CLAIMS

What is claimed is:

1. A monitoring method, applied to a terminal device and comprising:

monitoring a physical downlink control channel PDCCH based on information of an activated target object, wherein

the target object is a carrier or a cell and a PDCCH processing capability of the terminal device is allocated between the activated target objects; and

a subcarrier spacing SCS of the activated target object is determined based on an activated downlink BWP of the activated target object, and the PDCCH processing capability of the terminal device is associated with the SCSs of the activated target objects.

2. The method according to claim 1, wherein when state change indication signaling of a first target object is received at a first moment, the monitoring a physical downlink control channel PDCCH based on information of an activated target object comprises:

starting monitoring the PDCCH from a second moment based on information of the activated target object after a state change of the first target object.

3. The method according to claim 2, wherein the second moment is determined based on the first moment and at least one of the following:

state change delay of the first target object, response delay of the state change indication signaling, and first preset delay.

4. The method according to claim 3, wherein the second moment is at least one of the following:

the first moment, a sum of the first moment and the state change delay, a response delay of the state change indication signaling, and a sum of the first moment, the response delay, and the state change delay.

5. The method according to claim 2, wherein the state change indication signaling is at least one of the following:

activation signaling, deactivation signaling, and signaling used to indicate a change of an activated downlink bandwidth part BWP of the first target object.

6. The method according to claim 1, wherein when a state timer of a second target object expires at a third moment, the monitoring a physical downlink control channel PDCCH based on information of an activated target object comprises:

starting monitoring the PDCCH from a fourth moment based on information of the activated target object after a state change of the second target object.

7. The method according to claim 6, wherein the fourth moment is determined based on the third moment and at least one of the following:

state change delay of the second target object and second preset delay.

8. The method according to claim 7, wherein the fourth moment is:

the third moment or a sum of the third moment and the state change delay.

9. The method according to claim 1, wherein the monitoring a physical downlink control channel PDCCH based on information of an activated target object comprises:

determining a PDCCH monitoring processing capability based on a quantity of activated target objects, wherein

the PDCCH monitoring processing capability comprises: a maximum PDCCH monitoring processing capability of the terminal device, and/or a maximum PDCCH monitoring processing capability for each target object in the activated target objects.

10. The method according to claim 9, wherein when the activated target objects have same subcarrier spacing SCS, the maximum PDCCH monitoring processing capability of the terminal device is:

$$\min(S, Y) \times P, wherein$$

S is the quantity of activated target objects, Y is a supported blind detection capability reported by the terminal device, and P is a maximum quantity of PDCCH candidates that are to be blindly detected in a slot or a maximum quantity of non-overlapping control channel elements CCEs required by the terminal device to perform blind detection.

11. The method according to claim 9, wherein when the activated target objects have different SCSs, the maximum PDCCH monitoring processing capability of the terminal device is:

$$\min\left\{\mathrm{S} \times P, \left\lfloor \mathrm{Y} \times P \times S^{\mu} \Big/ \sum_{\mu=0}^{3} S^{\mu} \right\rfloor\right\}, \text{wherein}$$

S is the quantity of activated target objects, Y is a supported blind detection capability reported by the terminal device, P is a maximum quantity of PDCCH candidates that are to be blindly detected in a slot or a maximum quantity of non-overlapping CCEs required by the terminal device to perform blind detection, μ is SCS configuration supported by the terminal

device, and S^{μ} is a quantity of target objects of each SCS configuration μ.

12. The method according to claim 1, wherein the monitoring a physical downlink control channel PDCCH based on information of an activated target object comprises:

allocating and/or monitoring a search space set and/or a PDCCH candidate of all activated target objects based on the quantity of activated target objects and/or a sequence of identifiers of the activated target objects.

13. The method according to claim 1, wherein the monitoring a physical downlink control channel PDCCH based on information of an activated target object comprises:

monitoring the PDCCH on a search space set of a first activated cell when the first activated cell is not scheduled by another activated cell across carriers; or

when a second activated cell is scheduled by another activated cell across carriers, monitoring the PDCCH on a search space set that is of a scheduling cell of the second activated cell and that is associated with the second activated cell, and/or a PDCCH candidate that is associated with the second activated cell.

14. A terminal device, comprising:

a monitoring module, configured to monitor a PDCCH based on information of an activated target object, wherein

the target object is a carrier or a cell and a PDCCH processing capability of the terminal device is allocated between the activated target objects; and

a subcarrier spacing SCS of the activated target object is determined based on an activated downlink BWP of the activated target object, and the PDCCH processing capability of the terminal device is associated with the SCSs of the activated target objects.

15. The terminal device according to claim 14, wherein the monitoring module comprises:

a determining module, configured to determine a PDCCH monitoring processing capability based on a quantity of activated target objects, wherein

the PDCCH monitoring processing capability comprises: a maximum PDCCH monitoring processing capability of the terminal device, and/or a maximum PDCCH monitoring processing capability for each target object in the activated target objects.

16. The terminal device according to claim 15, wherein . when the activated target objects have same subcarrier spacing SCS, the maximum PDCCH monitoring processing capability of the terminal device is:

$$\min(S, Y) \times P, wherein$$

S is the quantity of activated target objects, Y is a supported blind detection capability reported by the terminal device, and P is a maximum quantity of PDCCH candidates that are to be blindly detected in a slot or a maximum quantity of non-overlapping control channel elements CCEs required by the terminal device to perform blind detection.

17. The terminal device according to claim 15, wherein when the activated target objects have different SCSs, the maximum PDCCH monitoring processing capability of the terminal device is:

$$\min\left\{\mathrm{S} \times P, \left\lfloor \mathrm{Y} \times P \times {S^{\mu}}/{\sum_{\mu=0}^{3} S^{\mu}} \right\rfloor\right\}, \text{wherein}$$

S is the quantity of activated target objects, Y is a supported blind detection capability reported by the terminal device, P is a maximum quantity of PDCCH candidates that are to be blindly detected in a slot or a maximum quantity of non-overlapping CCEs required by the terminal device to perform blind detection, μ is SCS configuration supported by the terminal device, and S^{μ} is a quantity of target objects of each SCS configuration μ.

18. A terminal device, comprising a memory, a processor, and a computer program that is 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 monitoring method according to any one of claims 1 to 13 are implemented.

19. A computer-readable storage medium, wherein a computer program is stored in the computer-readable storage medium, and when the computer program is executed by a processor, the steps of the monitoring method according to any one of claims 1 to 13 are implemented.