

WHAT IS CLAIMED IS:

1. A method for determining a default beam, ~~applied in~~performed by a user equipment, comprising:

determining a default beam corresponding to a first control resource set (CORESET) based on a specified rule, wherein a maximum number of transmission configuration indication (TCI) states supported by the first CORESET is ~~greater than or equal to 2~~.

2. The method of claim 1, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:

receiving a medium access control control element (MAC CE), wherein the MAC CE is configured to activate a first beam corresponding to the first CORESET; and

determining the first beam as the default beam corresponding to the first CORESET.

3. The method of claim 2, wherein determining the first beam as the default beam corresponding to the first CORESET comprises:

~~the number of the first beams being one, and the one first beam being determined as the default beam corresponding to the first CORESET; or~~

~~the a~~a number of the first beams being two, and the two first beams being determined as the default beams corresponding to the first CORESET; or

the number of the first beams being two, and one of the two first beams corresponding to a specified transmission and reception point (TRP) being determined as the default beam corresponding to the first CORESET.

4. The method of claim 1, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:

receiving first downlink control information (DCI), wherein the first DCI is configured to indicate a second beam corresponding to the first CORESET; and

determining the second beam as the default beam corresponding to the first CORESET.

5. The method of claim 4, wherein determining the second beam as the default beam corresponding to the first CORESET comprises one of:

determining at least one of the second beams as the default beam corresponding to the first CORESET; or

determining a second beam corresponding to a code point with a minimum value configured to indicate one second beam in the first DCI as the default beam corresponding to the first CORESET; or

determining two second beams corresponding to a code point with a minimum value configured to indicate the two second beams in the first DCI as the default beams corresponding

to the first CORESET; or

determining one second beam corresponding to a specified TRP in two second beams as the default beam corresponding to the first CORESET, the two second beams corresponding to a code point with a minimum value configured to indicate the two second beams in the first DCI.

6. The method of any one of claims 2 to 5, further comprising:

the MAC CE being a MAC CE indicating a dedicated beam of the first CORESET; or

the MAC CE being a MAC CE indicating a common beam of a group including the first CORESET.

7. The method of claim 1, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:

determining a third beam corresponding to a second CORESET with a minimum index value in a latest time unit during which a physical downlink control channel (PDCCH) is to be detected; and

determining the third beam as the default beam ~~according to the third beam~~.

~~8. The method of claim 7, wherein determining the default beam according to the third beam comprises:~~

~~determining the third beam as the default beam; or~~

~~determining the default beam as one of the third beams corresponding to a specified TRP.~~

~~9. The method of claim 1, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:~~

~~determining a first control resource set pool index corresponding to the first CORESET;~~

~~determining a fourth beam corresponding to a third CORESET with a minimum index value in a latest time unit during which a PDCCH is to be detected according to the first control resource set pool index, wherein a control resource set pool index corresponding to the third CORESET is the same as a control resource set pool index corresponding to the first CORESET; and~~

~~determining the default beam according to the fourth beam.~~

~~10. The method of claim 9, wherein determining the default beam according to the fourth beam comprises:~~

~~determining the fourth beam as the default beam; or~~

~~determining the default beam as one of the fourth beams corresponding to a specified TRP.~~

~~11. The method of claim 9, wherein determining the default beam according to the fourth beam comprises:~~

~~determining a fourth beam corresponding to a first specified value as the default beam; or
determining a fourth beam corresponding to a second specified value as the default beam;~~

~~or~~

~~determining at least one fourth beam respectively corresponding to a first specified value
and a second specified value as the default beam.~~

~~12. The method of claim 1, wherein determining the default beam corresponding to the
first CORESET based on the specified rule comprises:~~

~~determining a fifth beam corresponding to a fourth CORESET, the fourth CORESET
having a corresponding control resource set pool index being a third specified value and an
index value being the minimum in a latest time unit during which a PDCCH is to be detected;~~

~~determining a sixth beam corresponding to a fifth CORESET, the fifth CORESET having
a corresponding control resource set pool index being a fourth specified value and an index
value being the minimum in the latest time unit during which the PDCCH is to be detected;
and~~

~~determining the fifth beam and the sixth beam as the default beams.~~

~~138. The method of any one of claims 1 to 127, further comprising:~~

~~receiving a configuration signaling sent by a network device, wherein the configuration
signaling is configured to configure at least one CORESET of the second CORESET, the third
CORESET, the fourth CORESET and the fifth CORESET, and one or more beams
corresponding to each CORESET in the at least one CORESET,~~

~~wherein the configuration signaling comprises at least one of a MAC CE or a DCI.~~

