

CLAIMS

What is claimed is:

1. A method for determining a data buffer status, wherein the method comprises:

receiving, by a first multi-link device (MLD), a beacon frame, the beacon frame comprising a traffic information map (TIM) field, wherein the TIM field is used to indicate a buffer status of bufferable data of each station in the first MLD in a second MLD;

receiving (S402), by the first MLD, second bufferable data from the second MLD over a first link, wherein the second bufferable data comprises third indication information, the third indication information being used to indicate whether first bufferable data corresponding to at least one second data type is buffered in the second MLD, and the second data type being any data type mapped to the first link; and

determining (S403), by the first MLD based on the third indication information, whether the first bufferable data corresponding to the at least one second data type is buffered in the second MLD;

wherein a MAC frame structure of the second bufferable data includes a frame control (Frame Control) field, wherein the Frame Control field comprises a More Data subfield, wherein the third indication information is the More Data subfield; a value of the More Data subfield is 1, indicating that the first bufferable data corresponding to the at least one second data type is buffered in the second MLD; or a value of the More Data subfield is 0, indicating that the first bufferable data corresponding to any one second data type is not buffered in the second MLD.

2. The method according to claim 1, wherein the first MLD has a plurality of stations, the method further comprises:

after determining whether the bufferable data corresponding to the at least one second data type is buffered in the second MLD, determining, by the first MLD, an operating status of at least one station in the plurality of stations based on whether the first bufferable data corresponding to the at least one second data type is buffered in the second MLD, wherein the operating status is an active state or a doze state.

3. The method according to claim 2, wherein if the first bufferable data corresponding to the at least one second data type is buffered in the second MLD, the first MLD determines the operating status of the station corresponding to the first link in the plurality of stations as the active state; or if the first bufferable data corresponding to any second data type is not buffered in the second MLD, the first

MLD determines the operating status of the station corresponding to the first link in the plurality of stations as the active state or the doze state.

4. The method according to claim 1, wherein the method further comprises:

sending, by the first MLD, a power saving polling (PS-Poll) frame to the second MLD to indicate to the second MLD that the first link is in the active state.

5. A method for determining a data buffer status, wherein the method comprises:

sending, by a second multi-link device (MLD), a beacon frame, the beacon frame comprising a traffic information map (TIM) field, wherein the TIM field is used to indicate a buffer status of bufferable data of each station in a first MLD in the second MLD;

determining (S401), by the second MLD, whether first bufferable data corresponding to at least one second data type is buffered in the second MLD, wherein the second data type is any data type mapped to a first link; and

sending (S402), by the second MLD, second bufferable data to a first MLD over the first link, wherein the bufferable data comprises third indication information, and the third indication information is used to indicate whether the first bufferable data corresponding to the at least one second data type is buffered in the second MLD;

wherein a MAC frame structure of the second bufferable data includes a frame control (Frame Control) field, wherein the Frame Control field comprises a More Data subfield, wherein the third indication information is the More Data subfield; a value of the More Data subfield is 1, indicating that the first bufferable data corresponding to the at least one second data type is buffered in the second MLD; or a value of the More Data subfield is 0, indicating that the first bufferable data corresponding to any one second data type is not buffered in the second MLD.

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

sending, by the second MLD, fourth bufferable data to the first MLD after receiving the PS-Poll frame from the first MLD, wherein the PS-Poll frame indicates to the second MLD that the first link is in the active state.

7. The method according to any one of claims 5 or 6, wherein the method further comprising sending a fourth indication information to the second MLD, wherein the fourth indication information is a quality of service null value (QoS Null frame), wherein the QoS Null frame is a data frame that does not carry a payload, and a value of the More Data subfield in the QoS Null frame is 0.

8. A communications apparatus, wherein the apparatus comprises a transceiver and a processor,
wherein the transceiver is configured to receive a beacon frame, the beacon frame comprising a traffic information map (TIM) field, wherein the TIM field is used to indicate a buffer status of bufferable data of each station in a first multi-link device (MLD) in a second MLD;

the transceiver is further configured to receive second bufferable data from the second MLD over a first link, wherein the second bufferable data comprises third indication information, the third indication information being used to indicate whether first bufferable data corresponding to at least one second data type is buffered in the second MLD, and the second data type being any data type mapped to the first link; and

the processor is configured to determine, based on the third indication information, whether the first bufferable data corresponding to the at least one second data type is buffered in the second MLD;

wherein a MAC frame structure of the second bufferable data includes a frame control (Frame Control) field, wherein the Frame Control field comprises a More Data subfield, wherein the third indication information is the More Data subfield; a value of the More Data subfield is 1, indicating that the first bufferable data corresponding to the at least one second data type is buffered in the second MLD; or a value of the More Data subfield is 0, indicating that the first bufferable data corresponding to any one second data type is not buffered in the second MLD.

