CLAIMS

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

receiving, by user equipment UE, a response message to a beam failure recovery request from a network device;

determining, by the UE based on a first beam indicated in the beam failure recovery request, target beam information; and

transmitting, by the UE by using the target beam information, first information within a first predetermined time period; wherein

a start point of the first predetermined time period is: a time at which the UE receives the response message, or a time after a first duration following reception of the response message by the UE; and the first duration is associated with a target subcarrier spacing; and

the target subcarrier spacing comprises: a first subcarrier spacing corresponding to a first carrier on which the response message is located, and/or a second subcarrier spacing corresponding to a second carrier on which the first information is located.

2. The method according to claim 1, wherein the receiving, by UE, a response message to a beam failure recovery request from a network device comprises:

in a case that a first cell is on an FR2 band and that the first cell is a cell other than a secondary cell with a beam failure, determining, by the UE based on transmission configuration indicator TCI state information of a downlink channel in which the response message is located, a second beam, and using, by the UE, the second beam to receive the response message from the network device;

or,

in a case that the first cell is a secondary cell with a beam failure, using, by the UE, the first beam to receive the response message from the network device; wherein

the first cell is a cell where the response message is transmitted.

3. The method according to claim 1, wherein the method further comprises:

determining, by the UE based on the first subcarrier spacing, the first duration; or

determining, by the UE based on the second subcarrier spacing, the first duration; or

determining, by the UE based on a third subcarrier spacing, the first duration, wherein the third subcarrier spacing is the larger one of the first subcarrier spacing and the second subcarrier spacing, or the third subcarrier spacing is the smaller one of the first subcarrier spacing and the second subcarrier spacing.

4. The method according to claim 3, wherein

the determining, by the UE based on the first subcarrier spacing, the first duration comprises: in a case that the first carrier is on an FR2 band and that the second carrier is on an FR1 band, determining, by the UE based on the first subcarrier spacing, the first duration; or

in a case that both the first carrier and the second carrier are on the FR2 band, determining, by the UE based on the first subcarrier spacing, the first duration; and

the determining, by the UE based on the second subcarrier spacing, the first duration comprises: in a case that the first carrier is on an FR1 band and that the second carrier is on an FR2 band, determining, by the UE based on the second subcarrier spacing, the first duration; or

in a case that both the first carrier and the second carrier are on the FR2 band, determining, by the UE based on the second subcarrier spacing, the first duration.

5. The method according to claim 1, wherein an end point of the first predetermined time period is: a time at which the UE receives second information configured or reconfigured by the network device by using radio resource control RRC signaling, or a time at which the UE receives second information activated by the network device by using a medium access control control element MAC CE command, or a time at which the UE receives second information indicated by the network device by using downlink control information DCI signaling, or a time after the UE transmits feedback information of second information to the network device; wherein

the second information is transmission configuration indicator TCI state information or spatial relation information of the first information.

6. The method according to any one of claims 1 to 5, wherein the first information comprises at least one of the following: a physical downlink control channel PDCCH on a control resource set CORESET, a physical downlink shared channel PDSCH, a physical uplink control channel PUCCH, a physical uplink shared channel PUSCH, a channel state information reference signal CSI-RS, and a sounding reference signal SRS.

7. The method according to claim 6, wherein the CSI-RS is used for beam failure detection or CSI measurement; or a higher-layer parameter usage of a resource set to which an SRS resource of the SRS belongs is set to codebook or non codebook or antenna switching.

8. The method according to any one of claims 1 to 5, wherein a cell where the first information is transmitted comprises at least one of the following:

a secondary cell with a beam failure;

all cells in a cell group to which a secondary cell with a beam failure belongs; and

all cells in a band in which a secondary cell with a beam failure is located.

9. An information transmission method, wherein the method comprises:

transmitting, by a network device, a response message to a beam failure recovery request to UE;

determining, by the network device based on a first beam indicated in the beam failure recovery request, target beam information; and

transmitting, by the network device by using the target beam information, first information within a second predetermined time period; wherein

a start point of the second predetermined time period is: a time at which the network device transmits the response message, or a time after a second duration following transmission of the response message by the network device; and the second duration is associated with a target subcarrier spacing; and

the target subcarrier spacing comprises: a subcarrier spacing corresponding to a first carrier on which the response message is located, and/or a subcarrier spacing corresponding to a second carrier on which the first information is located.

