CLAIMS

What is claimed is:

1. A method performed by a station, STA, the method comprising:

receiving, from an access point, AP, a trigger frame, and

transmitting, to the AP, in response to the trigger frame, a physical protocol data unit, PPDU, according to a tone plan,

wherein the tone plan comprises subcarrier tones of a first tone distributed resource unit, TDRU, corresponding to a first distributed resource unit, DRU, index and subcarrier tones of a second TDRU corresponding to a second DRU index distributed over a distribution bandwidth, wherein the distribution bandwidth includes a combined bandwidth of the first TDRU and the second TDRU, and

wherein the subcarrier tones corresponding to both the first and the second DRU indices are organized in multiple groups of tones, each group of tones comprising at least one data tone from the first TDRU and one data tone from the second TDRU.

2. The method of claim 1, wherein the PPDU comprises one or more regular resource units, RRUs.

3. The method of claim 2, wherein the PPDU includes a channel comprising one or more first subchannels carrying the one or more RRUs and one or more second subchannels carrying the first TDRU or the second TDRU.

4. The method of claim 1, wherein the trigger frame comprises a type field to indicate which type of resource units, RUs, the PPDU is carrying.

5. The method of claim 4, wherein the type field comprises information indicating that the PPDU includes:

only TDRUs; or

at least one RRU and one TDRU.

6. The method of claim 1, wherein pilot tones from each of the first TDRU and the second TDRU are distributed along with the multiple groups of tones.

7. The method of claim 1, wherein the first TDRU comprises a 26-tone DRU or a 52-tone DRU and the second TDRU comprises a 26-tone DRU or a 52-tone DRU.

8. The method of claim 1, wherein the distribution bandwidth is one of 20MHz, 40MHz, 80MHz, or 160MHz.

9. A station, STA, comprising, circuitry including a transmitter, a receiver, a processor, and a memory, configured to:

receive, from an access point, AP, a trigger frame, and

transmit to the AP, in response to the trigger frame, a physical protocol data unit, PPDU, according to a tone plan,

wherein the tone plan comprises subcarrier tones of a first tone distributed resource unit, TDRU, corresponding to a first distributed resource unit, DRU, index and subcarrier tones of a second TDRU corresponding to a second DRU index distributed over a distribution bandwidth, wherein the distribution bandwidth includes a combined bandwidth of the first TDRU and the second TDRU, and

wherein the subcarrier tones corresponding to both the first and the second DRU indices are organized in multiple groups of tones, each group of tones comprising at least one data tone from the first TDRU and one data tone from the second TDRU.

10. The STA of claim 9, wherein the PPDU comprises one or more regular resource units, RRUs.

11. The STA of claim 10, wherein the PPDU includes a channel comprising one or more first subchannels carrying the one or more RRUs and one or more second subchannels carrying the first TDRU or the second TDRU.

12. The STA of claim 9, wherein the trigger frame comprises a type field to indicate which type of RUs the PPDU is carrying.

13. The STA of claim 12, wherein the type field comprises information indicating that the PPDU includes:

only TDRUs; or

at least one RRU and one TDRU.

14. The STA of claim 9, wherein pilot tones from each of the first TDRU and the second TDRU are distributed along with the multiple groups of tones.

15. The STA of claim 9, wherein the first TDRU comprises a 26-tone DRU or a 52-tone DRU and the second TDRU comprises a 26-tone DRU or a 52-tone DRU.

16. The STA of claim 9, wherein the distribution bandwidth is one of 20MHz, 40MHz, 80MHz, or 160MHz.

17. A method performed by an access point, AP, the method comprising:

transmitting, to a station, STA, a trigger frame; and

receiving, from the STA, in response to the trigger frame, a physical protocol data unit, PPDU, according to a tone plane,

wherein the tone plan comprises subcarrier tones of a first tone distributed resource unit, TDRU, corresponding to a first distributed resource unit, DRU, index and subcarrier tones of a second TDRU corresponding to a second DRU index distributed over a distribution bandwidth, wherein the distribution bandwidth includes a combined bandwidth of the first TDRU and the second TDRU, and

wherein the subcarrier tones corresponding to both the first and the second DRU indices are organized in multiple groups of tones, each group of tones comprising at least one data tone from the first TDRU and one data tone from the second TDRU.

18. The method of claim 17, wherein the PPDU comprises one or more regular resource units, RRUs.

19. The method of claim 17, wherein the PPDU includes a channel comprising one or more first subchannels carrying the one or more RRUs and one or more second subchannels carrying the first TDRU or the second TDRU.

20. An access point, AP, comprising, circuitry including a transmitter, a receiver, a processor, and a memory, configured to:

transmit, to a station, STA, a trigger frame; and

receive, from the STA, in response to the trigger frame, a physical protocol data unit, PPDU, according to a tone plane,

wherein the tone plan comprises subcarrier tones of a first tone distributed resource unit, TDRU, corresponding to a first distributed resource unit (DRU) index and subcarrier tones of a second TDRU corresponding to a second DRU index distributed over a distribution bandwidth, wherein the distribution bandwidth includes a combined bandwidth of the first TDRU and the second TDRU, and

wherein the subcarrier tones corresponding to both the first and the second DRU indices are organized in multiple groups of tones, each group of tones comprising at least one data tone from the first TDRU and one data tone from the second TDRU.