9. The communications apparatus according to claim 8, wherein the communications apparatus has a plurality of stations; and the processor is further configured to determine an operating status of at least one station in the plurality of stations based on whether the first bufferable data corresponding to the at least one second data type is buffered in the second MLD, wherein the operating status is an active state or a doze state.

10. The communications apparatus according to claim 9, wherein the processor is specifically configured to:

if the first bufferable data corresponding to the at least one second data type is buffered in the second MLD, determine the operating status of the station corresponding to the first link in the plurality of stations as the active state; and

if the first bufferable data corresponding to any second data type is not buffered in the second MLD, determine the operating status of the station corresponding to the first link in the plurality of stations as the active state or the doze state.

11. The communications apparatus according to claim 8, wherein the processor is further configured to send a power saving polling (PS-Poll) frame to the second MLD to indicate to the second MLD that the first link is in the active state.

12. A communications apparatus, wherein the apparatus comprises a transceiver, a processor, and a memory,

wherein the transceiver is configured to send a beacon frame, the beacon frame comprising a traffic information map (TIM) field, wherein the TIM field is used to indicate a buffer status of bufferable data of each station in a first MLD in a second MLD;

the processor is configured to determine whether first bufferable data corresponding to at least one second data type is buffered in the memory, wherein the second data type is any data type mapped to a first link; and the transceiver is further configured to send second bufferable data to the first MLD over the first link, wherein the second bufferable data comprises third indication information, and the third indication information is used to indicate whether the first bufferable data corresponding to the at least one second data type is buffered in the memory;

wherein a MAC frame structure of the second bufferable data includes a frame control (Frame Control) field, wherein the Frame Control field comprises a More Data subfield, wherein the third indication information is the More Data subfield; a value of the More Data subfield is 1, indicating that the first bufferable data corresponding to the at least one second data type is buffered in the memory; or a value of the More Data subfield is 0, indicating that the first bufferable data corresponding to any one second data type is not buffered in the memory.

13. The communications apparatus according to claim 12, wherein the transceiver is further configured to send fourth bufferable data to the first MLD after receiving a PS-Poll frame from the first MLD, wherein the PS-Poll frame indicates to the second MLD that the first link is in the active state.

14. The communications apparatus according to any one of claim 12 or 13, wherein the transceiver is configured to send a fourth indication information to the second MLD, wherein the fourth indication information is a quality of service null value (QoS Null frame), wherein the QoS Null frame is a data frame that does not carry a payload, and a value of the More Data subfield in the QoS Null frame is 0.

15. A chip system, comprising at least one processor and an interface, wherein

the interface is configured to receive a beacon frame, the beacon frame comprising a traffic information map (TIM) field, wherein the TIM field is used to indicate a buffer status of bufferable data of each station in a first MLD in a second MLD;

the interface is further configured to receive second bufferable data from the second MLD over a first link, wherein the second bufferable data comprises third indication information, the third indication information being used to indicate whether first bufferable data corresponding to at least one second data type is buffered in the second MLD, and the second data type being any data type mapped to the first link; and

the processor is configured to determine, based on the third indication information, whether the first bufferable data corresponding to the at least one second data type is buffered in the second MLD;

wherein a MAC frame structure of the second bufferable data includes a frame control (Frame Control) field, wherein the Frame Control field comprises a More Data subfield, wherein the third indication information is the More Data subfield; a value of the More Data subfield is 1, indicating that the first bufferable data corresponding to the at least one second data type is buffered in the second MLD; or a value of the More Data subfield is 0, indicating that the first bufferable data corresponding to any one second data type is not buffered in the second MLD.

16. A chip system, comprising at least one memory, at least one processor, and an interface,

wherein the processor is configured to determine whether first bufferable data corresponding to at least one second data type is buffered in the memory, wherein the second data type is any data type mapped to a first link; and the interface is configured to send second bufferable data to a first MLD over the first link, wherein the second bufferable data comprises third indication information, and the third indication information is used to indicate whether the first bufferable data corresponding to the at least one second data type is buffered in the memory;

wherein a MAC frame structure of the second bufferable data includes a frame control (Frame Control) field, wherein the Frame Control field comprises a More Data subfield, wherein the third indication information is the More Data subfield; a value of the More Data subfield is 1, indicating that the first bufferable data corresponding to the at least one second data type is buffered in the memory; or a value of the More Data subfield is 0, indicating that the first bufferable data corresponding to any one second data type is not buffered in the memory.

17. A computer-readable storage medium, configured to store a computer program, wherein when the computer program is run on a computer, the computer is enabled to perform the method according to any one of claims 1-4, or perform the method according to any one of claims 5-7.

18. An apparatus, configured to perform the method according to any one of claims 1-4, or perform the method according to any one of claims 5-7.

19. A program, wherein when the program is run on a computer, the computer is enabled to perform the method according to any one of claims 1 to 4 or perform the method according to any one of claims 5 to 7.