

CLAIMS

What is claimed is:

1. A channel information determining method, comprising:

5 updating, activating, or indicating, by a network device, parameter information of a first channel or a first reference signal RS by using a media access control control element MAC CE command, wherein the parameter information of the first channel or the first reference signal RS is used for determining the parameter information of a second channel or a second RS under a preset condition; wherein
10 the parameter information comprises at least one of transmission configuration indicator TCI state information, spatial relation information, and path loss PL RS; and the preset condition comprises at least one of the following: that at least one physical uplink control channel PUCCH resource group has been configured on at least one bandwidth part BWP; that a plurality of PUCCH resources have been configured in a multi-CC scenario; that a plurality of PUCCH resource groups have
15 been configured in a multi-CC scenario; a multi-transmission and reception point TRP scenario; that a plurality of channel state information reference signal CSI-RS resources or a plurality of channel sounding reference signal SRS resources have been configured in a multi-CC scenario; that a plurality of PL RSs and a plurality of SRS resource sets have been configured in a multi-CC scenario; and that no PL RS
20 for a physical uplink control channel PUCCH or for an SRS resource set has been configured.

2. The method according to claim 1 wherein the first channel comprises a first PUCCH resource of a first PUCCH resource group on a first BWP, or the first channel comprises all PUCCH resources of the first PUCCH resource group on the
25 first BWP;

the parameter information comprises the spatial relation information, the preset condition comprises that at least one PUCCH resource group has been configured on at least one bandwidth part BWP, and PUCCH resources of each PUCCH resource group are located in a same bandwidth part BWP; and

the updating, activating, or indicating parameter information of a first channel or a first reference signal RS by using a media access control MAC control element CE command comprises:

5 updating, activating, or indicating spatial relation information of the first channel as first spatial relation information by using the MAC CE command.

3. The method according to claim 1, wherein the first RS comprises a first SRS resource on a fourth BWP of a third CC in a third CC list, or the first RS comprises SRS resources having a same second resource identifier on all BWPs of all CCs in the third CC list, or the first RS comprises all SRS resources on all the BWPs of all
10 the CCs in the third CC list;

the parameter information comprises the spatial relation information, the preset condition comprises that a plurality of SRS resources have been configured in a multi-CC scenario, and the SRS resources are semi-persistent or aperiodic SRS resources; and

15 the updating, activating, or indicating parameter information of a first channel or a first RS by using a MAC CE command comprises:

updating, activating, or indicating, by the network device, spatial relation information of the first RS as fourth spatial relation information by using the MAC CE command, wherein

20 a parameter usage of an SRS resource set to which the first SRS resource belongs is configured to be codebook, noncodebook, or antenna switching.

4. The method according to claim 1, wherein the first channel comprises a second PUCCH resource on a second BWP of a first CC in a first CC list, or the first channel comprises PUCCH resources having a same first resource identifier on all
25 BWPs of all CCs in the first CC list, or the first channel comprises all PUCCH resources on all the BWPs of all the CCs in the first CC list;

the parameter information comprises the spatial relation information, and the preset condition comprises that a plurality of PUCCH resources have been configured in a multi-CC scenario; and

the updating, activating, or indicating parameter information of a first channel or a first RS by using a MAC CE command comprises:

updating, activating, or indicating, by the network device, spatial relation information of the first channel as second spatial relation information by using the
5 MAC CE command.

5. The method according to claim 1, wherein the first channel comprises all PUCCH resources of a second PUCCH resource group on a third BWP of a second CC in a second CC list, or the first channel comprises all PUCCH resources of PUCCH resource groups having a same first resource group identifier on all BWPs
10 of all CCs in the second CC list; or, the first channel comprises all PUCCH resources of all PUCCH resource groups on all the BWPs of all the CCs in the second CC list;

the parameter information comprises the spatial relation information, and the preset condition comprises that a plurality of PUCCH resource groups have been configured in a multi-CC scenario; and

15 the updating, activating, or indicating parameter information of a first channel or a first RS by using a MAC CE command comprises:

updating, activating, or indicating, by the network device, spatial relation information of the first channel as third spatial relation information by using the MAC CE command.

