CLAIMS

What is claimed is:

1. A transmission method, which is applied to a terminal device, comprising:

when it is determined that N uplink channels to be sent cannot be sent simultaneously, sending at least some of the N uplink channels based on a priority corresponding to each of the N uplink channels, wherein

N is an integer greater than 1, the priority corresponding to the uplink channel is determined based on a priority determining parameter corresponding to the uplink channel, and the priority determining parameter comprises at least service information corresponding to the uplink channel,

wherein the service information corresponding to the uplink channel comprises at least one of the following:

service type information corresponding to data comprised in the uplink channel; and

service type information corresponding to triggering of uplink channel sending,

characterized in that when the uplink channel comprises a physical uplink shared channel PUSCH, service type information corresponding to data comprised in the PUSCH comprises at least one of the following: information corresponding to a logical channel of the data comprised in the PUSCH, a type of a Media Access Control control element MAC CE, and a priority of the Media Access Control control element MAC CE;

and/or

when the uplink channel comprises a physical uplink control channel PUCCH, service type information corresponding to data comprised in the PUCCH comprises: service information corresponding to a data type;

and/or

when the uplink channel comprises a physical random access channel PRACH, service type information corresponding to triggering of PRACH sending comprises at least one of the following: a type of a trigger event that triggers the PRACH sending, and information corresponding to a logical channel that triggers the PRACH sending;

and/or

when the uplink channel comprises a sounding reference signal SRS channel, service type information corresponding to triggering of SRS sending comprises: a type of a trigger event that triggers the SRS sending,

wherein when the data type comprises a scheduling request SR, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers SR sending;

and/or

when the data type comprises hybrid automatic repeat request HARQ feedback, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers HARQ sending;

and/or

when the data type comprises a channel state information CSI report, the service information corresponding to the data type comprises a trigger type that triggers the CSI report,

wherein the information corresponding to the logical channel comprises a priority of the logical channel.

2. The method according to claim 1, wherein the information corresponding to the logical channel comprises at least one of the following:

an identifier of the logical channel;

a cell corresponding to the logical channel;

a cell group corresponding to the logical channel;

a data type corresponding to the logical channel; and

a control signaling type corresponding to the logical channel.

3. The method according to claim 1, wherein the type of the trigger event that triggers the PRACH sending comprises at least one of the following:

initial access of radio resource control RRC in an idle state or an inactive state;

state transition of radio resource control RRC in an inactive state;

connection re-establishment of radio resource control RRC;

switch;

addition or change of primary and secondary cells;

downlink data arrival or uplink data arrival of radio resource control RRC in a connected state, wherein an uplink synchronization state is out-of-synchronization;

establishment of uplink timing of a secondary cell;

system information request; and

beam failure recovery.

4. The method according to claim 1, wherein when the uplink channel comprises at least two sets of data corresponding to different service type information, the service information corresponding to the uplink channel is determined based on priorities of the at least two sets of data from the service type information corresponding to the at least two sets of data.

5. The method according to claim 1, wherein the priority corresponding to the uplink channel is determined based on a first correspondence and the service information corresponding to the uplink channel, and the first correspondence is a correspondence between the service information corresponding to the uplink channel and the priority corresponding to the uplink channel.

6. The method according to claim 5 wherein

the first correspondence is predefined in a protocol; or

the method further comprises: receiving the first correspondence sent by a network side device.

7. The method according to claim 1, wherein the sending at least some of the N uplink channels based on a priority corresponding to each of the N uplink channels comprises:

when the priority corresponding to each of the N uplink channels is the same, randomly selecting M uplink channels from the N uplink channels for sending, wherein M is a quantity of uplink channels that can be sent simultaneously.

8. The method according to claim 1, wherein the priority determining parameter further comprises first information, and the first information is used to indicate information about uplink channels that cannot be sent simultaneously.

9. The method according to claim 8, wherein the first information comprises at least one of the following:

identification information of a channel;

second information, wherein the second information is information used to indicate a reason why the N uplink channels cannot be sent simultaneously;

a channel sending priority determined by a physical layer; and

a quantity of uplink channels that can be sent simultaneously.

