

CLAIMS

What is claimed is:

1. A method for transmitting failure information, applied to a communications device, wherein the method comprises:

5 in a case that failure has occurred on first connection(s) in a dual active protocol stack DAPS mobility procedure, transmitting failure information of at least one of the first connection(s); and

transmitting failure timing duration(s) of the at least one of the first connection(s), wherein a failure timing duration of each connection is a duration from a first time point
10 to a time point when the connection fails, wherein

the first connection(s) comprise at least one of the following: a source connection between a terminal and a source cell or a target connection between the terminal and a target cell, and

the first time point is any one of the following:

15 a time point when the terminal receives a first command, wherein the first command instructs the terminal to perform the DAPS mobility procedure; or

a time point when the terminal starts to perform the DAPS mobility procedure.

20 2. The method according to claim 1, wherein in a case that the first connection(s) are the source connection or the target connection, the failure information satisfies any one of the following:

that the failure information comprises first indication information for indicating a connection corresponding to the failure information; and

25 that the failure information is transmitted over a target resource, wherein the target resource is a resource corresponding to a second connection, and the second connection is a connection other than the connection corresponding to the failure information in the first connection(s).

3. The method according to claim 1, wherein in a case that the first connection(s) comprise the source connection and the target connection and that a connection corresponding to the failure information is the source connection or the target connection, the method further comprises:

5 transmitting second indication information for indicating that the terminal has experienced source connection failure and target connection failure.

4. The method according to claim 1, wherein the failure information comprises third indication information for indicating any one of the following:

10 that a connection corresponding to the failure information fails before completion of random access to the target connection; and

 that a connection corresponding to the failure information fails after completion of random access to the target connection.

5. The method according to claim 1, wherein in a case that a first condition is satisfied, the failure information comprises at least one of the following: fourth
15 indication information for indicating a failure type of a connection corresponding to the failure information, or measurement information, wherein

 that the first condition is satisfied comprises any one of the following:

 that the first connection is the source connection or the target connection; and

20 that the first connection(s) comprise the source connection and the target connection and that a connection corresponding to the failure information is the source connection or the target connection.

6. The method according to claim 5, wherein in a case that a second condition is satisfied, the failure type of the connection corresponding to the failure information comprises any one of the following: radio link failure, integrity check failure, radio
25 resource control RRC message reconfiguration failure, and maximum uplink transmission timing difference exceeded, wherein

 that the second condition is satisfied comprises any one of the following:

 that the connection corresponding to the failure information is the source connection; and

that the connection corresponding to the failure information is the target connection and that the connection corresponding to the failure information fails after completion of the random access to the target connection.

7. The method according to claim 5, wherein in a case that the connection
5 corresponding to the failure information is the target connection and that the connection corresponding to the failure information fails before completion of the random access to the target connection, the failure type of the connection corresponding to the failure information comprises any one of the following: handover failure, secondary cell group SCG addition failure, radio link failure, integrity check failure, RRC message
10 reconfiguration failure, and maximum uplink transmission timing difference exceeded.

8. The method according to claim 1, wherein in a case that the first connection(s) comprise the source connection and the target connection and that connections corresponding to the failure information comprise the source connection and the target connection, the failure information comprises at least one of the following:

15 fifth indication information for indicating that the terminal has experienced source connection failure and target connection failure;

sixth indication information for indicating failure type(s) of at least one of the source connection or the target connection; or

measurement information.

20 9. The method according to claim 8, wherein the sixth indication information satisfies any one of the following:

in a case that the sixth indication information is used to indicate the failure type of the source connection or the target connection, a connection corresponding to the sixth indication information is prescribed by a protocol or configured by a network side
25 device; and

in a case that the sixth indication information is used to indicate the failure types of the source connection and the target connection, the sixth indication information is further used to indicate a connection corresponding to each failure type;

or,

wherein the failure type(s) indicated by the sixth indication information satisfy at least one of the following:

in a case that the connection corresponding to the sixth indication information fails before the terminal is connected to the target cell, the failure type(s) indicated by the sixth indication information comprise at least one of the following: handover failure, SCG addition failure, radio link failure, integrity check failure, RRC message reconfiguration failure, or maximum uplink transmission timing difference exceeded; or

in a case that the connection corresponding to the sixth indication information fails after the terminal is connected to the target cell, the failure type(s) indicated by the sixth indication information comprise at least one of the following: radio link failure, integrity check failure, RRC message reconfiguration failure, or maximum uplink transmission timing difference exceeded.

10. The method according to claim 5 or 8, wherein the measurement information comprises at least one of the following: source cell measurement result, target cell measurement result, or neighboring cell measurement result, wherein

the source cell is a primary cell PCell or a secondary cell SCell, and the target cell is a PCell or a SCell.

