

WHAT IS CLAIMED IS:

1. A method for resource allocation, applicable to a network device, comprising:
 - determining a second bandwidth part, BWP based on idle bandwidth units, BWUs, detected by each of at least two antenna panels in a first BWP; and
 - transmitting an indication signaling, wherein the indication signaling is configured to indicate that the second BWP is taken as an active BWP, and/or to indicate a channel idle state of each BWU in the second BWP;
 - wherein the indication signaling is configured to indicate that the second BWP is taken as the active BWP, and the method further comprises:
 - transmitting a first downlink resource scheduling instruction, wherein the first downlink resource scheduling instruction is configured to schedule resource blocks, RBs, for the terminal to receive downlink information.
2. The method of claim 1, wherein the idle BWUs detected by each of the at least two antenna panels in the first BWP comprise identical BWUs;
 - selecting one or more BWUs as a first subset of BWUs from a first BWU set composed of the identical BWUs, and determining the second BWP based on the first subset of BWUs.
3. The method of claim 2, wherein determining the second BWP based on the first subset of BWUs comprises:
 - determining the second BWP based on spectrum position continuity of each BWU in the first subset of BWUs.
4. The method of claim 3, wherein the first subset of BWUs comprises BWUs with consecutive spectrum positions;
 - determining the second BWP based on spectrum position continuity of each BWU in the first subset of BWUs comprises: determining the second BWP based on the BWUs with consecutive spectrum positions in the first subset of BWUs.
5. The method of claim 3, wherein the first subset of BWUs comprises BWUs with inconsecutive spectrum positions;
 - determining the second BWP based on spectrum position continuity of each BWU in the first subset of BWUs comprises:
 - preliminarily determining a second BWP based on BWUs with consecutive spectrum

positions in the first subset of BWUs; and

obtaining a finally determined second BWP by adding BWUs whose spectrum positions are not consecutive with the preliminarily determined second BWP to the preliminarily determined second BWP, wherein a number of idle BWUs is greater than or equal to a number of busy BWUs in the added BWUs.

6. The method of claim 1, wherein the idle BWUs detected by each of the at least two antenna panels in the first BWP comprise different BWUs;

selecting one or more BWUs as a second subset of BWUs from a second set of BWUs composed of all the idle BWUs detected by each antenna panel in the first BWP, and determining the second BWP based on the second subset of BWUs.

7. The method of claim 1, wherein the idle BWUs detected by each of the at least two antenna panels in the first BWP comprise different BWUs;

selecting one or more BWUs as a third subset of BWUs from a third set of BWUs composed of all the idle BWUs detected by a designated antenna panel of the antenna panels in the first BWP, and determining the second BWP based on the third subset of BWUs.

8. The method of claim 7, wherein a number of idle BWUs detected by the designated antenna panel is the largest, and the idle BWUs have optimal spectrum position continuity.

9. The method of claim 1, wherein the indication signaling comprises the channel idle state set for each BWU in the second BWP, and the channel idle state is configured to characterize whether a channel of the BWU is idle;

a number of channel idle states corresponding to each BWU is 1, or the number of channel idle states corresponding to each BWU is N, where N is a positive integer being less than or equal to a number of antenna panels of the network device.

10. The method of claim 1, wherein the indication signaling is configured to indicate the channel idle state of each BWU in the second BWP, or the indication signaling is configured to indicate that the second BWP is taken as the active BWP and the channel idle state of each BWU in the second BWP, and the method further comprises:

transmitting a second downlink resource scheduling instruction, wherein the second downlink resource scheduling instruction is configured to schedule the terminal to receive downlink information through resource blocks, RBs, belonging to BWUs in an idle state rather

than through RBs belonging to BWUs in a non-idle state.

11. The method of claim 7 or 8, wherein the method further comprises:

deactivating other antenna panels except the designated antenna panel among the antenna panels, and transmitting a deactivation signaling; or

transmitting a third downlink resource scheduling instruction, wherein the third downlink resource scheduling instruction is configured to characterize a transmission configuration indication, TCI, state of the designated antenna panel, and not characterize TCI states of the other antenna panels except the designated antenna panel.

