

CLAIMS

What is claimed is:

1. A channel sounding method, comprising:

receiving, by a second access point, a user association frame from a first access point, wherein
5 the user association frame carries identification information of a first station and is used to
determine a first channel sounding result of the first station, wherein the first station is associated
with the first access point; and

determining, by the second access point, the first channel sounding result from a plurality of
second channel sounding results based on the user association frame, wherein the plurality of
10 second channel sounding results are obtained by the second access point by performing sounding
on a plurality of channel sounding frames from a plurality of stations, wherein the channel
sounding frame is used for channel sounding,

wherein the determining, by the second access point, the first channel sounding result from a
plurality of second channel sounding results based on the user association frame comprises:

15 determining, by the second access point, at least one second channel sounding result that
meets a first preset condition in the plurality of second channel sounding results as the first channel
sounding result, wherein the first preset condition is that a difference between a receiving moment
of a channel sounding frame corresponding to the second channel sounding result and a receiving
moment of a channel sounding frame received by the first access point from the first station falls
20 within a first preset range.

2. The method according to claim 1, wherein the determining, by the second access point, the
first channel sounding result from a plurality of second channel sounding results based on the user
association frame comprises:

receiving, by the second access point, a channel sounding instruction from a controller or a
25 central access point, and determining the first channel sounding result from the plurality of second
channel sounding results, wherein the channel sounding instruction indicates the second access
point to perform channel sounding on the plurality of channel sounding frames, the plurality of
stations comprise the first station, and the first station is not associated with the second access
point.

30 3. The method according to claim 1, wherein the determining, by the second access point, the

first channel sounding result from a plurality of second channel sounding results based on the user association frame further comprises:

determining, by the second access point based on packet length information, the first channel sounding result from the at least one second channel sounding result that meets the first preset condition, wherein the packet length information indicates a length of the channel sounding frame sent by the first station to the first access point, and the packet length information is carried in the user association frame; and/or

determining, by the second access point based on packet fingerprint information, the first channel sounding result from the at least one second channel sounding result that meets the first preset condition, wherein the packet fingerprint information indicates length information of a channel sounding frame sent by the first station to the first access point, and the packet fingerprint information is carried in the user association frame.

4. The method according to claim 3, wherein the determining, by the second access point based on packet length information, the first channel sounding result from the at least one second channel sounding result that meets the first preset condition comprises:

determining, by the second access point, a second channel sounding result that meets a second preset condition in the at least one second channel sounding result that meets the first preset condition as the first channel sounding result, wherein the second preset condition is that a packet length of the channel sounding frame corresponding to the second channel sounding result and a packet length of the channel sounding frame received by the first access point from the first station are the same or have a minimum difference.

5. The method according to claim 3, wherein the determining, by the second access point based on packet fingerprint information, the first channel sounding result from the at least one second channel sounding result that meets the first preset condition comprises:

determining, by the second access point, a second channel sounding result that meets a third preset condition in the at least one second channel sounding result that meets the first preset condition as the first channel sounding result, wherein the third preset condition is that packet fingerprint information of the channel sounding frame corresponding to the second channel sounding result is the same as the packet fingerprint information.

6. The method according to any one of claims 1 to 5, wherein the method further comprises: performing, by the second access point, timing synchronization with the first access point.

7. A channel sounding method, comprising:

performing, by a first access point, channel sounding on a channel sounding frame sent by a first station, wherein the channel sounding frame is used for channel sounding, and the first station is associated with the first access point; and

5 sending, by the first access point, a user association frame to a second access point, wherein the user association frame carries identification information of the first station, and is used to determine a first channel sounding result that matches the first station from a plurality of second channel sounding results, wherein the plurality of second channel sounding results are obtained by the second access point by performing sounding on a plurality of channel sounding frames from a
10 plurality of stations, the plurality of stations comprise the first station, and the first station is not associated with the second access point,

wherein the user association frame carries a first receiving moment, wherein the first receiving moment is a receiving moment at which the first access point receives the channel sounding frame sent by the first station, the first receiving moment is determined based on a system
15 time point of the first access point, and the system time point of the first access point is synchronized with a system time point of the second access point.

8. The method according to claim 7, wherein the sending, by the first access point, a user association frame to a second access point comprises:

receiving, by the first access point, a channel sounding instruction from a controller or a
20 central access point, and sending the user association frame to the second access point, wherein the channel sounding instruction indicates the first access point to perform channel sounding and send the user association frame to the second access point.

