METHOD AND DEVICE FOR ALLOCATING BEAM FAILURE REQUEST RESOURCES

TECHNICAL FIELD

The disclosure relates to the technical field of wireless communication, and in particular to a method and an apparatus for allocating beam failure request resources, and a storage medium.

BACKGROUND

In a New Radio (NR) communication system, in order to ensure coverage and resist path loss, it is usually necessary to transmit and receive data based on beams. In NR, since the control channel also needs to use beam-based transmission and reception, when the terminal moves or the direction of the antenna rotates, the beam currently configured for the terminal for transmission and reception may have problems, that is, the problem of beam failure appears.

In the related art, when the terminal detects that a beam failure occurs in the secondary cell (SCell), the network device needs to configure a physical uplink control channel-beam failure request (PUCCH- BFR) resource for the terminal to send BFR to the network device, indicating that beam failure has occurred. At present, for the terminal, the network device (such as a base station) may configure multiple PUCCH-BFR resources on its different serving cells. How to select a PUCCH-BFR resource for sending BFR among multiple PUCCH-BFR resources is a problem that needs to be resolved.

SUMMARY

In order to overcome problems existing in the related art, embodiments of the disclosure provide a method and an apparatus for allocating beam failure request resources, and a storage medium.

According to a first aspect of embodiments of the disclosure, a method for allocating beam failure request resources is provided. The method is applied to a terminal, wherein the

terminal is configured with a plurality of beam failure request resources, and the plurality of beam failure request resources consist of physical uplink control channel beam failure request resources configured for serving cells in a plurality of service cell groups configured for the terminal. The method for allocating beam failure request resources includes:

detecting whether there is a first secondary cell with beam failure; in response to detecting the first secondary cell with beam failure, selecting one beam failure request resource from the plurality of beam failure request resources as a resource for sending a beam failure request, according to whether the first secondary cell is configured with a beam failure request resource.

According to a second aspect of embodiments of the disclosure, an apparatus for allocating beam failure request resources is provided. The apparatus is a terminal, wherein the terminal is configured with a plurality of beam failure request resources, and the plurality of beam failure request resources consist of physical uplink control channel beam failure request resources configured for serving cells in a plurality of service cell groups configured for the terminal. The apparatus for allocating beam failure request resources includes:

a detecting unit, configured to detect whether there is a first secondary cell with beam failure; a selecting unit, configured to, in response to that the detecting unit detects the first secondary cell with beam failure, select one beam failure request resource from the plurality of beam failure request resources as a resource for sending a beam failure request, according to whether the first secondary cell is configured with a beam failure request resource.

The technical solutions provided by embodiments of the present disclosure may include the following beneficial effects: when a secondary cell in which a beam failure occurs is detected, one beam failure request resource is selected from a plurality of beam failure request resources according to whether the secondary cell is configured with a beam failure request resource, as the resource for sending the beam failure request, which realizes determining the resource for sending the beam failure request from the plurality of beam failure request resources.

It should be understood that the above general description and the following detailed description is only exemplary and explanatory, and cannot limit the disclosure.

WHAT IS CLAIMED IS:

1. A method for allocating beam failure request resources, performed by a terminal, wherein the terminal is configured with a plurality of beam failure request resources, and the plurality of beam failure request resources include physical uplink control channel beam failure request resources configured for serving cells in a plurality of service cell groups configured for the terminal, the method comprising:

detecting whether there is a first secondary cell with beam failure;

in response to detecting the first secondary cell with beam failure, selecting one beam failure request resource from the plurality of beam failure request resources as a resource for sending a beam failure request, according to whether the first secondary cell is configured with a beam failure request resource.

2. The method of claim 1, wherein when the first secondary cell is not configured with the beam failure request resource, selecting one beam failure request resource from the plurality of beam failure request resources by at least one of following ways:

selecting the beam failure request resource configured for the serving cell in the serving cell group to which the first secondary cell belongs;

selecting the beam failure request resource that occurs first in time;

selecting the beam failure request resource that does not need to transmit other uplink information;

selecting the beam failure request resource that can be multiplexed with other uplink information.

