

## CLAIMS

What is claimed is:

1. A link error recovery method, wherein the method is applied to a transmitter multi-link device (MLD), links between the transmitter MLD and a receiver MLD comprise a first link and a second link, one of the transmitter MLD and the receiver MLD has a simultaneous transmitting and receiving (STR) capability while the other does not have the STR capability, and the method comprises:

determining, by the transmitter MLD, that transmission of a first physical protocol data unit (PPDU) on the first link fails; and

transmitting, by the transmitter MLD, a second PPDU to the receiver MLD at a first moment by using the first link, the second PPDU being used to retransmit an error part in the first PPDU, wherein

the first moment is a moment at which the transmitter MLD obtains transmission status information of the second link, and the transmission status information of the second link is used to indicate that transmission of a third PPDU on the second link fails; or

the first moment is a moment for transmitting a next PPDU on the first link if the first PPDU is normally transmitted.

2. The method according to claim 1, wherein an interval between the moment at which the transmitter MLD obtains the transmission status information of the second link and a predicted start moment of a first ~~acknowledgement block~~ acknowledgement (BA) is less than or equal to first duration, ~~and the first moment is the moment at which the transmitter MLD obtains the transmission status information of the second link,~~ wherein

the first BA is a BA of the first PPDU, and the first duration is a sum of a length of the first BA and short interframe space (SIFS).

3. The method according to claim 1 or 2, wherein obtaining, by the transmitter MLD, the transmission status information of the second link comprises:

receiving, by a first station, the transmission status information of the second link that is from a second station, wherein the first station is a station that is in the transmitter MLD and supports the first link, and the second station is a station that is in the transmitter MLD and supports the second link.

4. The method according to claim 1, wherein before a second moment, the transmitter MLD does not obtain the transmission status information of the second link, and the first moment is a moment for transmitting a next PPDU on the first link if the first PPDU is normally transmitted, wherein

5 the second moment is later than a predicted end moment of the first BA, an interval between the second moment and the predicted end moment of the first BA is SIFS, and the first BA is a BA of the first PPDU.

54. The method according to any one of claims 1 to 43, wherein an end moment of the second PPDU is the same as that of a fourth PPDU on the second link, and the fourth PPDU is used to retransmit an error part in the third PPDU.

10 5. A link error recovery method, wherein the method is applied to a transmitter multi-link device (MLD), links between the transmitter MLD and a receiver MLD comprise a first link and a second link, one of the transmitter MLD and the receiver MLD has a simultaneous transmitting and receiving (STR) capability while the other does not have the STR capability, and the method comprises:

15 determining, by the transmitter MLD, that transmission of a first physical protocol data unit (PPDU) on the first link fails; and

20 transmitting, by the transmitter MLD before a second moment, a second PPDU to the receiver MLD at a first moment by using the first link, the second PPDU being used to retransmit an error part in the first PPDU, wherein the first moment is a moment for transmitting a next PPDU on the first link if the first PPDU is normally transmitted, the second moment is a moment before which the transmitter MLD does not obtain transmission status information of the second link, wherein the second moment is later than a predicted end moment of a block acknowledgement (BA) of the first PPDU, an interval between the second moment and the predicted end moment of the BA is  
25 short interframe space (SIFS).

6. A link error recovery method, wherein the method is applied to a transmitter multi-link device (MLD), a plurality of links between the transmitter MLD and a receiver MLD comprise a first link, the transmitter MLD has a simultaneous transmitting and receiving (STR) capability while the receiver MLD does not have the STR capability, and the method comprises:

30 determining, by the transmitter MLD, that transmission of a first physical protocol data unit (PPDU) on the first link fails; and

transmitting, by the transmitter MLD, a second PPDU to the receiver MLD at a first moment by using the first link, the second PPDU being used to retransmit an error part in the first PPDU, wherein

the first moment is a predicted end moment of a first ~~acknowledgement-block~~  
5 acknowledgement (BA), and the first BA is a BA of the first PPDU.

