CLAIMS

What is claimed is:

1. A multi-link group addressed traffic transmission method, wherein the method comprises:

generating, by a first access point (AP) of an access point multi-link device (AP MLD), group addressed traffic indication information, wherein the group addressed traffic indication information indicates whether one or more APs of the AP MLD have a group addressed traffic; and

sending, by the first AP, the group addressed traffic indication information.

2. The method according to claim 1, wherein

the group addressed traffic indication information indicates whether each AP of the AP MLD has a group addressed traffic.

3. The method according to claim 1 or 2, wherein

a value of the bit of the group addressed traffic indication information indicates whether the AP corresponding to the bit has a group addressed traffic.

4. The method according to any one of claims 1 to 3, wherein

the group addressed traffic indication information comprises a part of bits in a partial virtual bitmap field in a traffic indication map (TIM) element, wherein the part of bits in the partial virtual bitmap field in the TIM element indicate whether each AP of the AP MLD other than the first AP has a group addressed traffic.

5. The method according to claim 4, wherein

the part of bits in the partial virtual bitmap field in the traffic indication map (TIM) element are consecutive bits.

6. The method according to any one of claims 1 to 5, wherein

an association identifier (AID) corresponding to each bit of the group addressed traffic indication information is different from an AID of a station managed by each AP of the AP MLD; or

an AID corresponding to each bit of the group addressed traffic indication information is different from an AID of a station multilink device (STA MLD) associated with the AP MLD, and multiple stations (STAs) of the STA MLD share one AID.

7. The method according to any one of claims 1 to 3, wherein the group addressed traffic

~~indication information comprises bit 0 of a bitmap control field in a TIM element, and the bit 0 is used to indicate whether the first AP has a group-addressed traffic.~~

~~8. The method according to claim 1 or 2, wherein in the group-addressed traffic indication information, a quantity of bits corresponding to the AP MLD is a fixed quantity of bits.~~

~~9. The method according to claim 4, wherein for the part of bits in the partial virtual bitmap field, one or more bits corresponding to the AP MLD, other than the bits corresponding to the AP of the AP MLD, are set to zero by default; and; the bits corresponding to the AP of the AP MLD do not include the bit corresponding to the first AP.~~

~~10. The method according to claim 4, wherein in the partial virtual bitmap fields, one or more bits corresponding to each AP except the first AP in the AP MLD, in ascending order according to the link identifiers of the APs.~~

~~11. The method according to claim 4 or 5, wherein in the group-addressed traffic indication information, in the partial virtual bitmap field in the TIM element, AIDs corresponding to bits corresponding to the AP MLD, are successively allocated in ascending order or descending order of link identifiers of all APs except the first AP of the AP MLD.~~

~~12. The method according to claim 1, wherein the group-addressed traffic indication information is carried in a transmit service indication bitmap (DTIM) beacon frame.~~

~~13. A multi-link group addressed traffic transmission method, wherein the method comprises:~~

~~receiving, by a first station (STA) of a station multi-link device (STA MLD), group addressed traffic indication information from an AP MLD, wherein the group-addressed traffic indication information indicates whether one or more APs of the AP MLD have a group-addressed traffic;~~

~~determining, by the first STA, based on the group-addressed traffic indication information, whether the one or more APs have a group addressed traffic14. The method according to claim 13, wherein~~

~~the receiving, by a first STA of a STA MLD, group addressed traffic indication information from an AP MLD comprises:~~

~~listening to, by the first STA of the STA MLD, group addressed traffic indication information from one AP of the AP MLD.~~

~~15. The method according to claim 13 or 14, wherein the group-addressed traffic indication information is carried in a delivery traffic indication map (DTIM) beacon frame.~~

16. The method according to claim 15, wherein the method further comprises:

receiving, by the first STA, a group addressed traffic after the DTIM beacon frame.

17. The method according to any one of claims 13 to 15, wherein

the group addressed traffic indication information comprises a part of bits in a partial virtual bitmap field in a traffic indication map (TIM) element, wherein the part of bits in the partial virtual bitmap field in the TIM element indicate whether each AP of the AP MLD other than the first AP has a group addressed traffic.

18. The method according to claim 17, wherein

the part of bits in the partial virtual bitmap field in the traffic indication map (TIM) element are consecutive bits.