10. The method according to claim 9, wherein the identification information of the channel comprises at least one of the following:

a type of the channel;

a cell identifier to which the channel belongs;

a cell group identifier to which the channel belongs;

a cell type identifier to which the channel belongs; and

an uplink carrier identifier to which the channel belongs;

and/or

the second information comprises at least one of the following:

information used to indicate that the sending power exceeds the maximum sending power allowed by the terminal device;

information used to indicate that simultaneous sending cannot be implemented due to sending condition restrictions; and

information used to indicate that physical resources of the uplink channel are occupied.

11. The method according to claim 8, wherein before the sending at least some of the N uplink channels based on a priority corresponding to each of the N uplink channels, the method further comprises:

indicating, by a physical layer of the terminal device, the first information to a media access control MAC layer.

12. The method according to claim 11, wherein before the sending at least some of the N uplink channels based on a priority corresponding to each of the N uplink channels, the method further comprises:

determining, by the MAC layer based on the first information and the service information corresponding to each of the N uplink channels, the priority corresponding to each of the N uplink channels.

13. The method according to claim 1, wherein before the sending at least some of the N uplink channels based on a priority corresponding to each of the N uplink channels, the method further comprises:

indicating, by a media access control MAC layer of the terminal device to a physical layer, the service information corresponding to each of the N uplink channels; and

determining, by the physical layer based on the service information corresponding to each of the N uplink channels, the priority corresponding to each of the N uplink channels.

14. A transmission method, which is applied to a network side device, comprising:

sending a first correspondence to a terminal device, wherein the first correspondence is a correspondence between service information corresponding to an uplink channel and a priority corresponding to the uplink channel,

wherein the service information corresponding to the uplink channel comprises at least one of the following:

service type information corresponding to data comprised in the uplink channel; and

service type information corresponding to triggering of uplink channel sending,

characterized in that when the uplink channel comprises a physical uplink shared channel PUSCH, service type information corresponding to data comprised in the PUSCH comprises at least one of the following: information corresponding to a logical channel of the data comprised in the PUSCH, a type of a Media Access Control control element MAC CE, and a priority of the Media Access Control control element MAC CE;

and/or

when the uplink channel comprises a physical uplink control channel PUCCH, service type information corresponding to data comprised in the PUCCH comprises: service information corresponding to a data type;

and/or

when the uplink channel comprises a physical random access channel PRACH, service type information corresponding to triggering of PRACH sending comprises at least one of the following: a type of a trigger event that triggers the PRACH sending, and information corresponding to a logical channel that triggers the PRACH sending;

and/or

when the uplink channel comprises a sounding reference signal SRS channel, service type information corresponding to triggering of SRS sending comprises: a type of a trigger event that triggers the SRS sending,

wherein when the data type comprises a scheduling request SR, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers SR sending;

and/or

when the data type comprises hybrid automatic repeat request HARQ feedback, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers HARQ sending;

and/or

when the data type comprises a channel state information CSI report, the service information corresponding to the data type comprises a trigger type that triggers the CSI report,

wherein the information corresponding to the logical channel comprises a priority of the logical channel.

15. A terminal device, comprising:

a sending module, configured to: when it is determined that N uplink channels to be sent cannot be sent simultaneously, send at least some of the N uplink channels based on a priority corresponding to each of the N uplink channels, wherein

N is an integer greater than 1, the priority corresponding to the uplink channel is determined based on a priority determining parameter corresponding to the uplink channel, and the priority determining parameter comprises at least service information corresponding to the uplink channel,

wherein the service information corresponding to the uplink channel comprises at least one of the following:

service type information corresponding to data comprised in the uplink channel; and

service type information corresponding to triggering of uplink channel sending,

characterized in that when the uplink channel comprises a physical uplink shared channel PUSCH, service type information corresponding to data comprised in the PUSCH comprises at least one of the following: information corresponding to a logical channel of the data comprised

in the PUSCH, a type of a Media Access Control control element MAC CE, and a priority of the Media Access Control control element MAC CE;