9. The method according to any one of claims 7 to 9, wherein the user association frame further comprises packet length information and/or packet fingerprint information, wherein the
25 packet length information indicates a length of the channel sounding frame received by the first access point from the first station, and the packet fingerprint information comprises the packet length information.

10. The method according to claim 9, wherein the packet length information is determined based on information carried in a signal field in a physical layer protocol data unit PPDU, wherein
30 the channel sounding frame is carried in the PPDU; or

the packet length information is determined based on a difference of moments indicated by a

physical layer receive end indication PHY-RXEND.indication and a physical layer receive start indication PHY-RXSTART.indication that are received by a media access control MAC layer; or

the packet length information is determined based on a start moment and an end moment of a clear channel assessment CCA during reception of the channel sounding frame sent by the first

station.

11. The method according to claim 9, wherein the channel sounding frame received by the first access point from the first station is carried in a PPDU, and the packet fingerprint information is determined based on information carried in a signal field in the PPDU.

12. The method according to any one of claims 7 to 11, wherein the method further comprises:
sending, by the first access point, a channel sounding announcement frame to the controller or the central access point, wherein the channel sounding announcement frame comprises a channel sounding state, wherein the channel sounding state indicates that a channel sounding result is correct, incorrect, or lost.

13. A signal quality sounding method, comprising:
receiving, by a second access point, a user association frame from a first access point, wherein the user association frame carries identification information of a first station and is used to determine a first signal quality sounding result of the first station, wherein the first station is associated with the first access point, and the signal quality is determined based on a received signal strength RSS or a received signal strength indicator RSSI; and

determining, by the second access point, the first signal quality sounding result from a plurality of second signal quality sounding results based on the user association frame, wherein the plurality of second signal quality sounding results are obtained by the second access point by performing sounding on a plurality of signal sounding frames from a plurality of stations,

wherein the determining, by the second access point, the first signal quality sounding result from a plurality of second signal quality sounding results based on the user association frame comprises:

determining, by the second access point, at least one second signal quality sounding result that meets a first preset condition in the plurality of second signal quality sounding results as the first signal quality sounding result, wherein the first preset condition is that a difference between a receiving moment of a signal sounding frame corresponding to the second signal quality sounding result and a receiving moment of a signal sounding frame received by the first access

point from the first station falls within a first preset range.

14. The method according to claim 13, wherein the determining, by the second access point, the first signal quality sounding result from a plurality of second signal quality sounding results based on the user association frame comprises:

5 receiving, by the second access point, a channel sounding instruction from a controller or a central access point, and determining the first signal quality sounding result from the plurality of second signal quality sounding results, wherein the channel sounding instruction indicates the second access point to perform sounding on the plurality of signal sounding frames, the plurality of stations comprise the first station, and the first station is not associated with the second access
10 point.

15. A signal quality sounding method, comprising:

performing, by a first access point, channel sounding on a signal sounding frame sent by a first station, wherein the signal sounding frame is used for sounding on a received signal strength RSS or a received signal strength indicator RSSI, and the first station is associated with the first
15 access point; and

sending, by the first access point, a user association frame to a second access point, wherein the user association frame carries identification information of the first station, and is used to determine a signal quality sounding result that matches the first station from a plurality of second signal quality sounding results, wherein the plurality of second signal quality sounding results are
20 obtained by the second access point by performing sounding on a plurality of signal sounding frames from a plurality of stations, the plurality of stations comprise the first station, and the first station is not associated with the second access point,

wherein the user association frame carries a first receiving moment, wherein the first receiving moment is a receiving moment at which the first access point receives the channel sounding frame sent by the first station, the first receiving moment is determined based on a system
25 time point of the first access point, and the system time point of the first access point is synchronized with a system time point of the second access point.

16. The method according to claim 15, wherein the sending, by the first access point, a user association frame to a second access point comprises:

30 receiving, by the first access point, a channel sounding instruction from a controller or a central access point, and sending the user association frame to the second access point, wherein

the channel sounding instruction indicates the first access point to perform channel sounding on the received signal sounding frame and send the user association frame to the second access point.

17. An apparatus, configured to perform the method according to any one of claims 1 to 6 or 7 to 12, 13 to 14, or 15 to 16.