19. The method according to any one of claims 13 to 15, wherein the group addressed traffic indication information comprises bit 0 of a bitmap control field in a TIM element, and the bit 0 is used to indicate whether the first AP has a group addressed traffic.

20. The method according to claim 13 or 14, wherein for the part of bits in the partial virtual bitmap field in the group addressed traffic indication information, a quantity of bits corresponding tothe AP MLD is a fixed quantity of bits.

21. The method according to claim 17, wherein for the part of bits in the partial virtual bitmap field, one or more bits corresponding to the AP MLD, other than the bits corresponding to the AP of the AP MLD, are set to zero by default; and; the bits corresponding to the AP of the AP MLD do not include the bit corresponding to the first AP.

22. The method according to claim 17, wherein in the partial virtual bitmap fields, one or more bits corresponding to each AP except the first AP in the AP MLD, in ascending order according to the link identifiers of the APs.

23. The method according to claim 17 or 18, wherein in the group addressed traffic indication information, in the partial virtual bitmap field in the TIM element, AIDs corresponding to bits corresponding to the AP MLD, are successively allocated in ascending order or descending order of link identifiers of all APs except the first AP of the AP MLD.

24. An access point in an access point multilink device, comprising at least one processor and an interface, wherein the processor and the interface are configured to implement the group addressed service transmission method applicable to multiple links according to any one of claims

~~1 to 12.~~

~~25. A station in a station multilink device, comprising at least one processor and an interface, wherein the processor and the interface are configured to implement the group addressed service transmission method applicable to multiple links according to any one of claims 13 to 23.~~

~~26. A chip system, comprising at least one processor and an interface, wherein the processor and the interface are configured to support any access point in an access point multilink device in implementing the group addressed traffic transmission method applicable to multiple links according to any one of claims 1 to 12; or~~

~~the processor and the interface are configured to support any station in a station multilink device in implementing the group addressed traffic transmission method applicable to multiple links according to any one of claims 13 to 23.~~

~~27. A computer-readable storage medium, configured to store a computer program, wherein when the computer program runs on a computer, the computer is enabled to perform the method according to any one of claims 1 to 12, or perform the method according to any one of claims 13 to 23.~~

~~28. An access point multi-link device, wherein the access point multilink device comprises multiple access points, and at least one access point is a first access point (AP) according to claim 24.~~

~~29. A station multi-link device, wherein the station multilink device comprises multiple stations, and at least one station is a station according to claim 25.~~

~~30. A system, comprising at least one access point in an access point multilink device and at least one station in a station multilink device, wherein the access point is configured to implement the group addressed traffic transmission method applicable to multiple links according to any one of claims 1 to 12, and the station is configured to implement the group addressed traffic transmission method applicable to multiple links according to any one of claims 13 to 23.~~

What is claimed is:

1. A multi-link group addressed traffic transmission method, comprising:

generating, by a first access point (AP) of an access point multi-link device (AP MLD), group addressed traffic indication information comprising a set of bits in a partial virtual bitmap field in a traffic indication map (TIM) element, wherein the set of bits in the partial virtual bitmap field in the TIM element indicates whether each AP of one or more second APs has a group addressed

traffic, the one or more second APs being one or more other APs of the AP MLD except the first AP; and

sending, by the first AP, the group addressed traffic indication information.

2. The method according to claim 1, wherein

an association identifier (AID) corresponding to each bit of the group addressed traffic indication information is different from an AID of a station managed by each AP of the AP MLD; or

an AID corresponding to each bit of the group addressed traffic indication information is different from an AID of a station multilink device (STA MLD) associated with the AP MLD, and multiple stations (STAs) of the STA MLD share one AID.

3. The method according to claim 1, wherein the set of bits in the partial virtual bitmap field comprises a fixed quantity of consecutive bits for the one or more second APs of the AP MLD.

4. The method according to claim 1, wherein in the set of bits in the partial virtual bitmap field, one or more first bits correspond to the one or more second APs of the AP MLD, and one or more second bits for the AP MLD are set to zero.

5. The method according to claim 1, wherein the set of bits in the partial virtual bitmap field comprises a plurality of consecutive bits correspond to the one or more second APs, in ascending order according to link identifiers of the one or more second APs.

