CLAIMS

What is claimed is:

1. A communication mode switching method, comprising:

receiving, by a non-access point multi-link device (non-AP MLD), a radio frame from an access point multi-link device (AP MLD), wherein the radio frame indicates the non-AP MLD to perform link configuration switching; and

switching, by the non-AP MLD from performing communication by using a second configuration to performing communication by using a first configuration, wherein the non-AP MLD communicates with the AP MLD on one or more links and the non-AP MLD includes multiple affiliated stations, STAs, wherein one affiliated STA work on one link,

under the first configuration, the non-AP MLD can perform communication on N links, under the second configuration, the non-AP MLD can perform communication on M links, M is an integer greater than 1 or equal to 1, N is an integer greater than 2 or equal to 2, and N is greater than M.

2. The method according to claim 1, wherein the non-AP MLD is in a multi-link spatial multiplexing power save mode, and the multi-link spatial multiplexing power save mode comprises:

performing, by the non-AP MLD, communication by using the second configuration, or

switching, by the non-AP MLD, between the first configuration and the second configuration for communication.

3. The method according to claim 1 or 2, wherein the method further comprises:

after data transmission between the non-AP MLD and the AP MLD by using the first configuration ends, switching, by the non-AP MLD, to the second configuration for communication.

4. The method according to any one of claims 1 to 3, wherein before the receiving, by a non-AP MLD, a radio frame from an AP MLD, the method further comprises:

sending, by the non-AP MLD, a first message to the AP MLD, wherein the first message is used to notify the AP MLD that the non-AP MLD enters the multi-link spatial multiplexing power save mode.

5. The method according to claim 4, wherein the method further comprises:

after receiving a second message from the AP MLD, switching, by the non-AP MLD, to the multi-link spatial multiplexing power save mode, wherein

the second message is a response message or an acknowledgment message for the first message.

6. The method according to any one of claims 1 to 5, wherein the performing communication, by the non-AP MLD, with the AP MLD by using a first configuration comprises:

receiving, by the non-AP MLD, a data frame from the AP MLD on T links, wherein T is an integer greater than 1 or equal to 1; and

the method further comprises:

comprising, by the data frame on each of the T links, a more data field, wherein the more data field in the data frame on the link indicates whether data transmission on the corresponding link ends, and the non-AP MLD determines, based on the more data field on each link, whether the data transmission ends; or

comprising, by the data frame, a multi-link more data field, wherein the multi-link more data field indicates whether data transmission on the T links ends, and the non-AP MLD determines, based on the multi-link more data field, whether the data transmission ends.

7. The method according to any one of claims 1 to 6, wherein the method further comprises:

sending, by the non-AP MLD, indication information to a station of the AP MLD, wherein the indication information comprises information about the first configuration or information about the second configuration, and

the indication information indicates configuration information of each station on one or more links of the non-AP MLD.

8. The method according to any one of claims 1 to 7, wherein

the information about the first configuration or the information about the second configuration comprises one or more pieces of the following information:

an identifier of a link, a number of spatial streams of the link, bandwidth of the link, whether to support uplink multi-user transmission, and whether to support an extended-range transmission mode.

9. The method according to any one of claims 4 to 8, wherein

the first message comprises a control field, wherein the control field comprises a first field,

the first field is used to notify the AP MLD that whether the non-AP MLD enters the multi-link spatial multiplexing power save mode, and the value of the first field is the first value is used to indicate the non-AP MLD enters the multi-link spatial multiplexing power save mode.

10. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program or instructions, and the computer program or instructions are used to implement the method, applied to a non-AP MLD device, according to any one of claims 1 to 9.

11. A communication apparatus, wherein the communication apparatus is configured to perform the method according to any one of claims 1 to 9.

12. A computer program product, wherein the computer program product comprises a computer program or instructions, and when the computer program or instructions are executed by a computer, a communication apparatus is enabled to perform the method according to any one of claims 1 to 9.