units, TUs), and 1 TU = 1024 μs. Generally, the AP MLD broadcasts a value of a time synchronization function (time synchronization function, TSF) timer (timer) in a beacon frame. After receiving the value of the TSF timer, a non-AP MLD may update a locally maintained system time to the value of the TSF timer, to achieve an objective that times of all non-AP MLDs are the same as that of the AP MLD in a BSS (namely, time synchronization).

[00139] For example, the value carried in the mapping switch time field may be set to an 11^{th} bit to a 26^{th} bit, that is, TSF[10:25] (bits 10 to 25 of the TSF) of the TSF timer corresponding to a case in which a new mapping relationship becomes effective. The TSF timer may be understood as a time value with a length of 64 bits and in units of microseconds (μs). For example, TSF timers corresponding to all non-AP MLDs on one link may be the same, and TSF timers corresponding to non-AP MLDs on different links may be different.

[00140] For example, the expected duration field may indicate an expected end time of a TID-to-link mapping relationship, or indicate an expected end time of TID-to-link mapping. For example, the expected duration field indicates effective duration (when the TID-to-link mapping element carries the mapping switch time field) or a remaining time (when the TID-to-link mapping element does not carry the mapping switch time field) of the TID-to-link mapping. The expected duration field is present when the TID-to-link mapping element is carried in the beacon frame or the probe response frame.

[00141] For example, the link mapping of TID 0 field may indicate a link to which a TID 0 is mapped. For example, the field may carry one bitmap, and each bit in the bitmap may correspond to one link. If a value of a bit is 1, it indicates that the TID 0 is mapped to a link corresponding to the bit. For another example, if a value of a bit is 0, it indicates that the TID 0 is not mapped to a link corresponding to the bit. For example, a length of the bitmap may be equal to a maximum quantity of links that can be associated between multi-link devices; or a length of the bitmap may be a fixed value, for example, 16 bits; or a length of the bitmap may be equal to a quantity of established associated links between multi-link devices, or the like. A manner of setting the length of the bitmap is not limited in embodiments of this application. For descriptions of a link mapping of another TID field, refer to the link mapping of TID 0 field. Details are not described herein again. The TID 0 to a TID 7 in embodiments of this application are merely examples. With evolution of standards, there may be more traffic types subsequently, for example, the TID 0 to a TID 15. Therefore, a quantity of link mapping of TID fields in the TID-to-link mapping element is not limited in embodiments of this application. For example, a quantity of link mapping of TID fields in the TID-to-link mapping element may be the same as a quantity of types of TIDs. For example, when the TID is extended from the TID 0 to the TID 7 to the TID 0 to the TID 15, the quantity of link mapping of TID fields may be equal to 16.

all the second times corresponding to all the first links established between the first non-AP MLD and the AP MLD is t1 (because t1 < t3).

[00203] Scenario II: When the second time is after the first time (that is, the second time is greater than the first time) and is the TU boundary closest to the first time of the first link,

a manner II.1 of setting the values of Ta and Tb is as follows: Ta is determined based on the first time, and Tb is determined based on a largest time in all second times corresponding to all first links established between the first non-AP MLD and the AP MLD. For example, Ta is the first time (that is, Ta = the first time), and Tb is the largest time in all the second times corresponding to all the first links established between the first non-AP MLD and the AP MLD (that is, Tb = a largest value in all the second times corresponding to all the first links established between the first non-AP MLD and the AP MLD).

[00204] It may be understood that, in the scenario II of the case 2, an implementation (for example, any one of the foregoing implementations 1 to 3) in which the non-AP MLD selects the target effective start time of the TID-to-link mapping may not be limited, that is, which effective start time is specifically selected by the non-AP MLD from the at least one effective start time as the target effective start time is not limited. For example, the target effective start time may be any effective start time in the at least one effective start time, or the target effective start time may be a largest effective start time in the at least one effective start time, or the target effective start time may be a smallest effective start time in the at least one effective start time, or the like. This is not limited herein.