~~14. The method of claim 13, wherein the configuration signaling comprises a MAC CE
and/or a DCI.~~

~~159. The method of claim 1, further comprising:~~

~~transmitting at least one of data and/or reference signals corresponding to the first
CORESET based on the default beam corresponding to the first CORESET.~~

~~1610. The method of claim 159, wherein the data corresponding to the first CORESET
comprises at least one of:~~

~~data carried on a physical downlink shared channel (PDSCH) scheduled by a second DCI
sent on a PDCCH in the first CORESET; and/or~~

~~data carried on a physical uplink shared channel (PUSCH) scheduled by a third DCI sent
on a PDCCH in the first CORESET.~~

~~1711. A method for determining a default beam, applied in performed by a network device,
comprising:~~

determining a default beam corresponding to a first control resource set (CORESET) based on a specified rule, wherein a maximum number of transmission configuration indication (TCI) states supported by the first CORESET is ~~greater than or equal to 2.~~

~~18~~12. The method of claim ~~17~~11, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:

sending a medium access control control element (MAC CE), wherein the MAC CE is configured to activate a first beam corresponding to the first CORESET; and

determining the first beam as the default beam corresponding to the first CORESET.

~~19~~13. The method of claim ~~17~~11, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:

sending first downlink control information (DCI), wherein the first DCI is configured to indicate a second beam corresponding to the first CORESET; and

determining the second beam as the default beam corresponding to the first CORESET.

~~20~~14. The method of any one of claims ~~17-11~~ to ~~19~~13, further comprising:

sending a configuration signaling to a user equipment, wherein the configuration signaling is configured to configure at least one CORESET and one or more beams corresponding to each CORESET in the at least one CORESET.

~~21. An apparatus for determining a default beam, applied in a user equipment, comprising:
a first determining module configured to determine a default beam corresponding to a first control resource set (CORESET) based on a specified rule, wherein a maximum number of transmission configuration indication (TCI) states supported by the first CORESET is greater than or equal to 2.~~

~~22. An apparatus for determining a default beam, applied in a network device, comprising:
a second determining module configured to determine a default beam corresponding to a first control resource set (CORESET) based on a specified rule, wherein a maximum number of transmission configuration indication (TCI) states supported by the first CORESET is greater than or equal to 2.~~

~~23~~15. A user equipment, comprising:

a transceiver;

a memory; and

a processor connected to the transceiver and the memory, respectively, and configured to control wireless signal transmission and reception of the transceiver and perform following operations by executing computer-executable instructions on the memory:

~~determining~~ determine a default beam corresponding to a first control resource set

(CORESET) based on a specified rule, wherein a maximum number of transmission configuration indication (TCI) states supported by the first CORESET is ~~greater than or equal~~ to 2.

~~2416. The user equipment of claim 2315, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises the processor is further configured to:~~

~~receiving receive~~ a medium access control control element (MAC CE), wherein the MAC CE is configured to activate a first beam corresponding to the first CORESET; and

~~determining determine~~ the first beam as the default beam corresponding to the first CORESET.

~~2517. The user equipment of claim 2416, wherein determining the first beam as the default beam corresponding to the first CORESET comprises:~~

~~the number of the first beams being one, and the one first beam being determined as the default beam corresponding to the first CORESET; or~~

~~the a number of the first beams being is two, and the two first beams being are determined as the default beams corresponding to the first CORESET; or~~

~~the number of the first beams being is two, and one of the two first beams corresponding to a specified transmission and reception point (TRP) being is determined as the default beam corresponding to the first CORESET.~~

~~26. The user equipment of claim 23, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:~~

~~receiving first downlink control information (DCI), wherein the first DCI is configured to indicate a second beam corresponding to the first CORESET; and~~

~~determining the second beam as the default beam corresponding to the first CORESET.~~

~~27. The user equipment of claim 26, wherein determining the second beam as the default beam corresponding to the first CORESET comprises:~~

~~determining at least one of the second beams as the default beam corresponding to the first CORESET; or~~

~~determining a second beam corresponding to a code point with a minimum value configured to indicate one second beam in the first DCI as the default beam corresponding to the first CORESET; or~~

~~determining two second beams corresponding to a code point with a minimum value configured to indicate the two second beams in the first DCI as the default beams corresponding to the first CORESET; or~~

~~determining one second beam corresponding to a specified TRP in two second beams as the default beam corresponding to the first CORESET, the two second beams corresponding to a code point with a minimum value configured to indicate the two second beams in the first DCI.~~

~~28. The user equipment of any one of claims 24 to 27, wherein
the MAC CE is a MAC CE indicating a dedicated beam of the first CORESET; or
the MAC CE is a MAC CE indicating a common beam of a group including the first CORESET.~~

