CLAIMS

What is claimed is:

1. A direct link setup method, applied to a first device, wherein the first device comprises a plurality of stations STAs, the first device is connected to a third device, the third device comprises a plurality of access points APs, a second device is connected to the third device, the second device comprises a plurality of STAs, and the method comprises:

determining at least two tunneled direct-link setup discovery request TDLS discovery request frames, wherein the TDLS discovery request frames comprise an identifier field indicating an AP in the third device, and different TDLS discovery request frames one-to-one correspond to different APs in the third device; and

sending the at least two TDLS discovery request frames wherein each of the TDLS discovery request frames comprises a multi-link element field, the multi-link element field comprises an MLD MAC address field and a transparent/non-transparent transmission bit, the MLD MAC address field indicates a MAC address of the third device, and the transparent/non-transparent transmission bit indicates whether an address mode used by the first device is a transparent mode or a non-transparent mode, wherein when the address mode is the transparent mode, a link address of the first device is the same as a first device address, and when the address mode is the non-transparent mode, different links corresponding to the first device use different link addresses and the first device address is different from the link addresses of the first device.

2. The method according to claim 1, wherein the identifier field is a basic service set identifier BSSID, and the BSSID is carried in a link identifier element field of the TDLS discovery request frames.

3. The method according to claim 1 or 2, wherein the multi-link element field comprises a type subfield, and the type subfield indicates tunneled direct-link setup.

4. The method according to any one of claims 1 to 3, wherein the first device receives a tunneled direct-link setup discovery response TDLS discovery response frame fed back by a STA that is associated with the AP of the third device and that is in the plurality of STAs of the second device.

5. The method according to any one of claims 1 to 4, wherein the method further comprises:

binding the MAC address of the third device to a TDLS peer key TPK.

6. A direct link setup method, applied to a second device, wherein the second device comprises a plurality of stations STAs, the second device is connected to a third device, the third device comprises a plurality of access points APs, a first device is connected to the third device, the first device comprises a plurality of STAs, and the method comprises:

receiving at least two tunneled direct-link setup discovery request TDLS discovery request frames, wherein the TDLS discovery request frames comprise an identifier field indicating an AP in the third device, and different TDLS discovery request frames one-to-one correspond to different APs in the third device; and

sending, by a STA that is associated with the AP of the third device and that is in the plurality of STAs of the second device, a tunneled direct-link setup discovery response TDLS discovery response frame, wherein each of the TDLS discovery request frames comprises a multi-link element field, the multi-link element field comprises an MLD MAC address field and a transparent/non-transparent transmission bit, the MLD MAC address field indicates a MAC address of the third device, and the transparent/non-transparent transmission bit indicates whether an address mode used by the first device is a transparent mode or a non-transparent mode, wherein when the address mode is the transparent mode, a link address of the first device is the same as a first device address, and when the address mode is the non-transparent mode, different links corresponding to the first device use different link addresses and the first device address is different from the link addresses of the first device.

7. The method according to claim 6, wherein the identifier field is a basic service set identifier BSSID, and the BSSID is carried in a link identifier element field of the TDLS discovery request frames.

8. The method according to claim 6 or 7, wherein the multi-link element field comprises a type subfield, and the type subfield indicates tunneled direct-link setup.

9. The method according to any one of claims 6 to 8, wherein the method further comprises:

binding the MAC address of the third device to a TDLS peer key TPK.

10. A first device, wherein the first device comprises a plurality of stations STAs, the first device is connected to a third device, the third device comprises a plurality of access points APs, a second device is connected to the third device, the second device comprises a plurality of STAs, and the first device comprises:

a processing unit, configured to determine at least two tunneled direct-link setup discovery

request TDLS discovery request frames, wherein the TDLS discovery request frames comprise an identifier field indicating an AP in the third device, and different TDLS discovery request frames one-to-one correspond to different APs in the third device; and

a transceiver unit, configured to send the at least two TDLS discovery request frames, wherein each of the TDLS discovery request frames comprises a multi-link element field, the multi-link element field comprises an MLD MAC address field and a transparent/non-transparent transmission bit, the MLD MAC address field indicates a MAC address of the third device, and the transparent/non-transparent transmission bit indicates whether an address mode used by the first device is a transparent mode or a non-transparent mode, wherein when the address mode is the transparent mode, a link address of the first device is the same as a first device address, and when the address mode is the non-transparent mode, different links corresponding to the first device use different link addresses and the first device address is different from the link addresses of the first device.

11. The first device according to claim 10, wherein the identifier field is a basic service set identifier BSSID, and the BSSID is carried in a link identifier element field of the TDLS discovery request frames.

12. The first device according to claim 10 or 11, wherein the multi-link element field comprises a type subfield, and the type subfield indicates tunneled direct-link setup.

13. The first device according to any one of claims 10 to 12, wherein the transceiver unit is further configured to receive a tunneled direct-link setup discovery response TDLS discovery response frame fed back by a STA that is associated with the AP of the third device and that is in the plurality of STAs of the second device.

14. The first device according to any one of claims 10 to 13, wherein the MAC address of the third device is bound to a TDLS peer key TPK.

15. A second device, wherein the second device comprises a plurality of stations STAs, the second device is connected to a third device, the third device comprises a plurality of access points APs, a first device is connected to the third device, the first device comprises a plurality of STAs, and the second device comprises:

a transceiver unit, configured to receive at least two tunneled direct-link setup discovery request TDLS discovery request frames, wherein the TDLS discovery request frames comprise an

identifier field indicating an AP in the third device, and different TDLS discovery request frames one-to-one correspond to different APs in the third device, each of the TDLS discovery request frames comprises a multi-link element field, the multi-link element field comprises an MLD MAC address field and a transparent/non-transparent transmission bit, the MLD MAC address field indicates a MAC address of the third device, and the transparent/non-transparent transmission bit indicates whether an address mode used by the first device is a transparent mode or a non-transparent mode, wherein when the address mode is the transparent mode, a link address of the first device is the same as a first device address, and when the address mode is the non-transparent mode, different links corresponding to the first device use different link addresses and the first device address is different from the link addresses of the first device, wherein

a STA that is associated with the AP of the third device and that is in the plurality of STAs of the second device sends a tunneled direct-link setup discovery response TDLS discovery response frame.

16. The second device according to claim 15, wherein the identifier field is a basic service set identifier BSSID, and the BSSID is carried in a link identifier element field of the TDLS discovery request frames.

17. The second device according to claim 15 or 16, wherein the multi-link element field comprises a type subfield, and the type subfield indicates tunneled direct-link setup.

18. The second device according to any one of claims 15 to 17, wherein the MAC address of the third device is bound to a TDLS peer key TPK.

19. A direct link addressing apparatus, wherein the direct link addressing apparatus comprises units or modules configured to perform the method according to any one of claims 1 to 9.

20. A direct link addressing apparatus, wherein the direct link addressing apparatus comprises a processor, and the processor is coupled to a memory;

the memory is configured to store a computer program; and

the processor is configured to execute the computer program stored in the memory, so that the direct link addressing apparatus performs the method according to any one of claims 1 to 9.

21. A computer-readable storage medium, wherein the computer-readable storage medium comprises computer programs or instructions; and when the computer programs or instructions are run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 9.

22. A computer program product, wherein the computer program product comprises computer programs or instructions; and when the computer programs or instructions are run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 9.

23. A chip, wherein the chip comprises a processor and an input/output port, when computer programs or instructions are run, the chip is enabled to perform the method according to any one of claims 1 to 9.