

WHAT IS CLAIMED IS:

1. An information transmission method, comprising:

configuring, by an access point (AP), an aggregated physical layer (PHY) protocol data unit (A-PPDU) used for downlink transmission to a set of stations (STAs), wherein the A-PPDU comprises
5 a first PPDU and at least one second PPDU if a number of first symbols of the first PPDU is equal to a number of second symbols of the second PPDU and/or a first field of the first PPDU has a same symbol duration and/or a same guard interval (GI) duration as a second field of the second PPDU;
and

determining, by the AP, an uplink transmission from a STA of the set of STAs, wherein the
10 uplink transmission is in response to the A-PPDU used for downlink transmission,

wherein the A-PPDU used for downlink transmission to the set of STAs is configured in a basic service set (BSS) with a bandwidth,

wherein a 320 MHz bandwidth frequency domain A-PPDU (FD-A-PPDU) comprises a high efficiency multi-user PPDU (HE MU PPDU), an extremely high throughput multi-user PPDU (EHT
15 MU PPDU), and a post-EHT MU PPDU; or a HE MU PPDU and a post-EHT MU PPDU; and

wherein for the 320 MHz bandwidth FD-A-PPDU, a bandwidth allocated to at least one HE STA is primary 80 MHz (P80).

2. The information transmission method of claim 1, wherein the second field comprises an EHT-LTF,

20 wherein a number of HE long training field (HE-LTF) symbols is same as or different from a number of EHT long training field (EHT-LTF) symbols.

3. The information transmission method of claim 2, wherein when the number of HE-LTF symbols is same as the number of EHT-LTF symbols, each HE-LTF symbol and/or each EHT-LTF symbol has a different duration or a same duration from each data symbol;

25 and/or,

wherein when the number of HE-LTF symbols is different from the number of EHT-LTF symbols, each HE-LTF symbol and/or each EHT-LTF symbol has a same duration from each data symbol.

4. The information transmission method of any one of claims 1 to 3, wherein the uplink
30 transmission is determined in a first bandwidth channel if the STA is a first type of STA and/or is determined in a second bandwidth channel if the STA is a second type of STA and/or is determined in a third bandwidth channel if the STA is a third type of STA.

5. The information transmission method of claim 4, wherein the second type of STA comprises an EHT STA, and the second bandwidth channel comprises a non-primary 80 MHz channel and/or

the third type of STA comprises a post-EHT STA, and the third bandwidth channel comprises a non-primary 80 MHz channel.

6. The information transmission method of any one of claims 1 to 5, wherein for the 320 MHz bandwidth FD-A-PPDU, bandwidth allocation in the FD-A-PPDU comprises at least one of the following options:

option 1A: when S80 is punctured, a bandwidth allocated to at least one HE STA is P80 and a bandwidth allocated to at least one EHT STA is S160;

option 1B: when one of two 80 MHz frequency segments of S160 is punctured, the bandwidth allocated to the at least one HE STA is P80 and the bandwidth allocated to the at least one EHT STA is S80 and the other 80 MHz frequency segment of S160;

option 1C: when none of 80 MHz frequency segments is punctured, the bandwidth allocated to the at least one HE STA is P80 and the BW allocated to the at least one EHT STA is S80 and S160.

7. The information transmission method of claim 1, wherein for the 320 MHz bandwidth FD-A-PPDU, bandwidth allocation in the FD-A-PPDU comprises at least one of the following options:

option 2A: when S80 is punctured, the bandwidth allocated to at least one HE STA is P80 and bandwidths allocated to at least one EHT STA and at least one post-EHT STA are two 80 MHz frequency segments of S160, respectively;

option 2B: when one of two 80 MHz frequency segments of S160 is punctured, the bandwidth allocated to the at least one HE STA is P80 and the bandwidth allocated to the at least one EHT STA and the at least one post-EHT STA are S80 and the other 80 MHz frequency segment of S160, respectively;

option 2C: when none of 80 MHz frequency segments is punctured, the bandwidth allocated to the at least one HE STA is P80, the bandwidth allocated to the at least one EHT STA is S160, and the bandwidth allocated to the at least one post-EHT STA is S80; or

option 2D: when none of 80 MHz frequency segments is punctured, the bandwidth allocated to the at least one HE STA is P80, the bandwidth allocated to the at least one post-EHT STA is S160, and the bandwidth allocated to the at least one EHT STA is S80.

8. The information transmission method of claim 1, wherein for trigger-based uplink transmission, the FD-A-PPDU comprises one or more HE trigger-based PPDU (HE TB PPDU), and one or more EHT TB PPDU in an EHT BSS and/or the FD-A-PPDU comprises one or more HE TB PPDU, one or more EHT TB PPDU, and one or more post-EHT TB PPDU in a post-EHT BSS.

9. An information transmission method, comprising:

determining, by a station (STA) of a set of STAs, an aggregated physical layer (PHY) protocol data unit (A-PPDU) used for downlink transmission from an access point (AP), wherein the A-PPDU

comprises a first PPDU and at least one second PPDU if a number of first symbols of the first PPDU is equal to a number of second symbols of the second PPDU and/or a first field of the first PPDU has a same symbol duration and/or a same guard interval (GI) duration as a second field of the second PPDU; and

5 transmitting, by the STA, an uplink transmission to the AP, wherein the uplink transmission is in response to the A-PPDU used for downlink transmission,

wherein the A-PPDU used for downlink transmission to the set of STAs is configured in a basic service set (BSS) with a bandwidth,

10 wherein a 320 MHz bandwidth frequency domain A-PPDU (FD-A-PPDU) comprises a high efficiency multi-user (HE MU PPDU), an extremely high throughput multi-user PPDU (EHT MU PPDU), and a post-EHT MU PPDU; or a HE MU PPDU and a post-EHT MU PPDU; and

wherein for the 320 MHz bandwidth FD-A-PPDU, a bandwidth allocated to at least one HE STA is primary 80 MHz, (P80).

15 10. The information transmission method of claim 9, wherein the second field comprises an EHT-LTF,

wherein a number of HE long training field (HE-LTF) symbols is same as or different from a number of EHT long training field (EHT-LTF) symbols.

20 11. The information transmission method of claim 10, wherein when the number of HE-LTF symbols is same as the number of EHT-LTF symbols, each HE-LTF symbol and/or each EHT-LTF symbol has a different duration or a same duration from each data symbol;

and/or,

wherein when the number of HE-LTF symbols is different from the number of EHT-LTF symbols, each HE-LTF symbol and/or each EHT-LTF symbol has a same duration from each data symbol.

25 12. The information transmission method of any one of claims 9 to 11, wherein the uplink transmission is transmitted in a first bandwidth channel if the STA is a first type of STA and/or is transmitted in a second bandwidth channel if the STA is a second type of STA and/or is transmitted in a third bandwidth channel if the STA is a third type of STA.

13. An access point (AP), comprising:

30 a memory;

a transceiver; and

a processor coupled to the memory and the transceiver;

wherein the processor is configured to perform the information transmission method according to any one of claims 1-8.

14. A station (STA), comprising:

a memory;

a transceiver; and

a processor coupled to the memory and the transceiver;

5 wherein the processor is configured to perform the information transmission method according to any one of claims 9-12.