

CLAIMS

What is claimed is:

1. A search space monitoring method, wherein the method is executed by a terminal device, a plurality of transmission objects are configured for the terminal device, and the method comprises:

obtaining scheduling configuration information; and

monitoring a search space SS based on the scheduling configuration information, wherein the SS comprises an SS in which at least two transmission objects schedule one transmission object.

2. The method according to claim 1, wherein the plurality of transmission objects comprise at least a first transmission object and a second transmission object, and the SS being monitored comprises at least one of the following:

a first SS in which the first transmission object is self-scheduled;

a second SS in which the second transmission object schedules the first transmission object; and

a third SS in which the second transmission object is self-scheduled.

3. The method according to claim 2, wherein at least one of the following is satisfied within a first specific time:

a processing capability for monitoring the first SS does not exceed a maximum processing capability for a single transmission object; and

a total processing capability for monitoring the second SS and the third SS does not exceed a maximum processing capability for a single transmission object; and

a total processing capability for monitoring the second SS and the third SS does not exceed L multiplied by a maximum processing capability for a single transmission object, wherein L is a positive number.

4. The method according to claim 3, wherein L is less than or equal to the number of transmission objects scheduled by the second transmission object.

5. The method according to claim 3, wherein

L is predefined; or

L is related to a maximum processing capability M reported by the terminal device.

6. The method according to claim 1, wherein

5 a processing capability threshold X_i is assigned to the i-th transmission object A_i in the at least two transmission objects, and X_i does not exceed a maximum processing capability for a single transmission object; and

within a second specific time, a processing capability for an SS in which the A_i schedules one transmission object does not exceed X_i .

10 7. The method according to claim 6, wherein at least two of the X_i satisfy the following relationship:

$$\sum_1^N X_i = R; \text{ wherein}$$

N is a quantity of the at least two transmission objects, and N is greater than or equal to 2; and

15 R is a maximum processing capability determined based on at least one of parameters of the at least two transmission objects; or

R is a maximum processing capability determined based on a parameter of the one transmission object that is scheduled; or

R is a maximum processing capability reported by the terminal device.

20 8. The method according to claim 6, wherein at least two of the X_i satisfy the following relationship:

$$\sum_1^N \frac{X_i}{P_i} = 1; \text{ wherein}$$

N is a quantity of the at least two transmission objects, and N is greater than or equal to 2; and

P_i is a maximum processing capability determined based on a parameter of the A_i .

9. The method according to claim 1, wherein

a processing capability G_i is assigned to the i-th transmission object A_i in the
 5 at least two transmission objects, and G_i does not exceed a maximum processing capability for a single transmission object; and

within a third specific time, a processing capability for an SS in which the A_i schedules one transmission object is G_i .

10. The method according to claim 9, wherein at least two of the G_i satisfy the
 10 following relationship:

$$\sum_{i=1}^N G_i \leq S; \text{ wherein}$$

N is a quantity of the at least two transmission objects, and N is greater than or equal to 2; and

S is a maximum processing capability determined based on at least one of
 15 parameters of the at least two transmission objects; or

S is a maximum processing capability determined based on a parameter of the one transmission object that is scheduled.

~~11. The method according to claim 9, wherein at least two of the G_i satisfy the following relationship:~~

20 ~~$$\sum_{i=1}^N \frac{G_i}{Q_i} \leq 1; \text{ wherein}$$~~

~~N is a quantity of the at least two transmission objects, and N is greater than or equal to 2; and~~

~~Q_i is a maximum processing capability determined based on a parameter of the A_i .~~

~~12. The method according to claim 1, wherein, within a fourth specific time, for the i -th transmission object A_i in the at least two transmission objects, a processing capability for monitoring an SS in which the A_i schedules one transmission object does not exceed a maximum processing capability for the A_i .~~

~~13. The method according to claim 1, wherein a processing capability for monitoring the SS is related to at least one of the following:~~

~~a specific downlink control information DCI format or size; a specific SS; a parameter of the transmission object; a configured quantity of the plurality of transmission objects; and a control resource set CORESET identifier.~~

~~14~~11. The method according to claim 3, 6, or 9, ~~or 12~~, wherein at least one of the first specific time, the second specific time, and the third specific time, ~~and the fourth specific time~~ comprises one of the following:

a specific time point;

at least one slot;

one time interval;

within a valid time of a monitoring timer; and

a physical downlink control channel PDCCH monitoring opportunity, wherein earliest starting positions of schedulable physical downlink shared channels PDSCCHs or physical uplink shared channels PUSCHs corresponding to the PDCCH monitoring opportunity are the same.