and/or

when the uplink channel comprises a physical uplink control channel PUCCH, service type information corresponding to data comprised in the PUCCH comprises: service information corresponding to a data type;

and/or

when the uplink channel comprises a physical random access channel PRACH, service type information corresponding to triggering of PRACH sending comprises at least one of the following: a type of a trigger event that triggers the PRACH sending, and information corresponding to a logical channel that triggers the PRACH sending;

and/or

when the uplink channel comprises a sounding reference signal SRS channel, service type information corresponding to triggering of SRS sending comprises: a type of a trigger event that triggers the SRS sending,

wherein when the data type comprises a scheduling request SR, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers SR sending;

and/or

when the data type comprises hybrid automatic repeat request HARQ feedback, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers HARQ sending;

and/or

when the data type comprises a channel state information CSI report, the service information corresponding to the data type comprises a trigger type that triggers the CSI report,

wherein the information corresponding to the logical channel comprises a priority of the logical channel.

16. The terminal device according to claim 15, wherein the information corresponding to the logical channel comprises at least one of the following:

an identifier of the logical channel;

a cell corresponding to the logical channel;

a cell group corresponding to the logical channel;

a data type corresponding to the logical channel; and

a control signaling type corresponding to the logical channel.

17. The terminal device according to claim 15, wherein the type of the trigger event that triggers the PRACH sending comprises at least one of the following:

initial access of radio resource control RRC in an idle state or an inactive state;

state transition of radio resource control RRC in an inactive state;

connection re-establishment of radio resource control RRC;

switch;

addition or change of primary and secondary cells;

downlink data arrival or uplink data arrival of radio resource control RRC in a connected state, wherein an uplink synchronization state is out-of-synchronization;

establishment of uplink timing of a secondary cell;

system information request; and

beam failure recovery.

18. The terminal device according to claim 15, wherein when the uplink channel comprises at least two sets of data corresponding to different service type information, the service information corresponding to the uplink channel is determined based on priorities of the at least two sets of data from the service type information corresponding to the at least two sets of data.

19. The terminal device according to claim 15, wherein the priority corresponding to the uplink channel is determined based on a first correspondence and the service information corresponding to the uplink channel, and the first correspondence is a correspondence between the service information corresponding to the uplink channel and the priority corresponding to the uplink channel.

20. A network side device, comprising:

a sending module, configured to send a first correspondence to a terminal device, wherein the first correspondence is a correspondence between service information corresponding to an uplink channel and a priority corresponding to the uplink channel,

wherein the service information corresponding to the uplink channel comprises at least one of the following:

service type information corresponding to data comprised in the uplink channel; and

service type information corresponding to triggering of uplink channel sending,

characterized in that when the uplink channel comprises a physical uplink shared channel PUSCH, service type information corresponding to data comprised in the PUSCH comprises at least one of the following: information corresponding to a logical channel of the data comprised in the PUSCH, a type of a Media Access Control control element MAC CE, and a priority of the Media Access Control control element MAC CE;

and/or

when the uplink channel comprises a physical uplink control channel PUCCH, service type information corresponding to data comprised in the PUCCH comprises: service information corresponding to a data type;

and/or

when the uplink channel comprises a physical random access channel PRACH, service type information corresponding to triggering of PRACH sending comprises at least one of the following: a type of a trigger event that triggers the PRACH sending, and information corresponding to a logical channel that triggers the PRACH sending;

and/or

when the uplink channel comprises a sounding reference signal SRS channel, service type information corresponding to triggering of SRS sending comprises: a type of a trigger event that triggers the SRS sending,

wherein when the data type comprises a scheduling request SR, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers SR sending;

and/or

when the data type comprises hybrid automatic repeat request HARQ feedback, the service information corresponding to the data type comprises information corresponding to a logical channel that triggers HARQ sending;

and/or

when the data type comprises a channel state information CSI report, the service information corresponding to the data type comprises a trigger type that triggers the CSI report,

wherein the information corresponding to the logical channel comprises a priority of the logical channel.