6. A first access point (AP) of an access point multi-link device (AP MLD), comprising:

a processor configured to generate group addressed traffic indication information compriseing a set of bits in a partial virtual bitmap field in a traffic indication map (TIM) element, wherein the set of bits in the partial virtual bitmap field in the TIM element indicates whether each AP of one or more second APs has a group addressed traffic, the one or more second APs being one or more other APs of the AP MLD except the first AP; and

a transceiver coupled to the processor and configured to send the group addressed traffic indication information.

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7. The first AP according to claim 6, wherein an association identifier (AID) corresponding to each bit of the group addressed traffic indication information is different from an AID of a station managed by each AP of the AP MLD; or

an AID corresponding to each bit of the group addressed traffic indication information is different from an AID of a station multilink device (STA MLD) associated with the AP MLD, and multiple stations (STAs) of the STA MLD share one AID.

8. The first AP according to claim 6, wherein the set of bits in the partial virtual bitmap field comprises a fixed quantity of consecutive bits for the one or more second APs of the AP MLD.

9. The first AP according to claim 6, wherein in the set of bits in the partial virtual bitmap field, one or more first bits correspond to the one or more second APs of the AP MLD, and one or more second bits for the AP MLD are set to zero.

10. The first AP according to claim 6, wherein the set of bits in the partial virtual bitmap field comprises a plurality of consecutive bits correspond to the one or more second APs, in ascending order according to link identifiers of the one or more second APs.

11. The first AP according to claim 6, wherein the group addressed traffic indication information is carried in a delivery traffic indication map (DTIM) beacon frame.

12. A chip applied for a first access point (AP) of an access point multi-link device (AP MLD), comprising:

a processor configured to generate group addressed traffic indication information comprising a set of bits in a partial virtual bitmap field in a traffic indication map (TIM) element, wherein the set of bits in the partial virtual bitmap field in the TIM element indicates whether each access point (AP) of one or more second APs has a group addressed traffic, the one or more second APs being one or more other APs of the AP MLD except the first AP; and

an interface coupled to the processor and configured to output the group addressed traffic indication information.

13. The chip according to claim 12, wherein an association identifier (AID) corresponding to each bit of the group addressed traffic indication information is different from an AID of a station managed by each AP of the AP MLD; or

an AID corresponding to each bit of the group addressed traffic indication information is different from an AID of a station multilink device (STA MLD) associated with the AP MLD, and multiple stations (STAs) of the STA MLD share one AID.

14. The chip according to claim 12, wherein the set of bits in the partial virtual bitmap field comprises a fixed quantity of consecutive bits for the one or more second APs of the AP MLD.

15. The chip according to claim 12, wherein in the set of bits in the partial virtual bitmap field, one or more first bits correspond to the one or more second APs of the AP MLD, and one or more second bits for the AP MLD are set to zero.

16. The chip according to claim 12, wherein the set of bits in the partial virtual bitmap field comprises a plurality of consecutive bits correspond to the one or more second APs, in ascending order according to link identifiers of the one or more second APs.

17. An access point multilink device (AP MLD), comprising a first access point (AP) and one or more second APs, wherein the first AP is configured to:

generate group addressed traffic indication information comprising a set of bits in a partial virtual bitmap field in a traffic indication map (TIM) element, wherein the set of bits in the partial virtual bitmap field in the TIM element indicates whether each AP of the one or more second APs has a group addressed traffic, the one or more second APs being one or more other APs of the AP MLD except the first AP; and

send the group addressed traffic indication information.

18. The AP MLD according to claim 17, wherein an association identifier (AID) corresponding to each bit of the group addressed traffic indication information is different from an AID of a station managed by each AP of the AP MLD; or

an AID corresponding to each bit of the group addressed traffic indication information is different from an AID of a station multilink device (STA MLD) associated with the AP MLD, and multiple stations (STAs) of the STA MLD share one AID.

19. The AP MLD according to claim 17, wherein the set of bits in the partial virtual bitmap field comprises a fixed quantity of consecutive bits for the one or more second APs of the AP MLD.

20. The AP MLD according to claim 17, wherein in the set of bits in the partial virtual bitmap field, one or more first bits correspond to the one or more second APs of the AP MLD, and one or more second bits for the AP MLD are set to zero.

21. The AP MLD according to claim 17, wherein the set of bits in the partial virtual bitmap field comprises a plurality of consecutive bits correspond to the one or more second APs, in ascending order according to link identifiers of the one or more second APs.

22. The AP MLD according to claim 17, wherein the group addressed traffic indication information is carried in a diliverytraffic indication map (DTIM) beacon frame.