

CLAIMS

What is claimed is:

1. A link capability indication method, comprising:

5 determining, by a first multi-link device based on whether the first multi-link device supports simultaneous transmit and receive (STR) operation in at least one of directions from a first link to a second link and from the second link to the first link, whether the first multi-link device supports the STR operation on a link pair, wherein the link pair consists of the first link and the second link, wherein when the first multi-link device does not support the STR operation in at least one of directions from the first link to the second link and from the second link to the first link, the first
10 multi-link device determines that the first multi-link device does not support the STR operation on the link pair;

sending, by the first multi-link device, indication information to a second device, wherein the indication information indicates whether the first multi-link device supports the STR operation on the link pair.

15 2. The method according to claim 1, wherein the first multi-link device does not support the STR operation in at least one of directions from the first link to the second link and from the second link to the first link, comprises:

the first multi-link device does not support transmission on the first link concurrent with reception on the second link; or

20 the first multi-link device does not support transmission on the second link concurrent with reception on the first link; or

the first multi-link device neither supports transmission on the first link concurrent with reception on the second link, nor supports transmission on the second link concurrent with reception on the first link.

25 3. The method according to claim 1, wherein the determining, by the first multi-link device, whether the first multi-link device supports the STR operation on the link pair, comprises:

when the first multi-link device supports the STR operation in both directions from the first link to the second link and from the second link to the first link, the first multi-link device determines that the first multi-link device supports the STR operation on the link pair.

30 4. The method according to any one of claims 1 to 3, wherein the sending the indication

information to the second device, comprises:

sending, by the first multi-link device, an association request frame to the second device, wherein the association request frame comprises the indication information.

5 5. The method according to any one of claims 1 to 4, wherein the indication information is 1-bit information.

6. The method according to claim 5, wherein when the 1-bit information is set to 1, the indication information indicates that the first multi-link device supports the STR operation on the link pair; when the 1-bit information is set to 0, the indication information indicates that the first multi-link device does not support the STR operation on the link pair.

10 7. The method according to any one of claims 1 to 6, wherein
the first multi-link device is a non-access point multi-link device (non-AP MLD), and the second device is a single-link device AP or an AP MLD; or

the first multi-link device is an AP MLD, and the second device is a single-link device station or a non-AP MLD.

15 8. The method according to any one of claims 1 to 7, wherein the first multi-link device comprises a plurality of affiliated stations, wherein each affiliated station works on one link.

9. The method according to claim 8, wherein the plurality of affiliated stations are independent of each other at a low media access control (MAC) layer and a physical layer, and the plurality of affiliated stations share a high MAC layer.

20 10. The method according to any one of claims 1 to 9, wherein the working frequency bands of the first multi-link device comprise two or more of frequency bands of sub 1 GHz, 2.4 GHz, 5 GHz, 6 GHz, and 60 GHz, wherein each working frequency band corresponds to one link.

11. A link capability indication method, comprising:

25 determining, by a first multi-link device, indication information based on whether the first multi-link device supports transmission on a first link concurrent with reception on a second link, and whether the first multi-link device supports transmission on the second link concurrent with reception on the first link, wherein when the first multi-link device does not support the simultaneous transmit and receive (STR) operation in at least one of directions from the first link to the second link and from the second link to the first link, the first multi-link device determines
30 that the first multi-link device does not support the STR operation on the link pair; and

sending, by the first multi-link device, a management frame, wherein the management frame

comprises the indication information.

12. A link capability indication method, comprising:

receiving, by a second device, a management frame from a first multi-link device, wherein the management frame comprises indication information, and the indication information is determined based on whether the first multi-link device supports transmission on a first link concurrent with reception on a second link, and whether the first multi-link device supports transmission on the second link concurrent with reception on the first link, wherein when the first multi-link device does not support the simultaneous transmit and receive (STR) operation in at least one of directions from the first link to the second link and from the second link to the first link, the first multi-link device determines that the first multi-link device does not support the STR operation on the link pair; and

parsing, by the second device, the management frame.

13. A communication apparatus, applied to a first multi-link device and comprising:

a processing unit, configured to determine indication information based on whether the first multi-link device supports transmission on a first link concurrent with reception on a second link, and whether the first multi-link device supports transmission on the second link concurrent with reception on the first link, wherein when the first multi-link device does not support the simultaneous transmit and receive (STR) operation in at least one of directions from the first link to the second link and from the second link to the first link, the first multi-link device determines that the first multi-link device does not support the STR operation on the link pair; and

a transceiver unit, configured to send a management frame, wherein the management frame comprises the indication information.

14. A communication apparatus, applied to a second device and comprising:

a transceiver unit, configured to receive a management frame from a first multi-link device, wherein the management frame comprises indication information, and the indication information is determined based on whether the first multi-link device supports transmission on a first link concurrent with reception on a second link, and whether the first multi-link device supports transmission on the second link concurrent with reception on the first link, wherein when the first multi-link device does not support the simultaneous transmit and receive (STR) operation in at least one of directions from the first link to the second link and from the second link to the first link, the first multi-link device determines that the first multi-link device does not support the STR

operation on the link pair; and

a processing unit, configured to parse the management frame.

15. A communication apparatus, comprising a processor and a transceiver, wherein the transceiver is configured to send or receive signaling or a frame, and the processor is configured
5 to run instructions, to enable the communication apparatus to perform the method according to any one of claims 1 to 10.

16. A chip or a chip system, comprising an input/output interface and a processing circuit, wherein the input/output interface is configured to exchange information or data, and the processing circuit is configured to run instructions, to enable an apparatus installed with the chip
10 or the chip system to perform the method according to any one of claims 1 to 10.

17. A readable storage medium, wherein the readable storage medium stores program instructions; and when the program instructions are run, the method according to any one of claims 1 to 10.

18. A computer program product comprising instructions, wherein when the instructions are
15 run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 11.

19. A wireless communication system, comprising a first multi-link device and a second device, wherein

the first multi-link device is the communication apparatus according to claim 13; and
20 the second device is the communication apparatus according to claim 14.