10. The method according to claim 9, wherein the transmitting, by a network device, a response message to a beam failure recovery request to UE comprises:

in a case that a first cell is on an FR2 band and that the first cell is a cell other than a secondary cell with a beam failure, determining, by the network device based on transmission configuration indicator TCI state information used by a downlink channel in which the response message is located, a second beam, and using, by the UE, the second beam to transmit the response message to the UE;

or,

in a case that the first cell is a secondary cell with a beam failure, using, by the network device, the first beam to transmit the response message to the UE; wherein

the first cell is a cell where the response message is transmitted.

11. The method according to claim 9, wherein the method further comprises:

determining, by the network device based on the first subcarrier spacing, the second duration; or

determining, by the network device based on the second subcarrier spacing, the second duration; or

determining, by the network device based on a third subcarrier spacing, the second duration; wherein the third subcarrier spacing is a larger one of the first subcarrier spacing and the second subcarrier spacing, or the third subcarrier spacing is the smaller one of the first subcarrier spacing and the second subcarrier spacing.

12. The method according to any one of claims 9 to 11, wherein the first information comprises at least one of the following: a PDCCH on a CORESET, a PDSCH, a PUCCH, a PUSCH, a CSI-RS, and an SRS.

13. The method according to any one of claims 9 to 11, wherein a cell where the first information is transmitted comprises at least one of the following:

a secondary cell with a beam failure;

all cells in a cell group to which a secondary cell with a beam failure belongs; and

all cells in a band in which a secondary cell with a beam failure is located.

14. UE, wherein the UE comprises:

a transmission module, configured to receive a response message to a beam failure recovery request from a network device; and

a determining module, configured to determine, based on a first beam indicated in the beam failure recovery request, target beam information;

the transmission module is further configured to transmit, within a first predetermined time period, first information by using the target beam information determined by the determining module; wherein

a start point of the first predetermined time period is: a time at which the UE receives the response message, or a time after a first duration following reception of the response message by the UE; and the first duration is associated with a target subcarrier spacing; and

the target subcarrier spacing comprises: a first subcarrier spacing corresponding to a first carrier on which the response message is located, and/or a second subcarrier spacing corresponding to a second carrier on which the first information is located.

15. The UE according to claim 14, wherein the determining module is further configured to:

in a case that a first cell is on an FR2 band and that the first cell is a cell other than a secondary cell with a beam failure, based on transmission configuration indicator TCI state information of a downlink channel in which the response message is located, determine a second beam, and use the second beam to receive the response message from the network device;

or,

in a case that the first cell is a secondary cell with a beam failure, use the first beam to receive the response message from the network device; wherein

the first cell is a cell where the response message is transmitted.

16. The UE according to claim 14, wherein the determining module is further configured to:

determine, based on the first subcarrier spacing, the first duration; or

determine, based on the second subcarrier spacing, the first duration; or

determine, based on a third subcarrier spacing, the first duration; wherein the third subcarrier spacing is a larger one of the first subcarrier spacing and the second subcarrier spacing, or the third subcarrier spacing is the smaller one of the first subcarrier spacing and the second subcarrier spacing.

17. The UE according to any one of claims 14 to 16, wherein the first information comprises at least one of the following: a physical downlink control channel PDCCH on a control resource set CORESET, a physical downlink shared channel PDSCH, a physical uplink control channel PUCCH, a physical uplink shared channel PUSCH, a channel state information reference signal CSI-RS, and a sounding reference signal SRS.

18. The UE according to any one of claims 14 to 16, wherein a cell where the first information is transmitted comprises at least one of the following:

a secondary cell with a beam failure;

all cells in a cell group to which a secondary cell with a beam failure belongs; and

all cells in a band in which a secondary cell with a beam failure is located.

19. A network device, wherein the network device comprises:

a transmission module, configured to transmit a response message to a beam failure recovery request to UE; and

a determining module, configured to determine, based on a first beam indicated in the beam failure recovery request, target beam information; wherein

the transmission module is further configured to transmit, within a second predetermined time period, first information by using the target beam information determined by the determining module; wherein

a start point of the second predetermined time period is: a time at which the network device transmits the response message, or a time after a second duration

following transmission of the response message by the network device; and the second duration is associated with a target subcarrier spacing; and

the target subcarrier spacing comprises: a subcarrier spacing corresponding to a first carrier on which the response message is located, and/or a subcarrier spacing corresponding to a second carrier on which the first information is located.

20. 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 transmission methods according to any one of claims 1 to 8 or any one of claims 9 to 13 are implemented.