~~29. The user equipment of claim 23, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:~~

~~determining a third beam corresponding to a second CORESET with a minimum index value in a latest time unit during which a physical downlink control channel (PDCCH) is to be detected; and~~

~~determining the default beam according to the third beam.~~

~~30. The user equipment of claim 29, wherein determining the default beam according to the third beam comprises:~~

~~determining the third beam as the default beam; or~~

~~determining the default beam as one of the third beams corresponding to a specified TRP.~~

~~31. The user equipment of claim 23, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:~~

~~determining a first control resource set pool index corresponding to the first CORESET;~~

~~determining a fourth beam corresponding to a third CORESET with a minimum index value in a latest time unit during which a PDCCH is to be detected according to the first control resource set pool index, wherein a control resource set pool index corresponding to the third CORESET is the same as a control resource set pool index corresponding to the first CORESET; and~~

~~determining the default beam according to the fourth beam.~~

~~32. The user equipment of claim 31, wherein determining the default beam according to the fourth beam comprises:~~

~~determining the fourth beam as the default beam; or~~

~~determining the default beam as one of the fourth beams corresponding to a specified TRP.~~

~~33. The user equipment of claim 31, wherein determining the default beam according to the fourth beam comprises:~~

~~determining a fourth beam corresponding to a first specified value as the default beam; or~~

determining a fourth beam corresponding to a second specified value as the default beam;
or

determining at least one fourth beam respectively corresponding to a first specified value and a second specified value as the default beams.

34. The user equipment of claim 23, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:

determining a fifth beam corresponding to a fourth CORESET, the fourth CORESET having a corresponding control resource set pool index being a third specified value and an index value being the minimum in a latest time unit during which a PDCCH is to be detected;

determining a sixth beam corresponding to a fifth CORESET, the fifth CORESET having a corresponding control resource set pool index being a fourth specified value and an index value being the minimum in the latest time unit during which the PDCCH is to be detected;
and

determining the fifth beam and the sixth beam as the default beams.

35. The user equipment of any one of claims 23 to 34, wherein the processor is further configured to perform following operations:

receiving a configuration signaling sent by a network device, wherein the configuration signaling is configured to configure at least one CORESET of the second CORESET, the third CORESET, the fourth CORESET and the fifth CORESET, and one or more beams corresponding to each CORESET in the at least one CORESET.

36. The user equipment of claim 35, wherein the configuration signaling comprises a MAC CE and/or a DCI.

37. The user equipment of claim 23, wherein the processor is further configured to perform following operations:

transmitting data and/or reference signals corresponding to the first CORESET based on the default beam corresponding to the first CORESET.

38. The user equipment of claim 37, wherein the data corresponding to the first CORESET comprises at least one of:

data carried on a physical downlink shared channel (PDSCH) scheduled by a second DCI sent on a PDCCH in the first CORESET; and

data carried on a physical uplink shared channel (PUSCH) scheduled by a third DCI sent on a PDCCH in the first CORESET.

39. A network device, comprising:

a transceiver;

a memory; and

a processor connected to the transceiver and the memory, respectively, and configured to perform the method according to any one of claims 11 to 14~~control wireless signal transmission and reception of the transceiver and perform following operations by executing computer-executable instructions on the memory:~~

~~determining a default beam corresponding to a first control resource set (CORESET) based on a specified rule, wherein a maximum number of transmission configuration indication (TCI) states supported by the first CORESET is greater than or equal to 2.~~

~~40. The network device of claim 39, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:~~

~~sending a medium access control control element (MAC CE), wherein the MAC CE is configured to activate a first beam corresponding to the first CORESET; and~~

~~determining the first beam as the default beam corresponding to the first CORESET.~~

~~41. The network device of claim 39, wherein determining the default beam corresponding to the first CORESET based on the specified rule comprises:~~

~~sending first downlink control information (DCI), wherein the first DCI is configured to indicate a second beam corresponding to the first CORESET; and~~

~~determining the second beam as the default beam corresponding to the first CORESET.~~

~~42. The network device of any one of claims 39 to 41, wherein the processor is further configured to perform following operations:~~

~~sending a configuration signaling, wherein the configuration signaling is configured to configure at least one CORESET and one or more beams corresponding to each CORESET in the at least one CORESET.~~

~~43~~19. A computer storage medium having stored therein computer-executable instructions that, when executed by a processor, cause the processor to perform the method of according to any one of claims 1 to 16~~10, or any one of claims 17 to 20 to be implemented.~~

20. A non-transitory computer storage medium having stored therein computer-executable instructions that, when executed by a processor, cause the processor to perform the method according to any one of claims 11 to 14.