20 6. The method according to claim 1, wherein the first channel comprises a physical upstream link control channel PUCCH, and the first RS comprises an SRS resource set;

the parameter information comprises the PL RS, and the preset condition comprises that no PL RS for a physical uplink control channel PUCCH or for an
25 SRS resource set has been configured; and

the updating, activating, or indicating parameter information of a first channel or a first RS by using a MAC CE command comprises:

indicating, by the network device, one DL RS out of a plurality of downlink DL RSs by using the MAC CE command; wherein

the plurality of DL RSs comprise at least one of the following: a DL RS in spatial relation information of the PUCCH or an SRS resource in the SRS resource set, a DL RS associated with spatial relation information of the PUCCH or an SRS resource in the SRS resource set, and a DL RS in TCI state information of a preset downlink channel; wherein the preset downlink channel is a downlink channel determined according to a preset rule.

7. The method according to claim 1, wherein the preset condition comprises a multi-TRP scenario; and the MAC CE command carries control resource set CORESET information and/or transmission and reception point TRP information.

10 8. The method according to claim 7, wherein the CORESET information and/or TRP information is used to indicate a TRP corresponding to the first channel or the first RS; or the CORESET information and/or TRP information is used to indicate a TRP corresponding to the second channel or the second RS.

9. A channel information determining method, comprising:

15 determining, by a terminal device, parameter information of a second channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS, wherein the parameter information of the first channel or the first RS is updated, activated, or indicated by a network device by using a MAC CE command; wherein

20 the parameter information comprises at least one of TCI state information, spatial relation information, and PL RS; and the preset condition comprises at least one of the following: that at least one PUCCH resource group has been configured on at least one BWP; that a plurality of PUCCH resources have been configured in a multi-CC scenario; that a plurality of PUCCH resource groups have been configured in a multi-CC scenario; a multi-TRP scenario; that a plurality of CSI-RS resources or a plurality of SRS resources have been configured in a multi-CC scenario; that a plurality of PL RSs and a plurality of SRS resource sets have been configured in a multi-CC scenario; and that no PL RS for a PUCCH or an SRS resource set has been configured.

10. The method according to claim 9, wherein the parameter information comprises the spatial relation information, the preset condition comprises that at least one PUCCH resource group has been configured on at least one BWP, and PUCCH resources of each PUCCH resource group are located in a same BWP; and

5 the determining, by a terminal device, parameter information of a second channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS comprises:

if spatial relation information of the first channel that is updated, activated, or indicated by using the MAC CE command is first spatial relation information, 10 determining, by the terminal device, that spatial relation information of the second channel is the first spatial relation information, wherein

in a case that the first channel comprises a first PUCCH resource of a first PUCCH resource group on a first BWP, or that the first channel comprises all PUCCH resources of the first PUCCH resource group on the first BWP, the second 15 channel comprises all the PUCCH resources of the first PUCCH resource group.

11. The method according to claim 9, wherein the parameter information comprises the spatial relation information, and the preset condition comprises that a plurality of PUCCH resources have been configured in a multi-CC scenario; and

the determining, by a terminal device, parameter information of a second 20 channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS comprises:

if spatial relation information of the first channel that is updated, activated, or indicated by using the MAC CE command is second spatial relation information, determining, by the terminal device, that spatial relation information of the second 25 channel is the second spatial relation information, wherein

in a case that the first channel comprises a second PUCCH resource on a second BWP of a first CC in a first CC list, the second channel comprises a third PUCCH resource, wherein the third PUCCH resource comprises at least one of the following: all PUCCH resources on all BWPs of at least one CC in the first CC list, PUCCH 30 resources that have a same resource identifier as the second PUCCH resource and

that are on all BWPs of at least one CC in the first CC list, all PUCCH resources on the first CC, and all PUCCH resources on the second BWP; or

in a case that the first channel comprises PUCCH resources having a same first resource identifier on all BWPs of all CCs in the first CC list, the second channel
5 comprises the PUCCH resources having the first resource identifier on all the BWPs of all the CCs in the first CC list; or

in a case that the first channel comprises all PUCCH resources on all BWPs of all CCs in the first CC list, the second channel comprises all the PUCCH resources on all the BWPs of all the CCs in the first CC list.

