CLAIMS

What is claimed is:

~~1. An AP multi-link device discovery method, comprising:~~

~~sending, by a reporting AP, a first management frame to a station, wherein the first management frame carries information about a neighbor AP, and the reporting AP is affiliated to an AP multi-link device; and~~

~~the information about the neighbor AP comprises one or more of first information, second information, or third information, wherein~~

~~the first information indicates whether a reported AP is affiliated to the same MLD as the reporting AP or whether the reported AP belongs to a same multiple BSSID set as a member of the MLD to which the reporting AP is affiliated;~~

~~the second information indicates whether the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated; and~~

~~the third information indicates whether the reported AP is affiliated to the same MLD as the reporting AP.~~

~~2. An AP multi-link device discovery method, comprising:~~

~~receiving, by a station, a first management frame sent by a reporting AP, wherein the first management frame carries information about a neighbor AP, and the reporting AP is affiliated to an AP multi-link device; and~~

~~the information about the neighbor AP comprises one or more of first information, second information, or third information, wherein~~

~~the first information indicates whether a reported AP is affiliated to the same MLD as the reporting AP or whether the reported AP belongs to a same multiple BSSID set as a member of the MLD to which the reporting AP is affiliated;~~

~~the second information indicates whether the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated; and~~

~~the third information indicates whether the reported AP is affiliated to the same MLD as the reporting AP.~~

~~3. The method according to claim 1 or 2, wherein the information about the neighbor AP further comprises fourth information, wherein the fourth information indicates whether the~~

reported AP belongs to a multiple BSSID set.

4. The method according to any one of claims 1 to 3, wherein the information about the neighbor AP further comprises eighth information, wherein the eighth information comprises an MLD index of the MLD to which the reported AP is affiliated.

5. The method according to claim 4, wherein

the reported AP is affiliated to the same MLD as the reporting AP or belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated, the information about the neighbor AP comprises the eighth information.

6. The method according to claim 4, wherein

the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated, the information about the neighbor AP comprises the eighth information.

7. The method according to any one of claims 1 to 6, wherein the information about the neighbor AP further comprises ninth information, wherein the ninth information comprises a multiple BSSID set index of the multiple BSSID set to which the reported AP belongs.

8. The method according to claim 7, wherein

the reported AP belongs to the multiple BSSID set, and

the reported AP is affiliated to the same MLD as the reporting AP,

the information about the neighbor AP comprises the ninth information.

9. The method according to claim 7, wherein

the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated,

the information about the neighbor AP comprises the ninth information.

10. The method according to any one of claims 1 to 9, wherein the information about the neighbor AP further comprises fifth information, wherein the fifth information indicates a link identifier of the reported AP.

11. The method according to any one of claims 1 to 10, wherein the information about the neighbor AP further comprises one or more of sixth information or seventh information, wherein

the sixth information indicates a link identifier of the reporting AP and/or a MAC address of the MLD to which the reporting AP is affiliated; and

the seventh information indicates whether the first management frame carries information

~~about all first reported APs, or indicates whether the management frame carries the information about all the first reported APs and information about members of a multiple BSSID set to which all the first reported APs belong, wherein the first reported AP is an AP member other than the reporting AP in the MLD to which the reporting AP is affiliated.~~

~~12. The method according to any one of claims 1 to 11, wherein the information about the neighbor AP is carried in a reduced neighbor report element or a neighbor report element.~~

~~13. The method according to any one of claims 1 to 12, wherein~~

~~the first management frame is a beacon frame or a probe response frame.~~

~~14. An AP multi-link device discovery apparatus, comprising:~~

~~a sending unit, configured to send a first management frame to a station, wherein the first management frame carries information about a neighbor AP, and the reporting AP is affiliated to an AP multi-link device; and~~

~~the information about the neighbor AP comprises one or more of information A, information B, or information C, wherein~~

~~the information A indicates whether a reported AP is affiliated to the same MLD as the reporting AP or whether the reported AP belongs to a same multiple BSSID set as a member of the MLD to which the reporting AP is affiliated;~~

~~the information B indicates whether the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated; and~~

~~the information C indicates whether the reported AP is affiliated to the same MLD as the reporting AP.~~

~~15. An AP multi-link device discovery apparatus, comprising:~~

~~a receiving unit, configured to receive a first management frame sent by a reporting AP, wherein the first management frame carries information about a neighbor AP, and the reporting AP is affiliated to an AP multi-link device; and~~

~~the information about the neighbor AP comprises one or more of information A, information B, or information C, wherein~~

~~the information A indicates whether a reported AP is affiliated to the same MLD as the reporting AP or whether the reported AP belongs to a same multiple BSSID set as a member of the MLD to which the reporting AP is affiliated;~~

the information B indicates whether the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated; and

the information C indicates whether the reported AP is affiliated to the same MLD as the reporting AP.