~~15~~12. The method according to claim 1, wherein the scheduling configuration information is used to configure at least one of the following:

configuration of the plurality of transmission objects, an SS to be monitored, and a DCI format for scheduling.

~~16~~13. The method according to claim 1, wherein before the obtaining scheduling configuration information, the method further comprises: sending a terminal capability, wherein the terminal capability comprises at least one of the following:

whether monitoring on scheduling of one transmission object by at least two transmission objects is supported;

a maximum processing capability for monitoring at least two transmission objects;

- 5 an earliest starting position of a schedulable PDSCH or PUSCH;
- a length of a specific time interval; and
- a length of a monitoring timer.

4714. A search space monitoring method, wherein the method is executed by a network device, and the method comprises:

- 10 sending scheduling configuration information; wherein
- the scheduling configuration information is used for monitoring an SS by a terminal device, a plurality of transmission objects are configured for the terminal device, and the SS comprises an SS in which at least two transmission objects schedule one transmission object.

- 15 **4815**. The method according to claim **4714**, wherein the plurality of transmission objects comprise at least a first transmission object and a second transmission object, and the SS being monitored comprises at least one of the following:

- a first SS in which the first transmission object is self-scheduled;
- 20 a second SS in which the second transmission object schedules the first transmission object; and
- a third SS in which the second transmission object is self-scheduled.

- 4916**. The method according to claim **4714**, wherein before the sending scheduling configuration information, the method further comprises: receiving a
- 25 terminal capability, wherein the terminal capability comprises at least one of the following:

- whether monitoring on scheduling of one transmission object by at least two transmission objects is supported;
- a maximum processing capability for monitoring at least two transmission
- 30 objects;

an earliest starting position of a schedulable PDSCH or PUSCH;
a length of a specific time interval; and
a length of a monitoring timer.

2017. A terminal device, wherein a plurality of transmission objects are
configured for the terminal device, and the terminal device comprises:

an obtaining module, configured to obtain scheduling configuration information;
and

a monitoring module, configured to monitor an SS based on the scheduling
configuration information, wherein the SS comprises an SS in which at least two
transmission objects schedule one transmission object.

~~21. The terminal device according to claim 20, wherein the plurality of
transmission objects comprise at least a first transmission object and a second
transmission object, and the SS being monitored comprises at least one of the
following:~~

~~a first SS in which the first transmission object is self-scheduled;
a second SS in which the second transmission object schedules the first
transmission object; and
a third SS in which the second transmission object is self-scheduled.~~

~~22. The terminal device according to claim 21, wherein at least one of the
following is satisfied within a first specific time:~~

~~a processing capability for monitoring the first SS does not exceed a maximum
processing capability for a single transmission object;~~

~~a total processing capability for monitoring the second SS and the third SS does
not exceed a maximum processing capability for a single transmission object; and~~

~~a total processing capability for monitoring the second SS and the third SS does
not exceed L multiplied by a maximum processing capability for a single
transmission object, wherein L is a positive number.~~

~~23. The terminal device according to claim 22, wherein L is less than or equal to
the number of transmission objects scheduled by the second transmission object.~~

~~24. The terminal device according to claim 22, wherein~~

~~L is predefined; or~~

~~L is related to a maximum processing capability M reported by the terminal device.~~

~~25. The terminal device according to claim 20, wherein~~

~~a processing capability threshold A_i is assigned to the i-th transmission object X_i in the at least two transmission objects, and X_i does not exceed a maximum processing capability for a single transmission object; and~~

~~within a second specific time, a processing capability for an SS in which the A_i schedules one transmission object does not exceed X_i .~~

~~26. The terminal device according to claim 25, wherein~~

~~at least two of the X_i satisfy the following relationship:~~

$$\sum_{i=1}^N X_i \leq R; \text{ wherein}$$

~~N is a quantity of the at least two transmission objects, and N is greater than or equal to 2; and~~

~~R is a maximum processing capability determined based on at least one of parameters of the at least two transmission objects; or~~

~~R is a maximum processing capability determined based on a parameter of the one transmission object that is scheduled; or~~

~~R is a maximum processing capability reported by the terminal device.~~

~~27. The terminal device according to claim 25, wherein~~

~~at least two of the X_i satisfy the following relationship:~~

$$\sum_{i=1}^N \frac{X_i}{P_i} = 1; \text{ wherein}$$

~~N is a quantity of the at least two transmission objects, and N is greater than or equal to 2; and~~

~~P_i is a maximum processing capability determined based on a parameter of the A_i .~~

28. The terminal device according to claim 20, wherein
a processing capability A_i is assigned to the i-th transmission object G_i in the
at least two transmission objects, and G_i does not exceed a maximum processing
capability for a single transmission object; and
within a third specific time, a processing capability for an SS in which the A_i
schedules one transmission object is G_i .