11. The method according to claim 1, wherein transmitting the failure timing duration(s) of the at least one of the first connection(s) comprises:

transmitting the failure timing duration(s) of the at least one of the first connection(s) in response to a third condition being satisfied, wherein

that the third condition is satisfied comprises any one of the following:

that N connections of the terminal have failed, the terminal is allowed to report failure timing durations of M of the N connections; or

that N connections of the terminal have failed, the terminal is allowed to report failure timing duration(s) of connection(s) of a target type in the N connections, and that the first connection(s) comprise connection(s) of the target type, wherein

N is a positive integer, and M is a positive integer less than or equal to N.

12. The method according to claim 11, wherein connection(s) corresponding to the transmitted failure timing duration(s) satisfy any one of the following:

that in a case that the third condition being satisfied comprises the terminal being allowed to report failure timing durations of M of the N connections, the connection(s) corresponding to the transmitted failure timing duration(s) comprise all of the first connection(s); and

that in a case that the third condition being satisfied comprises the terminal being allowed to report failure timing duration(s) of connection(s) of a target type in the N connections and that the first connection(s) comprise connection(s) of the target type, the connection(s) corresponding to the transmitted failure timing duration(s) comprise the connection(s) of the target type in the first connection(s).

13. The method according to claim 11, wherein the first time point is any one of the following:

a time point when the terminal receives a first command, wherein the first command instructs the terminal to perform a DAPS mobility procedure; and

a time point when the terminal starts to perform a DAPS mobility procedure.

14. The method according to claim 1, wherein before the transmitting failure information of at least one of the first connection(s), the method further comprises:

transmitting seventh indication information for indicating that the terminal has stored the failure information.

15. A communications device, comprising:

a first transmission module, configured to: in a case that failure has occurred on first connection(s) in a dual active protocol stack DAPS mobility procedure, transmit failure information of at least one of the first connection(s), and transmit failure timing duration(s) of the at least one of the first connection(s), wherein a failure timing duration of each connection is a duration from a first time point to a time point when the connection fails, wherein

the first connection(s) comprise at least one of the following: a source connection between a terminal and a source cell or a target connection between the terminal and a target cell, and

the first time point is any one of the following:

a time point when the terminal receives a first command, wherein the first command instructs the terminal to perform the DAPS mobility procedure; or

5 a time point when the terminal starts to perform the DAPS mobility procedure.

16. The communications device according to claim 15, wherein in a case that the first connection(s) are the source connection or the target connection, the failure information satisfies any one of the following:

10 that the failure information comprises first indication information for indicating a connection corresponding to the failure information; and

that the failure information is transmitted over a target resource, wherein the target resource is a resource corresponding to a second connection, and the second connection is a connection other than the connection corresponding to the failure information in
15 the first connection(s).

17. The communications device according to claim 15, wherein the failure information comprises third indication information for indicating any one of the following:

that a connection corresponding to the failure information fails before completion
20 of random access to the target connection; and

that a connection corresponding to the failure information fails after completion of random access to the target connection.

18. The communications device according to claim 15, further comprising:

a third transmission module, configured to transmit the failure timing duration(s)
25 of the at least one of the first connection(s) in response to a third condition being satisfied, wherein

that the third condition is satisfied comprises any one of the following:

that N connections of the terminal have failed, the terminal is allowed to report failure timing durations of M of the N connections; and

that N connections of the terminal have failed, the terminal is allowed to report failure timing duration(s) of connection(s) of a target type in the N connections, and that the first connection(s) comprise connection(s) of the target type, wherein N is a positive integer, and M is a positive integer less than or equal to N.

5 19. The communications device according to claim 18, wherein connection(s) corresponding to the transmitted failure timing duration(s) satisfy any one of the following:

that in a case that the third condition being satisfied comprises the terminal being allowed to report failure timing durations of M of the N connections, the connection(s)
10 corresponding to the transmitted failure timing duration(s) comprise all of the first connection(s); and

that in a case that the third condition being satisfied comprises the terminal being allowed to report failure timing duration(s) of connection(s) of a target type in the N connections and that the first connection(s) comprise connection(s) of the target type,
15 the connection(s) corresponding to the transmitted failure timing duration(s) comprise the connection(s) of the target type in the first connection(s);

or,

wherein the first time point is any one of the following:

a time point when the terminal receives a first command, wherein the first
20 command instructs the terminal to perform a DAPS mobility procedure; and

a time point when the terminal starts to perform a DAPS mobility procedure.

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 method for transmitting failure information according to any
25 one of claims 1 to 14 are implemented.