

CLAIMS

What is claimed is:

1. An information transmitting method, applied to a terminal and comprising:

transmitting a media access control protocol data unit MAC PDU, wherein the MAC PDU comprises a media access control control element MAC CE; wherein

the MAC CE is used to indicate that the terminal has received activation or deactivation signaling for a configured grant resource, or is used to indicate that the terminal has activated or deactivated a configured grant resource, or is used to request to activate or deactivate a configured grant resource;

wherein the MAC CE is identified by a MAC PDU subheader;

the MAC PDU subheader comprises a logical channel identifier LCID field; and

in a case that a value of the LCID field is a second preset value, the MAC CE is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource; or

in a case that a value of the LCID field is a third preset value, the MAC CE is used to indicate that the terminal has activated or deactivated a sidelink grant resource; or

in a case that a value of the LCID field is a fourth preset value, the MAC CE is used to indicate that the terminal is requesting to activate or deactivate a sidelink grant resource;

wherein the MAC CE further comprises a field whose size is not 0 bits; and

the field whose size is not 0 bits comprises an identifier of at least one sidelink grant resource, or an identifier of at least one sidelink grant resource and an identifier of at least one hybrid automatic repeat request HARQ process.

2. The method according to claim 1, wherein

in a case that a value of the LCID field is a fifth preset value, the MAC CE is used to indicate that the terminal has received activation signaling for a sidelink grant resource, or in a case that a value of the LCID field is a sixth preset value, the MAC CE is used to indicate that the terminal has received deactivation signaling for a sidelink grant resource; or

in a case that a value of the LCID field is a seventh preset value, the MAC CE is used to indicate that the terminal has activated a sidelink grant resource, or in a case that a value of the

LCID field is an eighth preset value, the MAC CE is used to indicate that the terminal has deactivated a sidelink grant resource; or

in a case that a value of the LCID field is a ninth preset value, the MAC CE is used to indicate that the terminal is requesting to activate a sidelink grant resource, or in a case that a value of the LCID field is a tenth preset value, the MAC CE is used to indicate that the terminal is requesting to deactivate a sidelink grant resource.

3. The method according to claim 1, wherein the MAC PDU subheader further comprises a fifth bit field; and

the fifth bit field is used to indicate what the terminal has received is activation signaling or deactivation signaling;

or

the fifth bit field is used to indicate that the terminal has activated the grant resource or deactivated the grant resource;

or

the fifth bit field is used to indicate that the terminal is requesting to activate the grant resource or deactivate the grant resource.

4. The method according to claim 1, wherein the identifier of a sidelink grant resource comprises any one of the following:

an index of the sidelink grant resource;

an identifier of a destination terminal corresponding to the sidelink grant resource;

an identifier of a source terminal corresponding to the sidelink grant resource;

a group identifier of a group to which the sidelink grant resource belongs;

an application layer identifier of the sidelink grant resource;

an identifier of a service on the sidelink grant resource;

an upper-layer identifier of the sidelink grant resource; and

an identifier of a transmission mode of the sidelink grant resource.

5. The method according to claim 1 or 2 or 3, wherein the MAC CE further comprises a field whose size is not 0;

the field whose size is not 0 bits comprises first indication information, and the first indication information comprises at least one indication bit; and

a first state of each indication bit of the first indication information is used to indicate that the terminal has received activation signaling for a corresponding sidelink grant resource, and a second state of each indication bit of the first indication information is used to indicate that the terminal has received deactivation signaling for a corresponding sidelink grant resource;

or

a first state of each indication bit of the first indication information is used to indicate that the terminal has activated a corresponding sidelink grant resource, and a second state of each indication bit of the first indication information is used to indicate that the terminal has deactivated a corresponding sidelink grant resource;

or

a first state of each indication bit of the first indication information is used to indicate that the terminal is requesting to activate a corresponding sidelink grant resource, and a second state of each indication bit of the first indication information is used to indicate that the terminal is requesting to deactivate a corresponding sidelink grant resource.

