indication signaling by:~~

~~transmitting the indication signaling through a third downlink control information (DCI),~~

~~wherein the third DCI is configured to indicate a data stream combination in a data stream combination set activated by the MAC signaling.~~

~~31. An apparatus for transmitting data, for a terminal, comprising:~~

~~a receiving unit, configured to receive an indication signaling for indicating a data stream combination, the data stream combination comprising a plurality of data streams, the plurality of data streams being grouped into at least two data stream groups, and one or more data streams in each of the at least two data stream groups correspond to a beam direction; and~~

~~a determining unit, configured to determine a beam for transmitting each data stream in the data stream combination indicated by the indication signaling based on the data stream combination and transmit the data stream in the data stream combination using the beam.~~

~~32. The apparatus as claimed in claim 31, wherein the receiving unit is configured to receive the indication signaling by:~~

~~receiving the indication signaling through a first downlink control information (DCI),~~

~~wherein the first DCI comprises a first bit and the first bit comprises 1 bit; and~~

~~different values of the first bit are configured to indicate different data stream combinations.~~

~~33. The apparatus as claimed in claim 32, wherein the first bit comprises a bit with a reserved value in the first DCI.~~

~~34. The apparatus as claimed in claim 31, wherein the receiving unit is configured to receive the indication signaling by:~~

~~receiving the indication signaling through a second downlink control information (DCI);
wherein the second DCI comprises a second bit and the second bit comprises 2 bits;
different values of a bit in the second bit are configured to indicate different data stream combinations; or~~

~~different values of all the bits in the second bit are configured to indicate different data stream combinations.~~

~~35. The apparatus as claimed in claim 34, wherein one or more bits of the second bit are one or more bits with reserved values in the second DCI.~~

~~36. The apparatus as claimed in claim 31, wherein the receiving unit is configured to receive the indication signaling by:~~

~~receiving the indication signaling through a first radio resource control (RRC) signaling,
wherein the first RRC signaling is configured to indicate at least one data stream combination.~~

~~37. The apparatus as claimed in claim 31, wherein the receiving unit is configured to receive the indication signaling by:~~

~~receiving the indication signaling through a second radio resource control (RRC) signaling and a medium access control (MAC) signaling,~~

~~wherein the second RRC signaling is configured to indicate N data stream combination sets, the MAC signaling is configured to activate at least one data stream combination set in the N data stream combination sets, and N is a positive integer greater than or equal to 1.~~

~~38. The apparatus as claimed in claim 37, wherein each data stream combination set in the N data stream combination sets comprises a data stream combination, the MAC signaling comprises N bits, each bit corresponds to a data stream combination, and at least one data stream combination is activated by setting at least one bit.~~

~~39. The apparatus as claimed in claim 37, wherein the MAC signaling comprises M bits, M bits are capable to indicate at least N bit values, and each bit value corresponds to activate a data stream combination set, where M is a positive integer greater than or equal to 1.~~

~~40. The apparatus as claimed in claim 39, wherein the receiving unit is configured to receive the indication signaling by:~~

~~receiving the indication signaling through a third downlink control information (DCI),
wherein the third DCI is configured to indicate a data stream combination in a data stream combination set activated by the MAC signaling.~~

~~41. A communication system, comprising: the apparatus for transmitting data for the network device according to any one of claims 21-30 and the apparatus for transmitting data for the terminal according to any one of claims 31-40.~~

~~42~~17. A device for transmitting data, for a network device, comprising:
a processor;
a memory configured to store instructions executable by the processor;
wherein, the processor is configured to execute the method for transmitting data according to any one of claims 1-~~40~~8.

~~43~~18. A non-transitory computer-readable storage medium having instructions stored thereon, wherein when the instructions in the storage medium are executed by a processor of a network device, the network device is caused to execute the method for transmitting data according to any one of claims 1-~~40~~8.

4419. A device for transmitting data, for a terminal, comprising:

a processor;

a memory configured to store instructions executable by the processor; wherein, the processor is configured to execute the method for transmitting data according to any one of claims ~~11-20~~9-16.

4520. A non-transitory computer-readable storage medium having instructions stored thereon, wherein when the instructions in the storage medium are executed by a processor of a terminal, the terminal is caused to execute the method for transmitting data according to any one of claims ~~11-20~~9-16.