

## CLAIMS

What is claimed is:

1. A communication method, comprising:

sending, by a sending device, a first physical layer protocol data unit (PPDU) over a first link,

5 wherein the first PPDU carries a trigger frame; and

sending, by the sending device, a second PPDU over a second link, wherein an end time of sending the second PPDU is not earlier than a first time and not later than a second time, the first time is related to an end time of sending the first PPDU and an aRxTxTurnaroundTime in a short interframe space (SIFS) time, and the second time is related to the end time of sending the first PPDU and the SIFS time.

2. The method according to claim 1, wherein the first time satisfies the following formula:

$$M = T_1 - T_2; \text{ and}$$

the second time satisfies the following formula:  $N = T_1 + T_4$ , wherein

15  $M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $N$  represents the second time, and  $T_4$  represents the SIFS time.

3. The method according to claim 1 or claim 2, wherein the first time is further related to a slot time, and the second time is further related to the slot time.

4. The method according to claim 3, wherein the first time satisfies the following formula:

$$M = T_1 - (T_2 - x \times T_3), \text{ or } M = T_1 - \text{Max}(0, T_2 - x \times T_3); \text{ and}$$

20 the second time satisfies the following formula:  $N = T_1 + (T_4 - y \times T_3)$ , wherein

$M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time,  $\text{Max}$  represents obtaining a maximum value,  $N$  represents the second time,  $T_4$  represents the SIFS time, and  $y$  represents a second delay coefficient.

25 5. The method according to claim 3 or 4, wherein the first time is further related to an air propagation time, and the second time is further related to the air propagation time.

6. The method according to claim 5, wherein the first time satisfies the following formula:

$$M = T_1 - (T_2 - x \times (T_3 - A)), \text{ or } M = T_1 - \text{Max}(0, T_2 - x \times (T_3 - A)); \text{ and}$$

the second time satisfies the following formula:  $N = T_1 + (T_4 - y \times (T_3 - A))$ , wherein

$M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents

5 the aRxTxTurnaroundTime,  $T_3$  represents the slot time,  $x$  represents the first delay coefficient,

$\text{Max}$  represents obtaining a maximum value,  $N$  represents the second time,  $T_4$  represents the SIFS time,  $A$  represents the air propagation time, and  $y$  represents the second delay coefficient.

7. The method according to any one of claims 1 to 6, wherein the method further comprises: receiving, by the sending device, the aRxTxTurnaroundTime from a receiving device.

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8. A communication method, comprising:

sending, by a sending device, a first physical layer protocol data unit (PPDU) over a first link, wherein the first PPDU carries a first trigger frame; and

15 sending, by the sending device, a second PPDU over a second link, wherein the second PPDU carries a second trigger frame, wherein

an absolute value of a time difference between an end time of sending the first PPDU and an end time of sending the second PPDU is less than or equal to a first duration, and the first duration is related to an aRxTxTurnaroundTime in a short interframe space (SIFS) time.

9. The method according to claim 8, wherein the first duration satisfies the following formula:

20  $L = T_2$ , wherein  $L$  represents the first duration, and  $T_2$  represents the aRxTxTurnaroundTime.

10. The method according to claim 8 or 9, wherein the first duration is further related to a slot time.

11. The method according to claim 10, wherein the first duration satisfies the following  
25 formula:

$$L = T_2 - x \times T_3, \text{ or } L = \text{Max}(0, T_2 - x \times T_3), \text{ wherein}$$

$L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time, and  $\text{Max}$  represents obtaining a maximum

value.

12. The method according to claim 10 or 11, wherein the first duration is further related to an air propagation time.

5 13. The method according to claim 12, wherein the first duration satisfies the following formula:

$$L = T_2 - x \times (T_3 - A), \text{ or } L = \text{Max}(0, T_2 - x \times (T_3 - A)), \text{ wherein}$$

$L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents the first delay coefficient,  $T_3$  represents the slot time,  $A$  represents the air propagation time, and  $\text{Max}$  represents obtaining a maximum value.

10 14. The method according to any one of claims 8 to 13, wherein the method further comprises: receiving, by the sending device, the aRxTxTurnaroundTime from a receiving device.