16. The apparatus according to claim 14 or 15, wherein the information about the neighbor AP further comprises information D, wherein the information D indicates whether the reported AP belongs to a multiple BSSID set.

17. The apparatus according to any one of claims 14 to 16, wherein the information about the neighbor AP further comprises information H, wherein the information H comprises an MLD index of the MLD to which the reported AP is affiliated.

18. The apparatus according to claim 17, wherein

the reported AP is affiliated to the same MLD as the reporting AP or belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated, the information about the neighbor AP comprises the information H.

19. The apparatus according to claim 17, wherein

the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated, the information about the neighbor AP comprises the information H.

20. The apparatus according to any one of claims 1 to 19, wherein the information about the neighbor AP further comprises information I, wherein the information I comprises a multiple BSSID set index of the multiple BSSID set to which the reported AP belongs.

21. The apparatus according to claim 20, wherein

the reported AP belongs to the multiple BSSID set, and

the reported AP is affiliated to the same MLD as the reporting AP,

the information about the neighbor AP comprises the information I.

22. The apparatus according to claim 20, wherein

the reported AP belongs to the same multiple BSSID set as the member of the MLD to which the reporting AP is affiliated,

the information about the neighbor AP comprises the information I.

23. The apparatus according to any one of claims 14 to 22, wherein the information about the neighbor AP further comprises information E, wherein the information E indicates a link identifier of the reported AP.

~~24. The apparatus according to any one of claims 14 to 23, wherein the information about the neighbor AP further comprises one or more of information F or information G, wherein~~

~~the information F indicates a link identifier of the reporting AP and/or a MAC address of the MLD to which the reporting AP is affiliated; and~~

~~the information G indicates whether the first management frame carries information about all first reported APs, or indicates whether the management frame carries the information about all the first reported APs and information about members of a multiple BSSID set to which all the first reported APs belong, wherein the first reported AP is an AP member other than the reporting AP in the MLD to which the reporting AP is affiliated.~~

~~25. The apparatus according to any one of claims 14 to 24, wherein the information about the neighbor AP is carried in a reduced neighbor report element or a neighbor report element.~~

~~26. The apparatus according to any one of claims 14 to 25, wherein~~

~~the first management frame is a beacon frame or a probe response frame.~~

~~27. A communication apparatus, comprising a processor, wherein the processor is configured to execute a computer program, to perform the method according to any one of claims 1 and 3 to 13, or the method according to any one of claims 2 to 13.~~

~~28. A communication apparatus, comprising a processor and a memory, wherein the memory is coupled to the processor; the memory stores a computer program; and the processor is configured to execute the computer program stored in the memory, to perform the method according to any one of claims 1 and 3 to 13, or the method according to any one of claims 2 to 13.~~

~~29. A communication apparatus, comprising a processor and a transceiver, wherein the transceiver is configured to send and receive information, or communicate with another network element; and the processor performs the method according to any one of claims 1 and 3 to 13, or the method according to any one of claims 2 to 13 by controlling the transceiver to send and receive the information or communicate with the another network element.~~

~~30. A communication apparatus, comprising a processor and an interface circuit, wherein the processor is configured to communicate with another apparatus by using an interface circuit, so that the apparatus performs the method according to any one of claims 1 and 3 to 13, or the method according to any one of claims 2 to 13.~~

~~31. A computer-readable storage medium, wherein the computer-readable storage medium~~

~~stores a computer program; and when the computer program is run on a processor, the method according to any one of claims 1 to 13 is implemented.~~

~~32. A computer program product, wherein when the computer program product runs on a computer, the computer is enabled to perform the method according to any one of claims 1 to 13.~~

~~33. A communication system, comprising the apparatus according to any one of claims 14 and 16 to 26, and the apparatus according to any one of claims 15 to 26.~~

1. An access point multi-link device (AP MLD), discovery method, comprising:

generating, by a reporting AP, a management frame, wherein the management frame comprises a first information field, wherein the first information field indicating whether a reported AP is affiliated to a same AP MLD as the reporting AP; and

sending, by the reporting AP, the management frame to a station.