6. The method according to claim 1 or 2 or 3, wherein the MAC CE further comprises a field whose size is not 0;

the field whose size is not 0 bits comprises second indication information, and the second indication information comprises at least one indication bit; and

a first state of each indication bit of the second indication information is used to indicate that the terminal has received activation or deactivation signaling for a corresponding sidelink grant resource, and a second state of each indication bit of the second indication information is used to indicate that the terminal has not received activation or deactivation signaling for a corresponding sidelink grant resource or a network has not configured a corresponding sidelink grant resource;

or

a first state of each indication bit of the second indication information is used to indicate that the terminal has activated or deactivated a sidelink grant resource, and a second state of each indication bit of the second indication information is used to indicate that the terminal has not processed a sidelink grant resource or a network has not configured a corresponding sidelink grant resource;

or

a first state of each indication bit of the second indication information is used to indicate that the terminal is requesting to activate or deactivate a sidelink grant resource, and a second state of each indication bit of the second indication information is used to indicate that the terminal is not requesting to process a sidelink grant resource or a network has not configured a corresponding sidelink grant resource.

7. The method according to claim 1, wherein

in a case that a value of the LCID field is a first preset value, the MAC CE is used to indicate activation or deactivation confirmation for the grant resource.

8. The method according to claim 7, wherein the MAC PDU subheader further comprises a first bit field and a second bit field; and

the first bit field is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource, or activation or deactivation signaling for an uplink grant resource, and the second bit field is a reserved bit;

or

the first bit field is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource, or activation or deactivation signaling for an uplink grant resource, and the second bit field is used to indicate what the terminal has received is activation signaling or deactivation signaling;

or

the first bit field is a reserved bit, and the second bit field is used to indicate what the terminal has received is activation signaling or deactivation signaling;

or,

the MAC PDU subheader comprises a third bit field; and

the third bit field is used to indicate that the terminal has activated the configured grant resource, or is used to indicate that the terminal has deactivated the configured grant resource;

or, the MAC PDU subheader comprises a fourth bit field; and

the fourth bit field is used to indicate that the terminal is requesting to activate the configured grant resource, or is used to indicate that the terminal is requesting to deactivate the configured grant resource.

9. The method according to claim 1, wherein the MAC CE comprises a buffer status report BSR, the BSR is identified by a MAC PDU subheader, and the MAC PDU subheader comprises a fifth bit field and a logical channel identifier LCID field used to identify the MAC CE as a BSR; and

the fifth bit field is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource, or is used to indicate that the terminal has activated or deactivated a sidelink grant resource, or is used to indicate that the terminal is requesting to activate or deactivate a sidelink grant resource.

10. The method according to claim 9, wherein the MAC CE further comprises a first indication field; and

the first indication field is used to carry an identifier of an activated or deactivated sidelink grant resource, or is used to carry an identifier of a sidelink grant resource that the terminal is requesting to activate or deactivate, or is used to carry an identifier of an activated or deactivated sidelink grant resource and an identifier of a HARQ process, or is used to carry an identifier of a sidelink grant resource that the terminal is requesting to activate or deactivate and an identifier of a HARQ process;

or,

the MAC CE further comprises a second indication field;

the second indication field comprises at least one indication bit; and

a first state of each indication bit of the second indication field is used to indicate that the terminal has received activation signaling for a corresponding sidelink grant resource, and a second state of each indication bit of the second indication field is used to indicate that the terminal has received deactivation signaling for a corresponding sidelink grant resource;

or

a first state of each indication bit of the second indication field is used to indicate that the terminal has activated a corresponding sidelink grant resource, and a second state of each indication bit of the second indication field is used to indicate that the terminal has deactivated a corresponding sidelink grant resource;

or

a first state of each indication bit of the second indication field is used to indicate that the terminal is requesting to activate a corresponding sidelink grant resource, and a second state of each indication bit of the second indication field is used to indicate that the terminal is requesting to deactivate a corresponding sidelink grant resource.

11. The method according to claim 1, wherein in a case that at least two MAC CEs are to be transmitted, the method further comprises:

transmitting the MAC CEs according to a preset priority rule, wherein

the preset priority rule comprises:

that a MAC CE used for a cell radio network temporary identifier C-RNTI or used to carry data from an uplink common control channel has a higher priority than a MAC CE for an uplink grant resource, and that a MAC CE for an uplink grant resource has a higher priority than a MAC CE for a sidelink grant resource; or

the preset priority rule comprises:

that a MAC CE used for a cell radio network temporary identifier C-RNTI or used to carry data from an uplink common control channel has a higher priority than a MAC CE for an uplink grant resource, and that a MAC CE for an uplink grant resource has the same priority as a MAC CE for a sidelink grant resource.