7. A link error recovery method, wherein the method is applied to a transmitter multi-link device (MLD), a plurality of links between the transmitter MLD and a receiver MLD comprise a first link, the transmitter MLD has a simultaneous transmitting and receiving (STR) capability while the receiver MLD does not have the STR capability, and the method comprises:

10 determining, by the transmitter MLD, that transmission of a first physical protocol data unit (PPDU) or a first ~~acknowledgement-block~~ acknowledgement (BA) on the first link fails, wherein the first BA is a BA of the first PPDU;

starting, by the transmitter MLD, to perform channel backoff at a first moment, wherein the first moment is an end moment of the first BA; and

15 after the channel backoff ends, transmitting, by the transmitter MLD, a second PPDU to the receiver MLD by using the first link, the second PPDU being used to retransmit an error part in the first PPDU.

8. The method according to claim 6 or 7, wherein the links between the transmitter MLD and the receiver MLD further comprise a second link, an end moment of the first PPDU is the same as  
20 that of a third PPDU on the second link, and an end moment of the second PPDU is the same as that of a fourth PPDU on the second link.

9. A link error recovery method, wherein the method is applied to a transmitter multi-link device (MLD), a plurality of links between the transmitter MLD and a receiver MLD comprise a first link, one of the transmitter MLD and the receiver MLD has a simultaneous transmitting and  
25 receiving (STR) capability while the other does not have the STR capability, and the method comprises:

receiving, by the transmitter MLD, a first block acknowledgement (BA) on the first link, wherein the first BA is a BA of a first physical protocol data unit (PPDU); and

transmitting, by the transmitter MLD, a second PPDU to the receiver MLD by using the first  
30 link, wherein an interval between a start moment of the second PPDU and an end moment of the first BA is interframe space, and the interframe space is point coordination function interframe

space (PIFS).

10. A transmitter multi-link device (MLD), wherein the transmitter MLD supports a plurality of links for communication with a receiver MLD, the plurality of links comprise a first link and a second link, wherein the transmitter MLD has a simultaneous transmitting and receiving (STR) capability while the receiver MLD does not have the STR capability, and wherein the transmitter MLD comprises a processing module and a transceiver module, wherein

the processing module is configured to determine that transmission of a first physical protocol data unit (PPDU) on the first link fails; and

the transceiver module is configured to transmit a second PPDU to the receiver MLD at a first moment by using the first link, the second PPDU being used to retransmit an error part in the first PPDU, wherein

the first moment is a moment at which the transmitter MLD obtains transmission status information of the second link, and the transmission status information of the second link is used to indicate that transmission of a third PPDU on the second link fails; or

the first moment is a moment for transmitting a next PPDU on the first link if the first PPDU is normally transmitted.

11. The transmitter MLD according to claim 10, wherein an interval between the moment at which the transmitter MLD obtains the transmission status information of the second link and a predicted start moment of a first ~~acknowledgement block~~ acknowledgement (BA) is less than or equal to first duration, ~~and the first moment is a moment at which the transmitter MLD obtains the transmission status information of the second link,~~ wherein

the first BA is a BA of the first PPDU, and the first duration is a sum of a length of the first BA and short interframe space (SIFS).

12. The transmitter MLD according to claim 10 or 11, wherein obtaining, by the transmitter MLD, the transmission status information of the second link comprises:

receiving, by a first station, the transmission status information of the second link that is from a second station by using the transceiver module, wherein the first station is a station that is in the transmitter MLD and supports the first link, and the second station is a station that is in the transmitter MLD and supports the second link.

~~13. The transmitter MLD according to claim 10, wherein before a second moment, the transmitter MLD does not obtain the transmission status information of the second link, and the~~

first moment is a moment for transmitting a next PPDU on the first link if the first PPDU is normally transmitted, wherein

the second moment is later than a predicted end moment of the first BA, an interval between the second moment and the predicted end moment of the first BA is SIFS, and the first BA is a BA of the first PPDU.