[00205] For example, FIG. 9b is a diagram of still another scenario for Ta and Tb according to an embodiment of this application. As shown in FIG. 9b, it is assumed that the effective start time of the TID-to-link mapping is a TBTT corresponding to a DTIM beacon frame of a link 2, that is, a time point t0 is used as a reference, that is, the first time is t0. All first links established between the first non-AP MLD and the AP MLD are a link 1-1 and a link 1-2 shown in FIG. 9b. In case of Scenario II, for a first frame sent on the link 1-1, an effective start time, indicated by the first frame, of the TID-to-link mapping is a time point t2, and for a first frame sent on the link 1-2, an effective start time, indicated by the first frame, of the TID-to-link mapping is a time point t4. In other words, the first time is t0, and the second time includes t2 and t4. Which one of the at least one effective start time indicated by the received first frame is the target effective time determined by the non-AP MLD is not limited. If Ta = the first time, and Tb = the largest value in all the second times corresponding to all the first links established between the first non-AP MLD and the AP MLD, locations of Ta and Tb are locations of Ta and Tb shown in FIG. 9b, where the largest value in all the second times corresponding to all the first links established between the first non-AP MLD and the AP MLD is t4 (because t2 < t4).

CLAIMS

1. A communication method, comprising:

generating, by an access point multi-link device (AP MLD), a first frame that indicates an effective start time of a traffic identifier-to-link mapping (TID-to-link mapping), wherein the effective start time is a target beacon transmission time (TBTT) corresponding to a delivery traffic indication map (DTIM) beacon frame of a third link;

sending, by the AP MLD, the first frame on at least one first link; and

disabling or enabling, by the AP MLD, a second link according to the TID-to-link mapping, wherein:

when the TID-to-link mapping indicates the second link to be disabled, the AP MLD disables the second link not earlier than the TBTT; and

when the TID-to-link mapping indicates the second link to be enabled, the AP MLD enables the second link not later than a time point, the time point is one time unit (TU) length earlier than the TBTT.

2. The method according to claim 1, wherein the first link is the same as the third link; or

the first link is different from the third link.

3. The method according to claim 1, wherein

when the TID-to-link mapping indicates the second link to be disabled, the AP MLD does not initiate transmission to a first non-access point multi-link device (non-AP MLD) on the second link later than the time point; or

when the TID-to-link mapping indicates the second link to be enabled, the AP MLD does not initiate transmission to the first non-AP MLD on the second link earlier than the TBTT.

4. The method according to claim 1, wherein

when the TID-to-link mapping indicates the second link to be disabled, the AP MLD ends transmission with a first non-access point multi-link device (non-AP MLD) on the second link before the time point; or

when the TID-to-link mapping indicates the second link to be enabled, the AP MLD initiates transmission to the first non-AP MLD on the second link only after the TBTT.

5. The method according to claim 4, wherein the first non-AP MLD is all non-AP MLDs that establish multi-link communication with the AP MLD; or

the first non-AP MLD is any one of the non-AP MLDs that establish multi-link communication with the AP MLD.

6. The method according to claim 1, wherein

the AP MLD does not initiate transmission to a first non-access point multi-link device (non-

AP MLD) on the second link later than the time point and earlier than the TBTT.

7. The method according to claim 1, wherein a TU boundary of the first link is a TU boundary closest to the TBTT of the first link.

8. The method according to claim 1, wherein the first frame is a beacon frame or a probe response frame.

9. The method according to claim 1, wherein the effective start time of the TID-to-link mapping is indicated by a mapping switch time field in the first frame.