3. The method of claim 1, wherein when the first secondary cell is configured with the beam failure request resource, the beam failure request resource configured for the serving cell in another serving cell group different from the serving cell group to which the first secondary cell belongs is selected.

4. The method of claim 1, further comprising:

sending a media access control information element by using a physical uplink shared channel resource requested by the selected beam failure request resource, wherein the medium access control information element is configured to indicate whether a beam failure occurs in a secondary cell in the serving cell group configured for the terminal.

5. The method of claim 4, wherein the plurality of beam failure request resources comprise a beam failure request resource configured for a primary cell or a primary secondary cell, and a beam failure request resource configured for a second secondary cell;

when the selected beam failure request resource is the beam failure request resource configured for the primary cell or the primary secondary cell,

the medium access control information element is configured to indicate whether beam failure occurs in secondary cells in all serving cell groups configured for the terminal.

6. The method of claim 4, wherein the plurality of beam failure request resources comprise a beam failure request resource configured for a primary cell or a primary secondary cell, and a beam failure request resource configured for a second secondary cell;

when the selected beam failure request resource is the beam failure request resource configured for the second secondary cell,

the medium access control information element is configured to indicate whether beam failure occurs in other secondary cells other than the second secondary cell in the serving cell group to which the second secondary cell belongs.

7. The method of any one of claims 4 to 6, further comprising:

in response to determining that a new beam exists in the first secondary cell, the medium access control information element is further configured to indicate the new beam.

8. A terminal, wherein the terminal is configured with a plurality of beam failure request resources, and the plurality of beam failure request resources consist of physical uplink control channel beam failure request resources configured for serving cells in a plurality of service cell groups configured for the terminal, the terminal comprising:

a processor;

a memory configured to store instructions executable by the processor,

wherein the processor is configured to:

detect whether there is a first secondary cell with beam failure;

in response to detecting the first secondary cell with beam failure, select one beam failure request resource from the plurality of beam failure request resources as a resource for sending a beam failure request, according to whether the first secondary cell is configured with a beam failure request resource.

9. The terminal of claim 8, wherein when the first secondary cell is not configured with the beam failure request resource, the processor is configured to select one beam failure request resource from the plurality of beam failure request resources by at least one of following ways:

selecting the beam failure request resource configured for the serving cell in the serving cell group to which the first secondary cell belongs;

selecting the beam failure request resource that occurs first in time;

selecting the beam failure request resource that does not need to transmit other uplink information;

selecting the beam failure request resource that can be multiplexed with other uplink information.

10. The terminal of claim 8, wherein when the first secondary cell is configured with the beam failure request resource, the processor is configured to select the beam failure request resource configured for the serving cell in another serving cell group different from the serving cell group to which the first secondary cell belongs.

11. The terminal of claim 8, wherein the processor is further configured to:

send a media access control information element by using a physical uplink shared channel resource requested by the selected beam failure request resource, wherein the medium access control information element is configured to indicate whether a beam failure occurs in a secondary cell in the serving cell group configured for the terminal.

12. The terminal of claim 11, wherein the plurality of beam failure request resources comprise a beam failure request resource configured for a primary cell or a primary secondary cell, and a beam failure request resource configured for a second secondary cell;

when the selected beam failure request resource is the beam failure request resource configured for the primary cell or the primary secondary cell,

the medium access control information element is configured to indicate whether beam failure occurs in secondary cells in all serving cell groups configured for the terminal.

13. The terminal of claim 11, wherein the plurality of beam failure request resources comprise a beam failure request resource configured for a primary cell or a primary secondary cell, and a beam failure request resource configured for a second secondary cell;

when the selected beam failure request resource is the beam failure request resource configured for the second secondary cell,

the medium access control information element is configured to indicate whether beam failure occurs in other secondary cells other than the second secondary cell in the serving cell group to which the second secondary cell belongs.

14. The terminal of any one of claims 11 to 13, wherein the processor is further configured such that:

in response to determining that a new beam exists in the first secondary cell, the medium access control information element is further configured to indicate the new beam.