2. An AP MLD discovery method, comprising:

receiving, by a station, a management frame from a reporting AP, wherein the management frame comprises a first information field, wherein the first information field indicating whether a reported AP is affiliated to a same AP MLD as the reporting AP; and

determing, by the station, whether the reported AP is affiliated to the same AP MLD as the reporting AP according to the first information field.

3. The method according to claim 1 or 2, wherein the reported AP is affiliated to the same AP MLD as the reporting AP, or the reported AP belongs to a same multiple basic service set identifier (BSSID) set as a member of the AP MLD to which the reporting AP is affiliated.

4. The method according to any one of claims 1 to 3, wherein the first information field further indicates an MLD identifier of the AP MLD to which the reported AP is affiliated.

5. The method according to any one of claims 1 to 4, wherein the first information field is set to 0 to indicate the reported AP is affiliated to the same AP MLD as the reporting AP.

6. The method according to any one of claims 1 to 5, wherein the first information field is set to 255 to indicate the reported AP is not affiliated to any AP MLD.

7. The method according to any one of claims 1 to 6, wherein the management frame further comprises a link identifier of the reported AP.

8. The method according to claim 7, wherein the link identifier corresponds to an operating class, a channel number, or a MAC address of the reported AP.

9. The method according to claim 7 or 8, wherein the link identifier of the reported AP is unique in an AP MLD to which the reproted AP is affiliated.

10. The method according to any one of claims 1 to 9, wherein the management frame further comprises a link identifier of the reporting AP.

11. The method according to claim 10, wherein the the link indentifier of the reporting AP is carried in an MLD common information field of an MLD element.

12. The method according to any one of claims 1 to 11, wherein the management frame further comprises an MLD element, wherein the MLD element carries an MLD MAC address present field or a link ID present field.

13. The method according to any one of claims 1 to 12, wherein the first information field is carried in a reduced neighbor report element.

14. The method according to any one of claims 1 to 13, wherein the management frame is a beacon frame or a probe response frame.

15. An access point multi-link device (AP MLD) discovery method, comprising:

sending, by a station, a probe request frame, wherein the probe request frame comprises at least one link idetifiers for requesting information of at least one AP, and the station is affiliated to a station (STA) MLD; and

receiving, by the station from an AP MLD, a probe response frame, wherein the probe response frame carries the information of at least one AP requested by the station.

16. An access point multi-link device (AP MLD) discovery method, comprising:

receiving, by an AP MLD from a STA MLD, a probe request frame, wherein the probe request frame comprises at least one link idetifiers for requesting information of at least one AP; and

sending, by the AP MLD to the STA MLD, a probe response frame, wherein the probe response frame carries the information of at least one AP requested by the STA MLD.

17. The method according to claim 15 or 16, wherein the probe request frame comprises an MLD element, and an MLD common information field of the MLD element comprises an MLD identifier.

18. The method according to any one of claims 15 to 17, wherein the MLD element further comprises at least one link identifier of an AP.

19. The method according to any one of claims 15 to 18, wherein the at least one AP comprises

all APs in an AP MLD to which a reporting AP is affiliated, or all APs in an AP MLD to which a nontransmitted AP in a same multiple BSSID set as the reporting AP is affiliated, or at least one AP in an AP MLD in a same multiple BSSID set as one AP in an AP MLD to which the reporting AP is affiliated.

20. An access point multi-link device (AP MLD) discovery method, comprising:

generating, by a reporting AP, a management frame carrying information of a reported AP, wherein the reported AP is affiliated to an AP MLD, and the information of the reported AP comprises information of the AP MLD; and

sending, by the reporting AP, the management frame.

21. An access point multi-link device (AP MLD) discovery method, comprising:

receiving, by a station from a reporting AP, a management frame carrying information of a reported AP, wherein the reported AP is affiliated to an AP MLD, and the information of the reported AP comprises information of the AP MLD; and

parsing, by the station, the management frame.

22. The method according to claim 20 or 21, wherein the management comprises neighbor report element, and the information of the reported AP is carried in the neighbor report element.

23. The method according to any one of claims 20 to 22, wherein the information of the AP MLD comprises: an MLD MAC Address of the AP MLD, a link identifier of the reported AP, or information of an AP belongs to the AP MLD.

24. An apparatus, comprising a memory storing program instructions, and a processor coupled to the memory, wherein the program instructions, when executed by the processor, enable the apparatus to perform the method according to any one of claims 1 to 23.

25. A computer program product, wherein when the computer program product runs on a computer, the computer is enabled to perform the method according to any one of claims 1 to 23.

26. A communication system, comprising the apparatus according to claim 24.