10. A communication apparatus, comprising at least one processor, the at least one processor configured to perform operations:

generating, a first frame that indicates an effective start time of a traffic identifier-to-link mapping (TID-to-link mapping), wherein the effective start time is a target beacon transmission time (TBTT) corresponding to a delivery traffic indication map (DTIM) beacon frame of a third link;

sending the first frame on at least one first link; and

disabling or enabling, a second link according to the TID-to-link mapping, wherein

when the TID-to-link mapping indicates the second link to be disabled, the AP MLD disables the second link not earlier than a time point the TBTT; and

when the TID-to-link mapping indicates a second link to be enabled, the AP MLD enables the second link not later than a time point, the time point is one time unit (TU) length earlier than the TBTT.

11. The communication apparatus according to claim 10, wherein

the first link is the same as the third link; or

the first link is different from the third link.

12. The communication apparatus according to claim 10, wherein

when the TID-to-link mapping indicates the second link to be disabled, the communication apparatus does not initiate transmission to a first non-access point multi-link device (non-AP MLD) on the second link later than the time point; or

when the TID-to-link mapping indicates the second link to be enabled, the communication apparatus does not initiate transmission to a first non-access point multi-link device (non-AP MLD) on the second link earlier than the TBTT.

13. The communication apparatus according to claim 10, wherein

when the TID-to-link mapping indicates the second link to be disabled, the communication apparatus ends transmission with a first non-access point multi-link device (non-AP MLD) on the second link before the time point; or

when the TID-to-link mapping indicates the second link to be enabled, the communication

apparatus initiates transmission to the first non-AP MLD on the second link only after the TBTT.

14. The communication apparatus according to claim 13, wherein the first non-AP MLD is all non-AP MLDs that establish multi-link communication with the AP MLD; or

the first non-AP MLD is any one of the non-AP MLDs that establish multi-link communication with the communication apparatus.

15. The communication apparatus according to claim 10, wherein the communication apparatus does not initiate transmission to a first non-access point multi-link device (non-AP MLD) on the second link later than the time point and earlier than the TBTT.

16. The communication apparatus according to claim 10, wherein the effective start time of the TID-to-link mapping is indicated by a mapping switch time field in the first frame.

17. A computer-readable storage medium, wherein the non-transitory storage medium stores a computer program or instructions that, when executed, cause a processor to perform operations:

generating, a first frame that indicates an effective start time of a traffic identifier-to-link mapping (TID-to-link mapping), wherein the effective start time is a target beacon transmission time (TBTT) corresponding to a delivery traffic indication map (DTIM) beacon frame of a third link;

sending the first frame on at least one first link; and

disabling or enabling, a second link according to the TID-to-link mapping, wherein

when the TID-to-link mapping indicates the second link to be disabled, the computer program or the instructions cause the processor to disable the second link not earlier than the TBTT; and

when the TID-to-link mapping indicates the second link to be enabled the computer program or the instructions cause the processor to enable the second link not later than a time point, the time point is one time unit (TU) length earlier than the TBTT.

18. The computer-readable storage medium according to claim 17, wherein

the first link is the same as the third link; or

the first link is different from the third link.

19. The computer-readable storage medium according to claim 17, wherein

when the TID-to-link mapping indicates the second link to be disabled, the computer program or the instructions cause the processor to not initiate transmission to a first non-access point multi-link device (non-AP MLD) on the second link later than the time point; or

when the TID-to-link mapping indicates the second link to be enabled, the computer program or the instructions cause the processor to not initiate transmission to the first non-AP MLD on the second link earlier than the TBTT.

20. The computer-readable storage medium according to claim 17, wherein

when the TID-to-link mapping indicates the second link to be disabled, the computer-readable

storage medium ends transmission with a first non-access point multi-link device (non-AP MLD) on the second link before the time point; or

when the TID-to-link mapping indicates the second link to be enabled, the computer program or the instructions cause the processor to initiate transmission to the first non-AP MLD on the second link only after the TBTT;

wherein the first non-AP MLD is all non-AP MLDs that establish multi-link communication with the AP MLD; or

the first non-AP MLD is any one of the non-AP MLDs that establish multi-link communication with the communication apparatus.