

WHAT IS CLAIMED IS:

1. A method for wireless communication, comprising:
generating, by an access point, a frame, the frame assigning first resource units to first devices participating in a multi-user transmission with the access point during a transmission opportunity, and the frame indicating second resource units unavailable for transmission during the transmission opportunity;
transmitting, from the access point, the frame; and
receiving, at the access point, the multi-user transmission from the first devices according to the first resource units assigned in the frame.
2. The method of claim 1, further comprising generating the frame to include, in a user info field of the frame, a predetermined association identifier to indicate that the second resource units are unavailable for transmission during the transmission opportunity.
3. The method of claim 2, further comprising indicating a received signal strength threshold in the user info field of the frame.
4. The method of claim 1, further comprising indicating, based on the indication that the second resource units are unavailable for transmission during the transmission opportunity, that the second resource units are available for use by one or more other devices.
5. The method of claim 1, further comprising generating the frame to further indicate one or more criteria for utilizing the second resource units.
6. The method of claim 5, further comprising generating the frame to indicate whether the access point permits one or more other devices to utilize the second resource units.
7. The method of claim 5, wherein generating the frame to indicate one or more criteria for utilizing the second resource units comprises generating the frame to further indicate a received signal strength (RSSI) limit for the frame, the frame indicating

that if the RSSI of the frame when received is above the limit, the second resource units are unavailable for transmission during the transmission opportunity.

8. The method of claim 1, further comprising:
determining that the second resource units are subject to interference; and
generating the frame to indicate the determination.
9. The method of claim 1, further comprising generating the frame to indicate that the second set of resource units are not necessary for existing traffic or existing stations.
10. The method of claim 1, further comprising generating the frame to associate a predetermined association identifier with the second resource units to indicate that they are unavailable for transmission during the multi-user transmission.
11. The method of claim 1, further comprising generating, by the access point, the frame to indicate that the second resource units are unavailable for transmissions after a back-off period occurring during the multi-user transmission.
12. The method of claim 1, further comprising generating, by the access point, the frame to assign third resource units for random access transmissions to the access point by devices associated with the access point.
13. The method of claim 12, further comprising generating the frame to associate a predetermined association identifier with the third resource units to indicate that they are for random access transmissions to the access point by devices associated with the access point.
14. The method of claim 12, further comprising generating, by the access point, the frame to assign fourth resource units for random access transmissions to the access point by devices unassociated with the access point.
15. The method of claim 1, wherein the second resource units consist of a single resource unit.

16. A method for wireless communication, comprising:
receiving, by a wireless device, a frame from an access point over a wireless network;
decoding, by the wireless device, the frame to determine resource units unavailable for transmission during a transmission opportunity; and
transmitting, by the wireless device, data to a second wireless device using at least a portion of the determined resource units.
17. The method of claim 16, further comprising:
performing, by the wireless device, a back-off procedure during the transmission opportunity; and
transmitting, by the wireless device, the data to the second wireless device in response to completion of the back-off procedure.
18. The method of claim 16, further comprising:
decoding, by the wireless device, the frame to identify, in a user info field of the frame, a predetermined association identifier; and
determining, by the wireless device, that the resource units are unavailable for transmission during the transmission opportunity based on the identification.
19. The method of claim 16, further comprising indicating, based on the determination that the second resource units are unavailable for transmission during the transmission opportunity, that the second resource units are available for use by one or more other devices.
20. The method of claim 16, further comprising:
decoding, by the wireless device, the frame to identify one or more criteria for use of the second resource units; and
transmitting, from the wireless device, the data in response to the criteria being met.

21. The method of claim 20, further comprising decoding the frame to determine whether the access point permits one or more other devices to utilize the second resource units.

22. The method of claim 20, wherein decoding the frame to identify one or more criteria comprises:

decoding, by the wireless device, the frame to determine a received signal strength (RSSI) limit for use of the second resource units during the transmission opportunity; and

comparing, by the wireless device, a received signal strength of the frame to the received signal strength threshold,

wherein transmitting the data in response to the criteria being met comprises transmitting, from the wireless device, the data in response to the received signal strength being below the RSSI limit.

23. The method of claim 20, further comprising decoding a user info field of the frame to identify the received signal strength threshold.

24. The method of claim 16, further comprising:

decoding, by the wireless device, the frame to determine a reason the second resource units are unavailable for transmission during the transmission opportunity; and

transmitting, from the wireless device, the data in response to the determined reason.

25. The method of claim 16, further comprising decoding the frame to determine a duration of the transmission opportunity.

26. The method of claim 16, further comprising decoding the frame to determine a second set of resource units unavailable for transmission during the transmission opportunity for random access transmissions.

27. The method of claim 26, further comprising:

performing, by the wireless device, a random access procedure before transmitting data using one or more of the second set of resource units, wherein performing the random access procedure comprises:

determining a number of resource units in the second set of resource units;

determining a numerical range based on the number;

selecting a random number from the numerical range; and

waiting a period of time based on the selected random number,

wherein the transmission of the data using one or more of the second set of resource units is performed after waiting the period of time.

28. The method of claim 16, further comprising decoding the frame to determine a second set of resource units unavailable for transmission during the transmission opportunity for random access transmissions.

29. The method of claim 16, wherein the determined resource units consist of a single resource unit.

30. An apparatus for wireless communication, comprising:

a hardware processor configured to generate a frame, the frame assigning first resource units to first devices participating in a multi-user transmission with the apparatus during a transmission opportunity, and the frame indicating second resource units unavailable for transmission during the transmission opportunity;

a transmitter configured to transmit the frame; and

a receiver configured to receive the multi-user transmission from the first devices according to the first resource units assigned in the frame.

31. An apparatus for wireless communication, comprising:

a receiver configured to receive a frame from an access point over a wireless network;

a hardware processor configured to decode the frame to determine resource units unavailable for transmission during a transmission opportunity; and

a transmitter configured to transmit data to a wireless device using at least a portion of the determined resource units.