10 12. The method according to claim 9, wherein the parameter information comprises the spatial relation information; and the preset condition comprises that a plurality of PUCCH resource groups have been configured in a multi-CC scenario; and

the determining, by a terminal device, parameter information of a second
15 channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS comprises:

if spatial relation information of the first channel that is updated, activated, or indicated by using the MAC CE command is third spatial relation information, determining, by the terminal device, that spatial relation information of the second
20 channel is the third spatial relation information, wherein

in a case that the first channel comprises all PUCCH resources of a second PUCCH resource group on a third BWP of a second CC in a second CC list, the second channel comprises all PUCCH resources of a third PUCCH resource group, and the third PUCCH resource group comprises at least one of the following: all
25 PUCCH resource groups on all BWPs of at least one CC in the second CC list, PUCCH resource groups that have a same resource group identifier as the second PUCCH resource group and that are on all BWPs of at least one CC in the second CC list, all PUCCH resource groups on the second CC, and all PUCCH resource groups on the third BWP; or

in a case that the first channel comprises all PUCCH resources of PUCCH resource groups having a same first resource group identifier on all BWPs of all CCs in the second CC list, the second channel comprises all PUCCH resources of the PUCCH resource groups having the first resource group identifier on all the BWPs of all the CCs in the second CC list; or

in a case that the first channel comprises all PUCCH resources of all PUCCH resource groups on all BWPs of all CCs in the second CC list, the second channel comprises all the PUCCH resources of all the PUCCH resource groups on all the BWPs of all the CCs in the second CC list.

13. The method according to claim 9, wherein the parameter information comprises the spatial relation information, the preset condition comprises that a plurality of SRS resources have been configured in a multi-CC scenario, and the SRS resources are semi-persistent or aperiodic SRS resources; and

the determining, by a terminal device, parameter information of a second channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS comprises:

if spatial relation information of the first RS that is updated, activated, or indicated by using the MAC CE command is fourth spatial relation information, determining, by the terminal device, that spatial relation information of the second RS is the fourth spatial relation information, wherein

in a case that the first RS comprises a first SRS resource on a fourth BWP of a third CC in a third CC list, the second RS comprises all SRS resources that have a same resource identifier as the first SRS resource and that are on all BWPs of at least one CC in the third CC list; or

in a case that the first RS comprises SRS resources having a same second resource identifier on all BWPs of all CCs in the third CC list, the second RS comprises the SRS resources having the second resource identifier on all the BWPs of all the CCs in the third CC list; or

in a case that the first RS comprises all SRS resources on all the BWPs of all the CCs in the third CC list, the second RS comprises all the SRS resources on all the BWPs of all the CCs in the third CC list; wherein

5 a parameter usage of an SRS resource set to which the first SRS resource belongs is configured to be codebook, nonCodebook, or antennaSwitching.

14. The method according to claim 9, wherein the determining, by a terminal device, parameter information of a second channel or a second RS under a preset condition, based on parameter information of a first channel or a first reference signal RS further comprises:

10 in a case that the number of PL RSs configured for the terminal device by the network device is less than or equal to a preset threshold, the terminal device determines that the MAC CE takes effect on at least one of the following occasions:

when the MAC CE is received;

when first duration elapses after the MAC CE is received;

15 when confirmation information for the MAC CE is sent;

when third duration elapses after the confirmation information for the MAC CE is sent;

when the confirmation information is received by the network device; and

20 when second duration elapses after the confirmation information is received by the network device.