15. A sending device, comprising:

15 a sending unit, configured to send a first physical layer protocol data unit (PPDU) over a first link, wherein the first PPDU carries a trigger frame; and

the sending unit is further configured to send a second PPDU over a second link, wherein an end time of sending the second PPDU is not earlier than a first time and not later than a second time, the first time is related to an end time of sending the first PPDU and an aRxTxTurnaroundTime in a short interframe space (SIFS) time, and the second time is related to the end time of sending the first PPDU and the SIFS time.

16. The sending device according to claim 16, wherein the first time satisfies the following formula:  $M = T_1 - T_2$ ; and

the second time satisfies the following formula:  $N = T_1 + T_4$ , wherein

25  $M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $N$  represents the second time, and  $T_4$  represents the SIFS time

17. The sending device according to claim 15 or 16, wherein the first time is further related to a slot time, and the second time is further related to the slot time.

18. The sending device according to claim 17, wherein the first time satisfies the following

formula:

$$M = T_1 - (T_2 - x \times T_3), \text{ or } M = T_1 - \text{Max}(0, T_2 - x \times T_3); \text{ and}$$

the second time satisfies the following formula:  $N = T_1 + (T_4 - y \times T_3)$ , wherein

$M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents  
5 the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time,  
 $\text{Max}$  represents obtaining a maximum value,  $N$  represents the second time,  $T_4$  represents the  
SIFS time, and  $y$  represents a second delay coefficient.

10 19. The sending device according to claim 17 or 18, wherein the first time is further related  
to an air propagation time, and the second time is further related to the air propagation time.

20. The sending device according to claim 19, wherein the first time satisfies the following  
formula:

$$M = T_1 - (T_2 - x \times (T_3 - A)), \text{ or } M = T_1 - \text{Max}(0, T_2 - x \times (T_3 - A)); \text{ and}$$

the second time satisfies the following formula:  $N = T_1 + (T_4 - y \times (T_3 - A))$ , wherein

15  $M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents  
the aRxTxTurnaroundTime,  $T_3$  represents the slot time,  $x$  represents the first delay coefficient,  
 $\text{Max}$  represents obtaining a maximum value,  $N$  represents the second time,  $T_4$  represents the  
SIFS time,  $A$  represents the air propagation time, and  $y$  represents the second delay coefficient.

20 21. The sending device according to any one of claims 15 to 20, wherein the apparatus further  
comprises:

a receiving unit, configured to receive the aRxTxTurnaroundTime from a receiving device.

22. A sending device, comprising:

25 a sending unit, configured to send a first physical layer protocol data unit (PPDU) over a first  
link, wherein the first PPDU carries a first trigger frame; and the sending unit is further configured  
to send a second PPDU over a second link, wherein the second PPDU carries a second trigger  
frame, wherein

an absolute value of a time difference between an end time of sending the first PPDU and an

end time of sending the second PPDU is less than or equal to a first duration, and the first duration is related to an aRxTxTurnaroundTime in a short interframe space (SIFS) time.

23. The sending device according to claim 22, wherein the first duration satisfies the following formula:

5  $L=T_2$ , wherein

$L$  represents the first duration, and  $T_2$  represents the aRxTxTurnaroundTime.

24. The sending device according to claim 22 or 23, wherein the first duration is further related to a slot time.

10 25. The sending device according to claim 24, wherein the first duration satisfies the following formula:

$$L = T_2 - x \times T_3, \text{ or } L = \text{Max}(0, T_2 - x \times T_3), \text{ wherein}$$

$L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time, and  $\text{Max}$  represents obtaining a maximum value.

15 26. The sending device according to claim 24 or 25, wherein the first duration is further related to an air propagation time.

27. The sending device according to claim 26, wherein the first duration satisfies the following formula:

$$L = T_2 - x \times (T_3 - A), \text{ or } L = \text{Max}(0, T_2 - x \times (T_3 - A)), \text{ wherein}$$

20  $L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents the first delay coefficient,  $T_3$  represents the slot time,  $A$  represents the air propagation time, and  $\text{Max}$  represents obtaining a maximum value.