12. A method for resource allocation, applicable to a terminal, comprising:

receiving an indication signaling, wherein the indication signaling is configured to indicate that a second bandwidth part, BWP, is taken as an active BWP, and/or to indicate a channel idle state of each bandwidth unit, BWU, in the second BWP;

wherein the indication signaling is configured to indicate that the second BWP is taken as the active BWP, and the method further comprises:

receiving a first downlink resource scheduling instruction; and

receiving downlink information through resource blocks, RBs, scheduled by the first downlink resource scheduling instruction;

wherein the indication signaling comprises the channel idle state set for each BWU in the second BWP, and the channel idle state is configured to characterize whether a channel of the BWU is idle;

a number of channel idle states corresponding to each BWU is 1, or the number of channel idle states corresponding to each BWU is N, where N is a positive integer being less than or equal to a number of antenna panels of a network device.

13. The method of claim 12, wherein the indication signaling is configured to indicate the channel idle state of each BWU in the second BWP, or the indication signaling is configured to indicate that the second BWP is taken as the active BWP and the channel idle state of each BWU in the second BWP, and the method further comprises:

receiving a second downlink resource scheduling instruction; and

receiving downlink information through resource blocks, RBs, belonging to BWUs in an idle state rather than through RBs belonging to BWUs in a non-idle state scheduled by the

second downlink resource scheduling instruction.

14. The method of claim 12, wherein the method further comprises:

receiving a deactivation signaling, wherein the deactivation signaling is configured to deactivate other antenna panels except a designated antenna panel among the antenna panels of the network device; or

receiving a third downlink resource scheduling instruction, wherein the third downlink resource scheduling instruction is configured to characterize a transmission configuration indication, TCI, state of the designated antenna panel and not characterize TCI states of the other antenna panels except the designated antenna panel.

15. An apparatus for resource allocation, applicable to a network device, comprising:

a processing unit configured to determine a second bandwidth part, BWP based on idle bandwidth units, BWUs, detected by each of at least two antenna panels in a first BWP; and

a transmission unit configured to transmit an indication signaling, wherein the indication signaling is configured to indicate that the second BWP is taken as an active BWP, and/or to indicate a channel idle state of each BWU in the second BWP;

wherein the indication signaling is configured to indicate that the second BWP is taken as the active BWP, and the transmission unit is further configured to:

transmit a first downlink resource scheduling instruction, wherein the first downlink resource scheduling instruction is configured to schedule resource blocks, RBs, for the terminal to receive downlink information.

16. The apparatus of claim 15, wherein the idle BWUs detected by each of the at least two antenna panels in the first BWP comprise identical BWUs;

the processing unit is configured to select one or more BWUs as a first subset of BWUs from a first BWU set composed of the identical BWUs, and determine the second BWP based on the first subset of BWUs.

17. The apparatus of claim 16, wherein the processing unit is configured to determine the second BWP based on the first subset of BWUs by:

determining the second BWP based on spectrum position continuity of each BWU in the first subset of BWUs.

18. The apparatus of claim 17, wherein the first subset of BWUs comprises BWUs with

consecutive spectrum positions;

the processing unit is configured to determine the second BWP based on spectrum position continuity of each BWU in the first subset of BWUs by:

determining the second BWP based on the BWUs with consecutive spectrum positions in the first subset of BWUs.

19. The apparatus of claim 17, wherein the first subset of BWUs comprises BWUs with inconsecutive spectrum positions;

the processing unit is configured to determine the second BWP based on spectrum position continuity of each BWU in the first subset of BWUs by:

preliminarily determining a second BWP based on BWUs with consecutive spectrum positions in the first subset of BWUs; and

obtaining a finally determined second BWP by adding BWUs whose spectrum positions are not consecutive with the preliminarily determined second BWP to the preliminarily determined second BWP, wherein a number of idle BWUs is greater than or equal to a number of busy BWUs in the added BWUs.

20. The apparatus of claim 15, wherein the idle BWUs detected by each of the at least two antenna panels in the first BWP comprise different BWUs;

the processing unit is configured to select one or more BWUs as a second subset of BWUs from a second set of BWUs composed of all the idle BWUs detected by each antenna panel in the first BWP, and determining the second BWP based on the second subset of BWUs.

21. The apparatus of claim 15, wherein the idle BWUs detected by each of the at least two antenna panels in the first BWP comprise different BWUs;

the processing unit is configured to select one or more BWUs as a third subset of BWUs from a third set of BWUs composed of all the idle BWUs detected by a designated antenna panel of the antenna panels in the first BWP, and determining the second BWP based on the third subset of BWUs.

