

CLAIMS

1. An operating method for enhanced multi-link single radio (EMLSR), comprising:

determining, by a first station, whether to start a medium synchronization delay timer based on comparison between a duration time of the first station losing the medium synchronization and a medium synchronization threshold; wherein the first station is affiliated with a non-access point multi-link device (non-AP MLD) operating in an EMLSR mode, and the first station operates on a first EMLSR link among a plurality of EMLSR links of the non-AP MLD;

wherein determining, by the first station, whether to start the medium synchronization delay timer based on comparison between the duration time of the first station losing the medium synchronization and the medium synchronization threshold comprises:

starting, by the first station, the medium synchronization delay timer immediately after the non-AP MLD returns to a listening operation when the duration time of the first station losing the medium synchronization is longer than the medium synchronization threshold; and

not starting, by the first station, the medium synchronization delay timer after the non-AP MLD returns to a listening operation when the duration time of the first station losing the medium synchronization is smaller than or equal to the medium synchronization threshold;

wherein the duration time is a sum of a transition delay and a duration starting from a time point when the first station switches from the listening operation to a frame exchange to an end time of the frame exchange;

wherein the transition delay starts from the end time of the frame exchange to a time point when the non-AP MLD returns to the listening operation.

2. The method according to claim 1, wherein the end time of the frame exchange is determined by adding a wait time to an end of a Presentation Protocol Data Unit (PPDU), and the wait time is a sum of aSIFSTime, aSlotTime, and aRxPHYStartDelay.

3. The method according to claim 1, wherein a second station performs a frame exchange while the non-AP MLD is in the frame exchange, and the second station is affiliated with the non-AP MLD, and the frame exchange is performed on a second EMLSR link where the second station operates on.

4. The method according to claim 3, wherein the first station and the second station respectively communicate with a first AP station and a second AP station in an AP MLD via the first EMLSR link and the second EMLSR link.

5. The method according to claim 4, comprising:

when determining that the non-AP MLD is performing the listening operation, determining, by the first station, whether the first station loses the medium synchronization due to the frame exchange started between the second station and the second AP station;

when determining that the first station loses the medium synchronization, determining, by the first station, that the non-AP MLD switches from the listening operation to the frame exchange.

6. A first station, comprising:

a memory configured to store instructions;

a processor, coupled with the memory, the processor, when executing the instructions, is configured to:

determine whether to start a medium synchronization delay timer based on comparison between a duration time of the first station losing the medium synchronization and a medium synchronization threshold; wherein the first station is affiliated with a non-access point multi-link device (non-AP MLD) operating in an EMLSR mode, and the first station operates on a first EMLSR link among a plurality of EMLSR links of the non-AP MLD; wherein in determining whether to start the medium synchronization delay timer based on comparison between the duration time of the first station losing the medium synchronization and the medium synchronization threshold, the processor is configured to:

start the medium synchronization delay timer immediately after the non-AP MLD returns to a listening operation when the duration time of the first station losing the medium synchronization is longer than the medium synchronization threshold; and

not starting, by the first station, the medium synchronization delay timer after the non-AP MLD returns to a listening operation when the duration time of the first station losing the medium synchronization is smaller than or equal to the medium synchronization threshold;

wherein the duration time is a sum of a transition delay and a duration starting from a time point when the first station switches from the listening operation to a frame exchange to an end time of the frame exchange;

wherein the transition delay starts from the end time of the frame exchange to a time point when the non-AP MLD returns to the listening operation.

7. The first station according to claim 6, wherein the end time of the frame exchange is determined by adding a wait time to an end of a Presentation Protocol Data Unit (PPDU), and the wait time is a sum of aSIFSTime, aSlotTime, and aRxPHYStartDelay.

8. The first station according to claim 6, wherein a second station performs a frame exchange while the non-AP MLD is in the frame exchange, and the second station is affiliated with the non-AP MLD, and the frame exchange is performed on a second EMLSR link where the second station operates on.

9. The first station according to claim 8, wherein the first station and the second station respectively communicate with a first AP station and a second AP station in an AP MLD via the first EMLSR link and the second EMLSR link.

10. The first station according to claim 9, wherein the processor is configured to:
when determining that the non-AP MLD is performing the listening operation, determine whether the first station loses the medium synchronization due to the frame exchange started between the second station and the second AP station;

when determining that the first station loses the medium synchronization, determine that the non-AP MLD switches from the listening operation to the frame exchange.

11. A chip, comprising: a processor, and configured to call and run a computer program from a memory, so that a first station provided with the chip executes an operating method for enhanced multi-link single radio (EMLSR), the method comprising:

determining whether to start a medium synchronization delay timer based on comparison between a duration time of the first station losing the medium synchronization and a medium synchronization threshold; wherein the first station is affiliated with a non-access point multi-link device (non-AP MLD) operating in an EMLSR mode, and the first station operates on a first EMLSR link among a plurality of EMLSR links of the non-AP MLD;

wherein determining whether to start the medium synchronization delay timer based on comparison between the duration time of the first station losing the medium synchronization and the medium synchronization threshold comprises:

starting the medium synchronization delay timer immediately after a non-access point multi-link device (non-AP MLD) returns to a listening operation when the duration time of the

first station losing the medium synchronization is longer than the medium synchronization threshold; and

5 not starting the medium synchronization delay timer after the non-AP MLD returns to a listening operation when the duration time of the first station losing the medium synchronization is smaller than or equal to the medium synchronization threshold;

 wherein the duration time is a sum of a transition delay and a duration starting from a time point when the first station switches from the listening operation to a frame exchange to an end time of the frame exchange;

10 wherein the transition delay starts from the end time of the frame exchange to a time point when the non-AP MLD returns to the listening operation.