28. The sending device according to any one of claims 24 to 29, wherein the apparatus further comprises:

25 a receiving unit, configured to receive the aRxTxTurnaroundTime from a receiving device.

29. A communication method, comprising:

receiving, by a receiving device, a first physical layer protocol data unit (PPDU) over a first

link, where the first PPDU carries a trigger frame; and

receiving, by the receiving device, a second PPDU over a second link, wherein an end time of the second PPDU is not earlier than a first time and not later than a second time, the first time is related to an end time of the first PPDU and an aRxTxTurnaroundTime in a short interframe space (SIFS) time, and the second time is related to the end time of the first PPDU and the SIFS time.

30. The method according to claim 29, wherein the first time satisfies the following formula:

$$M = T_1 - T_2;$$

and

the second time satisfies the following formula:  $N = T_1 + T_4$ , wherein

$M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $N$  represents the second time, and  $T_4$  represents the SIFS time.

31. The method according to claim 29 or claim 30, wherein the first time is further related to a slot time, and the second time is further related to the slot time.

32. The method according to claim 31, wherein the first time satisfies the following formula:

$M = T_1 - (T_2 - x \times T_3)$ , or  $M = T_1 - \text{Max}(0, T_2 - x \times T_3)$ ; and the second time satisfies the following formula:  $N = T_1 + (T_4 - y \times T_3)$ , wherein  $M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time,  $\text{Max}$  represents obtaining a maximum value,  $N$  represents the second time,  $T_4$  represents the SIFS time, and  $y$  represents a second delay coefficient.

33. A communication method, comprising:

receiving, by a receiving device, a first physical layer protocol data unit (PPDU) over a first link, where the first PPDU carries a first trigger frame, and sending, by the receiving device, after a SIFS time, a TB PPDU for the first PPDU;

receiving, by the receiving device, a second PPDU over a second link, where the second PPDU carries a second trigger frame, and sending, by the receiving device, after the SIFS time, a

TB PPDU for the second PPDU; wherein

an absolute value of a time difference between an end time of the first PPDU and an end time of the second PPDU is less than or equal to first duration, and the first duration is related to an aRxTxTurnaroundTime in the short interframe space (SIFS) time.

5        34. The method according to claim 33, wherein the first duration satisfies the following formula:  $L=T_2$  , wherein  $L$  represents the first duration, and  $T_2$  represents the aRxTxTurnaroundTime.

35. The method according to claim 33 or 34, wherein the first duration is further related to a slot time.

10       36. The method according to claim 35, wherein the first duration satisfies the following formula:

$$L = T_2 - x \times T_3, \text{ or } L = \text{Max}(0, T_2 - x \times T_3), \text{ wherein}$$

$L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time, and  $\text{Max}$  represents obtaining a maximum value.

15       37. The method according to claim 35 or 36, wherein the first duration is further related to an air propagation time.

38. The method according to claim 37, wherein the first duration satisfies the following formula:

20        $L = T_2 - x \times (T_3 - A)$  , or  $L = \text{Max}(0, T_2 - x \times (T_3 - A))$  , wherein

$L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents the first delay coefficient,  $T_3$  represents the slot time,  $A$  represents the air propagation time, and  $\text{Max}$  represents obtaining a maximum value.

25       39. The method according to any one of claims 33 to 38, wherein the method further comprises:

sending, by the receiving device, the aRxTxTurnaroundTime.

40. A receiving device, comprising:

a receiving unit, configured to receive a first physical layer protocol data unit (PPDU) over a

first link, where the first PPDU carries a trigger frame; and

the receiving unit is further configured to receive a second PPDU over a second link, wherein an end time of the second PPDU is not earlier than a first time and not later than a second time, the first time is related to an end time of the first PPDU and an aRxTxTurnaroundTime in a short interframe space (SIFS) time, and the second time is related to the end time of the first PPDU and the SIFS time.

41. The receiving device according to claim 40, wherein the first time satisfies the following formula:  $M = T_1 - T_2$ ;

and

the second time satisfies the following formula:  $N = T_1 + T_4$ , wherein

$M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $N$  represents the second time, and  $T_4$  represents the SIFS time.