29. The terminal device according to claim 28, wherein
at least two of the G_i satisfy the following relationship:

$$\sum_{i=1}^N G_i \leq S; \text{ wherein}$$

N is a quantity of the at least two transmission objects, and N is greater than or
equal to 2; and

S is a maximum processing capability determined based on at least one of
parameters of the at least two transmission objects; or

S is a maximum processing capability determined based on a parameter of the
one transmission object that is scheduled.

30. The terminal device according to claim 28, wherein
at least two of the G_i satisfy the following relationship:

$$\sum_{i=1}^N \frac{G_i}{Q_i} \leq 1; \text{ wherein}$$

N is a quantity of the at least two transmission objects, and N is greater than or
equal to 2; and

Q_i is a maximum processing capability determined based on a parameter of the
 A_i .

31. The terminal device according to claim 28, wherein, within a fourth specific time, for the i -th transmission object A_i in the at least two transmission objects, a processing capability for monitoring an SS in which the A_i schedules one transmission object does not exceed a maximum processing capability for the A_i .

32. The terminal device according to claim 20, wherein a processing capability for monitoring the SS is related to at least one of the following:

a specific downlink control information DCI format or size; a specific SS; a parameter of the transmission object; a configured quantity of the plurality of transmission objects; and a control resource set CORESET identifier.

33. The terminal device according to claim 22, 25, 28, or 31, wherein at least one of the first specific time, the second specific time, the third specific time, and the fourth specific time comprises one of the following:

a specific time point;

at least one slot;

one time interval;

within a valid time of a monitoring timer; and

a physical downlink control channel PDCCH monitoring opportunity, wherein earliest starting positions of schedulable physical downlink shared channels PDSCHs or physical uplink shared channels PUSCHs corresponding to the PDCCH monitoring opportunity are the same.

34. The terminal device according to claim 20, wherein the scheduling configuration information is used to configure at least one of the following:

configuration of the plurality of transmission objects, an SS to be monitored, and a DCI format for scheduling.

35. The terminal device according to claim 20, wherein the terminal device further comprises a sending module, configured to send a terminal capability, and the terminal capability comprises at least one of the following:

~~whether monitoring on scheduling of one transmission object by at least two transmission objects is supported;~~

~~a maximum processing capability for monitoring at least two transmission objects;~~

~~an earliest starting position of a schedulable PDSCH or PUSCH;~~

~~a length of a specific time interval; and~~

~~a length of a monitoring timer.~~

~~3618. A network device, comprising:~~

~~a sending module, configured to send scheduling configuration information;~~

~~wherein~~

~~the scheduling configuration information is used for monitoring an SS by a terminal device, a plurality of transmission objects are configured for the terminal device, and the SS comprises an SS in which at least two transmission objects schedule one transmission object.~~

~~37. The network device according to claim 36, wherein the plurality of transmission objects comprise at least a first transmission object and a second transmission object, and the SS being monitored comprises at least one of the following:~~

~~a first SS in which the first transmission object is self-scheduled;~~

~~a second SS in which the second transmission object schedules the first transmission object; and~~

~~a third SS in which the second transmission object is self-scheduled.~~

~~38. The network device according to claim 36, wherein the network device further comprises a receiving module, configured to receive a terminal capability, and the terminal capability comprises at least one of the following:~~

~~whether monitoring on scheduling of one transmission object by at least two transmission objects is supported;~~

~~a maximum processing capability for monitoring at least two transmission objects;~~

~~an earliest starting position of a schedulable PDSCH or PUSCH;~~

~~a length of a specific time interval; and~~

~~a length of a monitoring timer.~~

~~39~~19. A terminal device, comprising a memory, a processor, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the search space monitoring method according to any one of claims 1 to ~~46~~13 are implemented.

~~40~~20. A network device, comprising a memory, a processor, and a computer program stored in the memory and capable of running on the processor, wherein when the computer program is executed by the processor, the steps of the search space monitoring method according to any one of claims ~~17~~14 to ~~19~~16 are implemented.

~~41. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed by a processor, the steps of the search space monitoring method according to any one of claims 1 to 19 are implemented.~~

~~42. A computer program product, wherein the computer program product is executed by at least one processor to implement the search space monitoring method according to any one of claims 1 to 19.~~

~~43. A search space monitoring apparatus, wherein the apparatus is configured to perform the search space monitoring method according to any one of claims 1 to 19.~~