

CLAIMS

What is claimed is:

1. An information reporting method, wherein the method comprises:

transmitting, by a terminal device, report information to a network-side device,

5 wherein the report information indicates related information of at least one spatial object of the terminal device;

wherein the report information comprises at least one of the following related information of the at least one spatial object: identification information of at least one RS resource corresponding to the at least one spatial object, P-MPR information of the
10 at least one spatial object, a quality parameter of the at least one RS resource, a duty cycle corresponding to the at least one spatial object, and a reduction value of the quality parameter of the at least one RS resource.

2. The method according to claim 1, wherein the spatial object comprises an antenna panel and/or a beam on the antenna panel.

15 3. The method according to claim 1, wherein the transmitting, by a terminal device, report information to a network-side device comprises at least one of the following:

transmitting, by the terminal device, the report information to the network-side device as defined in a protocol;

20 transmitting, by the terminal device, the report information to the network-side device according to a configuration of the network-side device; and

transmitting, by the terminal device, the report information to the network-side device in the case of detecting a reporting event.

25 4. The method according to claim 3, wherein the transmitting, by a terminal device, report information to a network-side device comprises:

in a case that a condition defined in the protocol and/or configured by the network-side device is met, transmitting, by the terminal device, the report information to the network-side device; or in a case that a P-MPR of a currently used spatial object

meets a preset condition, transmitting, by the terminal device, the report information to the network-side device.

5. The method according to claim 4, wherein

the at least one RS resource comprises a channel state information-reference
5 signal CSI-RS resource and/or a synchronization signal and physical broadcast
channel PBCH block SSB resource; and/or

the identification information of the RS resource comprises a CSI-RS resource
index CRI and/or an SSB resource index SSBRI; and/or

the quality parameter of the RS resource comprises a layer 1-reference signal
10 received power L1-RSRP and/or a layer 1-signal to interference plus noise ratio
L1-SINR.

6. The method according to claim 3, wherein the configuration by the
network-side device comprises: forcing the terminal device to indicate the related
information of the at least one spatial object when the terminal device reports the
15 report information; or allowing the terminal device to indicate the related information
of the at least one spatial object when the terminal device reports the report
information.

7. The method according to any one of claims 1 to 6, wherein that the report
information indicates the related information of the at least one spatial object
20 comprises:

the report information comprises identification information of the at least one
spatial object; or

based on a correspondence between uplink resources and identification
information of spatial objects, the report information is transmitted by using an uplink
25 resource corresponding to the at least one spatial object, to indicate identification
information of the at least one spatial object.

8. The method according to any one of claims 1 to 6, wherein the transmitting, by
a terminal device, report information to a network-side device comprises:

transmitting, by the terminal device depending on whether a first predetermined condition is met, the report information to the network-side device by using the currently used spatial object or another spatial object of the terminal device different from the currently used spatial object.

5 9. The method according to any one of claims 1 to 6, wherein

the transmitting, by a terminal device, report information to a network-side device comprises: transmitting, by the terminal device, the report information to the network-side device through a preset physical uplink control channel PUCCH and/or physical uplink shared channel PUSCH; and

10 after the transmitting, by a terminal device, report information to the network-side device, the method further comprises: monitoring, by the terminal device, downlink control information DCI fed back by the network-side device; or,

the transmitting, by a terminal device, report information to a network-side device comprises: transmitting, by the terminal device, the report information to the network-side device by using a media access control MAC control element CE; and

15 after the transmitting, by a terminal device, report information to the network-side device, the method further comprises: receiving, by the terminal device, acknowledgement information for the MAC CE fed back by the network-side device, or monitoring DCI fed back by the network-side device.

20 10. The method according to any one of claims 1 to 6, wherein the at least one spatial object comprises a target spatial object to be switched to.

11. The method according to any one of claims 1 to 6, wherein the transmitting, by a terminal device, report information to a network-side device comprises:

25 transmitting, by the terminal device, the report information based on a preset format of a beam report.

12. The method according to claim 11, wherein the beam report comprises a signaling field that carries each piece of information comprised in the report information.

13. A terminal device, comprising:

a transmitting module, configured to transmit report information to a network-side device as defined in a protocol and/or as configured by the network-side device and/or in the case of detecting a reporting event, wherein the report information indicates related information of at least one spatial object of the terminal device;

5 wherein the report information comprises at least one of the following related information of the at least one spatial object: identification information of at least one RS resource corresponding to the at least one spatial object, P-MPR information of the at least one spatial object, a quality parameter of the at least one RS resource, a duty cycle corresponding to the at least one spatial object, and a reduction value of the
10 quality parameter of the at least one RS resource.

14. The terminal device according to claim 13, wherein the spatial object comprises an antenna panel and/or a beam on the antenna panel.

15 15. The terminal device according to claim 13, wherein that the transmitting module transmits report information to a network-side device comprises at least one of the following:

transmitting the report information to the network-side device as defined in a protocol;

transmitting the report information to the network-side device according to a configuration of the network-side device; and

20 transmitting the report information to the network-side device in the case of detecting a reporting event.

16. The terminal device according to claim 13, wherein

the at least one RS resource comprises a channel state information-reference signal CSI-RS resource and/or a synchronization signal and physical broadcast
25 channel PBCH block SSB resource; and/or

the identification information of the RS resource comprises a CSI-RS resource index CRI and/or an SSB resource index SSBRI; and/or

the quality parameter of the RS resource comprises a layer 1-reference signal received power L1-RSRP and/or a layer 1-signal to interference plus noise ratio L1-SINR.

17. The terminal device according to any one of claims 13 to 16, wherein that the
5 report information indicates the related information of the at least one spatial object comprises:

the report information comprises identification information of the at least one spatial object; or

based on a correspondence between uplink resources and identification
10 information of spatial objects, the report information is transmitted by using an uplink resource corresponding to the at least one spatial object, to indicate identification information of the at least one spatial object.

18. A network-side device, comprising:

a receiving module, configured to receive report information transmitted by a
15 terminal device, wherein the report information indicates related information of at least one spatial object of the terminal device; wherein the report information comprises at least one of the following related information of the at least one spatial object: identification information of at least one RS resource corresponding to the at least one spatial object, P-MPR information of the at least one spatial object, a quality
20 parameter of the at least one RS resource, a duty cycle corresponding to the at least one spatial object, and a reduction value of the quality parameter of the at least one RS resource; and a scheduling module, configured to schedule a spatial object of the terminal device based on the related information of the at least one spatial object that is indicated by the report information.