12. The method according to claim 1, wherein in a case that the MAC CE is used to request to activate or deactivate a configured grant resource, the method further comprises:

receiving reply information, wherein the reply information is used to indicate to the terminal that the terminal is allowed to activate or deactivate the grant resource, or the reply information is used to indicate to the terminal that the terminal is not allowed to activate or deactivate the grant resource;

wherein the reply information comprises any one of the following:

an identifier of the grant resource that the terminal is allowed to activate or deactivate;

an identifier of the grant resource that the terminal is allowed to activate or deactivate and an identifier of a HARQ process; and

third indication information comprising at least one indication bit, wherein each indication bit of the third indication information is used to indicate whether the terminal is allowed to activate or deactivate a corresponding grant resource.

13. A terminal, comprising:

a transmitting module, configured to transmit a media access control protocol data unit MAC PDU, wherein the MAC PDU comprises a media access control control element MAC CE;

the MAC CE is used to indicate that the terminal has received activation or deactivation signaling for a configured grant resource, or is used to indicate that the terminal has activated or deactivated a configured grant resource, or is used to request to activate or deactivate a configured grant resource;

wherein the MAC CE is identified by a MAC PDU subheader;

the MAC PDU subheader comprises a logical channel identifier LCID field; and

in a case that a value of the LCID field is a second preset value, the MAC CE is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource; or

in a case that a value of the LCID field is a third preset value, the MAC CE is used to indicate that the terminal has activated or deactivated a sidelink grant resource; or

in a case that a value of the LCID field is a fourth preset value, the MAC CE is used to indicate that the terminal is requesting to activate or deactivate a sidelink grant resource;

wherein the MAC CE further comprises a field whose size is not 0 bits; and

the field whose size is not 0 bits comprises an identifier of at least one sidelink grant resource, or an identifier of at least one sidelink grant resource and an identifier of at least one hybrid automatic repeat request HARQ process.

14. The terminal according to claim 13, wherein

in a case that a value of the LCID field is a fifth preset value, the MAC CE is used to indicate that the terminal has received activation signaling for a sidelink grant resource, or in a case that a value of the LCID field is a sixth preset value, the MAC CE is used to indicate that the terminal has received deactivation signaling for a sidelink grant resource; or

in a case that a value of the LCID field is a seventh preset value, the MAC CE is used to indicate that the terminal has activated a sidelink grant resource, or in a case that a value of the LCID field is an eighth preset value, the MAC CE is used to indicate that the terminal has deactivated a sidelink grant resource; or

in a case that a value of the LCID field is a ninth preset value, the MAC CE is used to indicate that the terminal is requesting to activate a sidelink grant resource, or in a case that a value of the LCID field is a tenth preset value, the MAC CE is used to indicate that the terminal is requesting to deactivate a sidelink grant resource.

15. The terminal according to claim 13, wherein the MAC PDU subheader further comprises a fifth bit field; and

the fifth bit field is used to indicate what the terminal has received is activation signaling or deactivation signaling;

or

the fifth bit field is used to indicate that the terminal has activated the grant resource or deactivated the grant resource;

or

the fifth bit field is used to indicate that the terminal is requesting to activate the grant resource or deactivate the grant resource.

16. The terminal according to claim 13, wherein

in a case that a value of the LCID field is a first preset value, the MAC CE is used to indicate activation or deactivation confirmation for the grant resource.

17. The terminal according to claim 16, wherein the MAC PDU subheader further comprises a first bit field and a second bit field; and

the first bit field is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource, or activation or deactivation signaling for an uplink grant resource, and the second bit field is a reserved bit;

or

the first bit field is used to indicate that the terminal has received activation or deactivation signaling for a sidelink grant resource, or activation or deactivation signaling for an uplink grant resource, and the second bit field is used to indicate what the terminal has received is activation signaling or deactivation signaling;

or

the first bit field is a reserved bit, and the second bit field is used to indicate what the terminal has received is activation signaling or deactivation signaling;

or,

the MAC PDU subheader comprises a third bit field; and

the third bit field is used to indicate that the terminal has activated the configured grant resource, or is used to indicate that the terminal has deactivated the configured grant resource;

or,

the MAC PDU subheader comprises a fourth bit field; and

the fourth bit field is used to indicate that the terminal is requesting to activate the configured grant resource, or is used to indicate that the terminal is requesting to deactivate the configured grant resource.

18. A terminal, comprising a processor, a memory, 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 information transmitting method according to any one of claims 1 to 12 are implemented.

19. 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 information transmitting method according to any one of claims 1 to 12 are implemented.