15. The method according to claim 9, wherein the parameter information comprises the PL RS, and the preset condition comprises that no PL RS for a PUCCH or an SRS resource set has been configured; and

25 the determining, by a terminal device, parameter information of a second channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS comprises:

determining, by the terminal device, a PL RS of the second channel or the second RS to be a DL RS out of a plurality of downlink DL RSs that is indicated by using the MAC CE command; wherein

the first channel comprises a PUCCH, or the first RS comprises an SRS resource set;

the second channel comprises the PUCCH, or the second RS comprises the SRS resource set; and

- 5 the plurality of DL RSs comprise at least one of the following: a DL RS in spatial relation information of the PUCCH or an SRS resource in the SRS resource set, a DL RS associated with spatial relation information of the PUCCH or an SRS resource in the SRS resource set, and a DL RS in TCI state information of a preset downlink channel; wherein the preset downlink channel is a downlink channel
10 determined according to a preset rule.

16. The method according to claim 9, wherein the second channel is an uplink channel or the second RS is an uplink RS, the parameter information is the spatial relation information or the PL RS, and each CC in the CC list is a CC having an uplink; and

- 15 the CC having an uplink comprises at least one of the following:

 a CC having an uplink slot and/or uplink symbol that is configured by using RRC signaling;

 a CC having an uplink slot and/or uplink symbol that is indicated by downlink control information DCI; and

- 20 a CC that is configured by using RRC signaling to be between a first parameter and a second parameter and that is indicated by DCI to be a CC with an uplink slot and/or uplink symbol, wherein the first parameter comprises a downlink slot and/or a downlink symbol, and the second parameter comprises an uplink slot and/or an uplink symbol.

- 25 17. The method according to claim 9, wherein the second channel comprises a first associated channel, or the second RS comprises a first associated RS;

 the preset condition comprises a multi-TRP scenario, and the MAC CE command carries CORESET information and/or TRP information; and

the determining, by a terminal device, parameter information of a second channel or a second RS under a preset condition, based on parameter information of a first channel or a first RS comprises:

5 determining, by the terminal device, parameter information of the first associated channel or the first associated RS as the parameter information of the first channel or the first RS; wherein

the first associated channel comprises at least one of the following: a channel corresponding to the CORESET information, a channel corresponding to a TRP that is associated with the CORESET information, and a channel corresponding to a TRP
10 that is corresponding to the TRP information; and

the first associated RS comprises at least one of the following: an RS corresponding to the CORESET information, an RS corresponding to a TRP that is associated with the CORESET information, and an RS corresponding to a TRP that is corresponding to the TRP information.

15 18. The method according to claim 17, wherein the CORESET information and/or TRP information is used to indicate a TRP corresponding to the first channel or the first RS; or the CORESET information and/or TRP information is used to indicate a TRP corresponding to the second channel or the second RS.

19. The method according to claim 17, wherein the first channel and the first
20 associated channel correspond to same CORESET information and/or TRP information; and the first RS and the first associated RS correspond to same CORESET information and/or TRP information.

20. A network device, comprising:

an updating, activating, or indicating module, configured to update, activate, or
25 indicate parameter information of a first channel or a first RS by using a MAC CE command, wherein the parameter information of the first channel or the first RS is used for determining the parameter information of a second channel or a second RS under a preset condition; wherein

the parameter information comprises at least one of TCI state information,
30 spatial relation information, and PL RS; and the preset condition comprises at least

- one of the following: that at least one PUCCH resource group has been configured on at least one BWP; that a plurality of PUCCH resources have been configured in a multi-CC scenario; that a plurality of PUCCH resource groups have been configured in a multi-CC scenario; a multi-TRP scenario; that a plurality of CSI-RS resources or
- 5 a plurality of SRS resources have been configured in a multi-CC scenario; that a plurality of PL RSs and a plurality of SRS resource sets have been configured in a multi-CC scenario; and that no PL RS for a PUCCH or an SRS resource set has been configured.