42. The receiving device according to claim 40 or claim 41, wherein the first time is further related to a slot time, and the second time is further related to the slot time.

43. The receiving device according to claim 44 wherein the first time satisfies the following formula:

$M = T_1 - (T_2 - x \times T_3)$ , or  $M = T_1 - \text{Max}(0, T_2 - x \times T_3)$ ; and the second time satisfies the following formula:  $N = T_1 + (T_4 - y \times T_3)$ , wherein  $M$  represents the first time,  $T_1$  represents the end time of the first PPDU,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time,  $\text{Max}$  represents obtaining a maximum value,  $N$  represents the second time,  $T_4$  represents the SIFS time, and  $y$  represents a second delay coefficient.

44. A receiving device, comprising:

a receiving unit, configured to receive a first physical layer protocol data unit (PPDU) over a first link, where the first PPDU carries a first trigger frame; and

a sending unit, configured to send, after a SIFS time, a TB PPDU for the first PPDU;

the receiving unit is further configured to, receive a second PPDU over a second link, where

the second PPDU carries a second trigger frame; and

the sending unit is further configured to send, after the SIFS time, a TB PPDU for the second PPDU; wherein

an absolute value of a time difference between an end time of the first PPDU and an end time of the second PPDU is less than or equal to first duration, and the first duration is related to an aRxTxTurnaroundTime in the short interframe space (SIFS) time.

45. The receiving device according to claim 44, wherein the first duration satisfies the following formula:  $L=T_2$ , wherein  $L$  represents the first duration, and  $T_2$  represents the aRxTxTurnaroundTime.

10 46. The receiving device according to claim 44 or 45, wherein the first duration is further related to a slot time.

47. The receiving device according to claim 46, wherein the first duration satisfies the following formula:

$$L = T_2 - x \times T_3, \text{ or } L = \text{Max}(0, T_2 - x \times T_3), \text{ wherein}$$

15  $L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents a first delay coefficient,  $T_3$  represents the slot time, and  $\text{Max}$  represents obtaining a maximum value.

48. The receiving device according to claim 46 or 47, wherein the first duration is further related to an air propagation time.

20 49. The receiving device according to claim 48, wherein the first duration satisfies the following formula:

$$L = T_2 - x \times (T_3 - A), \text{ or } L = \text{Max}(0, T_2 - x \times (T_3 - A)), \text{ wherein}$$

$L$  represents the first duration,  $T_2$  represents the aRxTxTurnaroundTime,  $x$  represents the first delay coefficient,  $T_3$  represents the slot time,  $A$  represents the air propagation time, and  
25  $\text{Max}$  represents obtaining a maximum value.

50. The receiving device according to any one of claims 44 to 49, wherein the method further comprises:

sending, by the receiving device, the aRxTxTurnaroundTime.

51. A communication apparatus, comprising a processing circuit and an interface circuit, wherein the interface circuit is configured to: receive a signal from a communication apparatus other than the communication apparatus and transmit the signal to the processing circuit, or send a signal from the processing circuit to a communication apparatus other than the communication apparatus; and the processing circuit executes code instructions, to implement the method according to any one of claims 1 to 14.

52. A communication apparatus, comprising a processing circuit and an interface circuit, wherein the interface circuit is configured to: receive a signal from a communication apparatus other than the communication apparatus and transmit the signal to the processing circuit, or send a signal from the processing circuit to a communication apparatus other than the communication apparatus; and the processing circuit executes code instructions, to implement the method according to any one of claims 29 to 39.

53. A computer-readable storage medium, wherein the storage medium stores a program or instructions; and when the program runs or the instructions are run, the method according to any one of claims 1 to 14 is implemented.

54. A computer-readable storage medium, wherein the storage medium stores a program or instructions; and when the program runs or the instructions are run, the method according to any one of claims 29 to 39 is implemented.

55. A computer program, wherein the computer program comprises instructions used to perform the method according to any one of claims 1 to 14.

56. A computer program, wherein the computer program comprises instructions used to perform the method according to any one of claims 29 to 39.