CLAIMS

1. A method of wireless communication, comprising:

communicating, by a first wireless communication device with a second wireless communication device, a downlink control information (DCI) message that schedules a first communication signal and includes a second grant for transmitting a first feedback associated with the first communication signal;

communicating, by the first wireless communication device with the second wireless communication device, a first grant for transmitting the first feedback associated with the first communication signal, the second grant being communicated before the first grant for transmitting the first feedback; and

communicating, by the first wireless communication device with the second wireless communication device, the first feedback based on the first grant.

2. The method of claim 1, wherein the first communication signal is communicated via a physical downlink (DL) shared channel (PDSCH).

3. The method of claim 1, further comprising:

performing, by the first wireless communication device, a listen-before-talk (LBT) in an unlicensed spectrum for communicating the first feedback based on the second grant, wherein the LBT results in a LBT fail.

4. The method of claim 3, wherein performing the LBT includes performing the LBT for communicating the first feedback using a first beam, and wherein communicating the first feedback based on the first grant includes communicating the first feedback using the first beam or using a second beam different from the first beam.

5. The method of claim 1, further comprising:

communicating, by the first wireless communication device with the second wireless communication device, a second communication signal, wherein communicating the first grant further includes communicating the first grant for transmitting a second feedback associated with the second communication signal.

6. The method of claim 5, further comprising:

communicating, by the first wireless communication device with the second wireless communication device, the second feedback based on the first grant.

7. The method of claim 6, wherein communicating the first and second feedback includes communicating, during a first transmission opportunity (TXOP), the first feedback in a first slot and the second feedback in a second slot.

8. The method of claim 7, wherein the first and second slots correspond to a same slot or correspond to different slots.

9. The method of claim 7, wherein the communicating the first grant further includes:

communicating a first acknowledgement resource indicator (ARI) indicating a first resource in the first slot for the first feedback; and

communicating a second ARI indicating a second resource in the second slot for the second feedback.

10. The method of claim 6, wherein communicating the first and second feedback includes communicating the first feedback using a first beam and communicating the second feedback using a second beam different from the first beam.

11. The method of claim 6, wherein communicating the first and second feedback includes communicating the first and second feedback using a same beam.

12. The method of claim 1, wherein the first grant includes a request for a payload size of the first feedback and further includes a request for a bitmask of one or more DL grants associated with the first feedback.

13. An apparatus comprising:

a transceiver configured to:

communicate, with a second wireless communication device, a downlink control information (DCI) message that schedules a first communication signal and includes a second grant for transmitting a first feedback associated with the first communication signal;

communicate, with the second wireless communication device, a first grant for transmitting the first feedback associated with the first communication signal, the second grant being communicated before the first grant for transmitting the first feedback; and

communicate, with the second wireless communication device, the first feedback based on the first grant.

14. The apparatus of claim 13, wherein the first feedback includes an acknowledgement (ACK) indicating reception of the first communication signal without error or includes a negative-acknowledgement (NACK) indicating reception of the first communication signal with error.

15. The apparatus of claim 13, wherein the first communication signal is communicated via a physical downlink shared channel (PDSCH).

16. The apparatus of claim 13, further comprising:

a processor configured to perform a listen-before-talk (LBT) in an unlicensed spectrum for communicating the first feedback based on a second grant, wherein the LBT results in a LBT fail.

17. The apparatus of claim 16, wherein the processor is configured to perform the LBT for communicating the first feedback using a first beam, and the transceiver is configured to communicate the first feedback based on the first grant using a second beam different from the first beam.

18. The apparatus of claim 16, wherein the processor is configured to perform the LBT for communicating the first feedback using a first beam, and the transceiver is configured to communicate the first feedback based on the first grant using the first beam.

19. The apparatus of claim 13, wherein the first grant includes at least one of a request for a payload size of the first feedback or a request for a bitmask of one or more DL grants associated with the first feedback.

20. The apparatus of claim 13, wherein the transceiver is configured to:

communicate, with the second wireless communication device, a second communication signal; and

communicate, with the second wireless communication device, a second feedback based on the first grant, wherein the transceiver communicates the first grant for transmitting the second feedback associated with the second communication signal.

21. The apparatus of claim 20, wherein the transceiver is configured to communicate, during a first TXOP, the first feedback in a first slot and the second feedback in a second slot.

22. The apparatus of claim 21, wherein the first and second slots correspond to a same slot or correspond to different slots.

23. The apparatus of claim 20, wherein the transceiver is configured to communicate the first feedback using a first beam and communicate the second feedback using a second beam different from the first beam.

24. The apparatus of claim 20, wherein the transceiver is configured to communicate the first and second feedback using a same beam.

25. A non-transitory computer-readable medium having program code recorded thereon, the program code comprising:

code for causing a first wireless communication device to communicate, with a second wireless communication device, a downlink control information (DCI) message that schedules a first communication signal and includes a second grant for transmitting a first feedback associated with the first communication signal;

code for causing the first wireless communication device to communicate, with the second wireless communication device, a first grant for transmitting the first feedback associated with the first communication signal, the second grant being communicated before the first grant for transmitting the first feedback; and

code for causing the first wireless communication device to communicate, with the second wireless communication device, the first feedback based on the first grant.

26. The non-transitory computer-readable medium of claim 25, the program code comprising:
code for causing the first wireless communication device to perform a listen-before-talk (LBT) for communicating the first feedback using a first beam, wherein the code for causing the first wireless communication device to communicate the first feedback based on the first grant includes code for causing the first wireless communication device to communicate the first feedback using the first beam or using a second beam different from the first beam.

27. The non-transitory computer-readable medium of claim 25, wherein the code for causing the first wireless communication device to communicate the first grant further includes:

code for causing the first wireless communication device to communicate a first acknowledgement resource indicator (ARI) indicating a first resource in a first slot for the first feedback; and

code for causing the first wireless communication device to communicate a second ARI indicating a second resource in a second slot for a second feedback associated with a second communication signal.

28. The non-transitory computer-readable medium of claim 25, the program code comprising:

code for causing the first wireless communication device to communicate, with the second wireless communication device, a second communication signal, wherein the code for causing the first wireless communication device to communicate the first grant further includes code for causing the first wireless communication device to communicate the first grant for transmitting a second feedback associated with the second communication signal; and

code for causing the first wireless communication device to communicate, with the second wireless communication device, the second feedback based on the first grant, wherein the code for causing the first wireless communication device to communicate the first feedback and the second feedback includes code for causing the first wireless communication device to communicate the first feedback and the second feedback using a same beam or different beams.