1413. The transmitter MLD method according to any one of claims 10 to 1312, wherein an end moment of the second PPDU is the same as that of a fourth PPDU on the second link, and the fourth PPDU is used to retransmit an error part in the third PPDU.

1414. A transmitter multi-link device (MLD), wherein the transmitter MLD supports a plurality of links for communication with a receiver MLD, the plurality of links comprise a first link, wherein the transmitter MLD has a simultaneous transmitting and receiving (STR) capability while the receiver MLD does not have the STR capability, and wherein the transmitter MLD comprises a processing module and a transceiver module, wherein

the processing module is configured to determine that transmission of a first physical protocol data unit (PPDU) on the first link fails; and

the transceiver module is configured to transmit a second PPDU to the receiver MLD at a first moment by using the first link, the second PPDU being used to retransmit an error part in the first PPDU, wherein

the first moment is a predicted end moment of a first ~~acknowledgement~~ block acknowledgement (BA), and the first BA is a BA of the first PPDU.

1415. A transmitter multi-link device (MLD), wherein the transmitter MLD supports a plurality of links for communication with a receiver MLD, the plurality of links comprise a first link, and wherein the transmitter MLD has a simultaneous transmitting and receiving (STR) capability while the receiver MLD does not have the STR capability, wherein the transmitter MLD comprises a processing module and a transceiver module, wherein

the processing module is configured to determine that transmission of a first physical protocol data unit (PPDU) or a first ~~acknowledgement~~ block acknowledgement (BA) on the first link fails, wherein the first BA is a BA of the first PPDU;

the processing module is further configured to start to perform channel backoff at a first moment, wherein the first moment is an end moment of the first BA; and

the transceiver module is configured to transmit, after the channel backoff ends, a second

PPDU to the receiver MLD by using the first link, the second PPDU being used to retransmit an error part in the first PPDU.

16. The transmitter MLD according to claim 15 or 16, wherein the plurality of links further comprise a second link, an end moment of the first PPDU is the same as that of a third PPDU on the second link, and an end moment of the second PPDU is the same as that of a fourth PPDU on the second link.

17. A transmitter multi-link device (MLD), wherein the transmitter MLD supports a plurality of links for communication with a receiver MLD, the plurality of links comprise a first link, ~~and wherein the transmitter MLD has a simultaneous transmitting and receiving (STR) capability while the receiver MLD does not have the STR capability, wherein~~ the transmitter MLD comprises a processing module and a transceiver module, wherein

the processing module is configured to receive a first block acknowledgement (BA) on the first link by using the transceiver module, wherein the first BA is a BA of a first physical protocol data unit (PPDU); and

the processing module is further configured to transmit a second PPDU to the receiver MLD on the first link by using the transceiver module, wherein an interval between a start moment of the second PPDU and an end moment of the first BA is interframe space, and the interframe space is point coordination function interframe space (PIFS).

18. A multi-link device, wherein the multi-link device comprises a processor; and when the multi-link device operates, the processor executes computer-executable instructions stored in a memory, ~~so that~~ the multi-link device performs the method according to any one of claims 1 to 9.

19. A computer-readable storage medium, wherein the computer-readable storage medium comprises a computer program, and when the computer program is run on a multi-link device, the multi-link device is enabled to perform the ~~communication~~ method according to any one of claims 1 to 9.

20. A computer program product, wherein the computer program product comprises a computer program, and when the computer program is run on a multi-link device, the multi-link device is enabled to perform the ~~communication~~ method according to any one of claims 1 to 9.

21. A chip, wherein the chip comprises a processor and a communication interface, the communication interface is configured to communicate with a module outside the chip, and the

processor is configured to run a computer program or instructions, a multi-link device comprising the chip is enabled to implement the method according to any one of claims 1 to 9.