22. The apparatus of claim 21, wherein a number of idle BWUs detected by the designated antenna panel is the largest, and the idle BWUs have optimal spectrum position continuity.

23. The apparatus of claim 15, wherein the indication signaling comprises the channel idle state set for each BWU in the second BWP, and the channel idle state is configured to

characterize whether a channel of the BWU is idle;

a number of channel idle states corresponding to each BWU is 1, or the number of channel idle states corresponding to each BWU is N, where N is a positive integer being less than or equal to a number of antenna panels of the network device.

24. The apparatus of claim 15, wherein the indication signaling is configured to indicate the channel idle state of each BWU in the second BWP, or the indication signaling is configured to indicate that the second BWP is taken as the active BWP and the channel idle state of each BWU in the second BWP, the transmission unit is further configured to:

transmit a second downlink resource scheduling instruction, wherein the second downlink resource scheduling instruction is configured to schedule the terminal to receive downlink information through resource blocks, RBs, belonging to BWUs in an idle state, and not to receive downlink information through RBs belonging to BWUs in a non-idle state.

25. The apparatus of claim 21 or 22, wherein the processing unit is further configured to: deactivate other antenna panels except the designated antenna panel among the antenna panels, and transmitting a deactivation signaling; or

the transmission unit is further configured to transmit a third downlink resource scheduling instruction, wherein the third downlink resource scheduling instruction is configured to characterize a transmission configuration indication, TCI, state of the designated antenna panel, and not characterize TCI states of the other antenna panels except the designated antenna panel.

26. An apparatus for resource allocation, applicable to a terminal, comprising:

a receiving unit, configured to receive an indication signaling, wherein the indication signaling is configured to indicate that the second bandwidth part, BWP, is taken as an active BWP, and/or to indicate a channel idle state of each bandwidth unit, BWU, in the second BWP;

wherein the indication signaling is configured to indicate that the second BWP is taken as the active BWP, and the receiving unit is further configured to receive a first downlink resource scheduling instruction; and receive downlink information through resource blocks, RBs, scheduled by the first downlink resource scheduling instruction;

wherein the indication signaling comprises the channel idle state set for each BWU in the second BWP, and the channel idle state is configured to characterize whether a channel of the BWU is idle;

a number of channel idle states corresponding to each BWU is 1, or the number of channel idle states corresponding to each BWU is N, where N is a positive integer being less than or equal to a number of antenna panels of a network device.

27. The apparatus of claim 26, wherein the indication signaling is configured to indicate the channel idle state of each BWU in the second BWP, or the indication signaling is configured to indicate that the second BWP is taken as the active BWP and the channel idle state of each BWU in the second BWP, the receiving unit is further configured to:

- receive a second downlink resource scheduling instruction;

- receive downlink information through resource blocks, RBs, belonging to BWUs in an idle state rather than through RBs belonging to BWUs in a non-idle state scheduled by the second downlink resource scheduling instruction.

28. The apparatus of claim 26, wherein the receiving unit is further configured to:

- receive a deactivation signaling, wherein the deactivation signaling is configured to deactivate other antenna panels except a designated antenna panel among the antenna panels;

or

- receive a third downlink resource scheduling instruction, wherein the third downlink resource scheduling instruction is configured to characterize a transmission configuration indication, TCI, state of the designated antenna panel and not characterize TCI states of the other antenna panels except the designated antenna panel

29. A device for resource allocation, comprising:

- a processor; and

- a memory for storing instructions executable by the processor;

wherein the processor is configured to execute the method for resource allocation according to any one of claims 1-11.

30. A non-transitory computer-readable storage medium, when instructions in the storage medium are executed by a processor of a network device, the network device is caused to execute the method for resource allocation according to any one of claims 1 to 11.

31. A device for resource allocation, comprising:

- a processor; and

- a memory for storing instructions executable by the processor;

wherein the processor is configured to execute the method for resource allocation according to any one of claims 12 to 14.

32. A non-transitory computer-readable storage medium, when instructions in the storage medium are executed by a processor of a terminal, the terminal is caused to execute the method for resource allocation according to any one of claims 12 to 14.