

CLAIMS

1. A method for soliciting a trigger-based (TB) physical layer protocol data unit (PPDU) transmission in a wireless local area network (WLAN), the method comprising:

generating, by an access point (AP), a trigger frame based on a type of TB PPDU transmissions to be solicited from a plurality of stations (STAs) in the WLAN, wherein the type of TB PPDU transmissions comprises high efficiency (HE) TB PPDU transmissions, extremely high throughput (EHT) TB PPDU transmissions, or TB frequency domain aggregated PPDU (FD-A-PPDU) transmissions, and one or two subfields in the trigger frame indicate a bandwidth (BW) of the solicited TB PPDU, and

transmitting, by the AP, the generated trigger frame to the plurality of STAs.

2. The method according to claim 1, wherein a common info field of the trigger frame comprises an uplink (UL) bandwidth (BW) subfield indicating a BW of the solicited HE TB PPDU.

3. The method according to claim 2, wherein the BW of the solicited HE TB PPDU indicated by the UL BW subfield in the common info field of the trigger frame is in the HE SIGNAL A (HE SIG-A) field of the solicited HE TB PPDU.

4. The method according to claim 2 or claim 3, wherein the common info field of the trigger frame further comprises an enhanced trigger frame flag subfield which indicates whether the trigger frame is an 802.11ax trigger frame or an enhanced trigger frame.

5. A method for soliciting a trigger-based (TB) physical layer protocol data unit (PPDU) transmission in a wireless local area network (WLAN), the method comprising:

receiving (1401), by a station (STA), a trigger frame which is used to solicit a type of TB PPDU transmissions from a plurality of STAs in the WLAN, wherein the type of TB PPDU transmissions comprises high efficiency (HE) trigger-based (TB) PPDU transmissions, extremely high throughput (EHT) TB PPDU transmissions, or TB frequency domain aggregated PPDU (FD-A-PPDU) transmissions, and one or two subfields in the trigger frame indicate a bandwidth (BW) of the solicited TB PPDU, and

transmitting (1402), by the STA, the solicited TB PPDU in the BW indicated by the one or two subfields in the trigger frame.

6. The method according to claim 5, wherein a common info field of the trigger frame comprises an uplink (UL) bandwidth (BW) subfield indicating a BW of the solicited HE TB PPDU.

7. The method according to claim 6, wherein the BW of the solicited HE TB PPDU indicated by the UL BW subfield in the common info field of the trigger frame is in the HE SIGNAL A (HE SIG-A) field of the solicited HE TB PPDU.

8. The method according to claim 6 or 7, wherein the common info field of the trigger frame further comprises an enhanced trigger frame flag subfield which indicates whether the trigger frame is an 802.11ax trigger frame or an enhanced trigger frame.

9. The method according to claim 8, wherein when the enhanced trigger frame flag subfield indicates that the trigger frame is an enhanced trigger frame, both the UL BW subfield and a Delta EHT UL BW subfield or both the UL BW subfield and an UL BW extension subfield indicate a BW of the solicited EHT TB PPDU.

10. The method according to claim 9, wherein the BW of the solicited EHT TB PPDU indicated by both the UL BW subfield and the Delta EHT UL BW subfield or by both the UL BW subfield and the UL BW extension subfield is in the universal SIGNAL (U-SIG) field of the solicited EHT TB PPDU.

11. The method according to claim 9 or 10, wherein the BW of the solicited EHT TB PPDU is 20 MHz, 40 MHz, 80 MHz, 160 MHz or 320 MHz.

12. The method according to any one of claims 9 to 11, wherein the indicated BW of the solicited EHT TB PPDU is the same as the indicated BW of the solicited HE TB PPDU when the indicated BW of the solicited EHT TB PPDU is 20 MHz, 40 MHz, 80 MHz or 160 MHz.

13. The method according to any one of claims 9 to 11, wherein the indicated BW of the solicited EHT TB PPDU is the next available BW larger than the indicated BW of the solicited HE TB PPDU when the indicated BW of the solicited EHT TB PPDU is 320 MHz.

14. The method according to any one of claims 9 to 11, wherein the indicated BW of the solicited EHT TB PPDU is the next available BW smaller than the indicated BW of the solicited HE TB PPDU when the indicated BW of the solicited EHT TB PPDU is 80 MHz.

15. The method according to any one of claims 9 to 14, wherein the Delta EHT UL BW subfield occupies 2 bits of the enhanced trigger frame.

16. The method according to any one of claims 8 to 15, wherein the enhanced trigger frame includes a common info field and a user info list field comprising one or more user info fields.

17. The method according to any one of claims 6 to 16, wherein the BW of the solicited HE TB PPDU is 20 MHz, 40 MHz, 80 MHz or 160/80+80 MHz.

18. The method according to any one of claims 6 to 17, wherein the UL BW subfield occupies 2 bits in the common info field of the trigger frame, and

wherein the plurality of STAs comprises HE STAs and/or EHT STAs.

19. An access point (AP) for soliciting a trigger-based (TB) physical layer protocol data unit (PPDU) in a wireless local area network (WLAN), wherein the AP is configured to perform the method according to any one of claims 1 to 4.

20. A station (STA) for soliciting a trigger-based (TB) physical layer protocol data unit (PPDU) in a wireless local area network (WLAN), wherein the STA is configured to perform the method according to any one of claims 5 to 18.