

CLAIMS

What is claimed is:

1. A method for wireless communication, comprising:
receiving, at a user equipment (UE), a downlink grant from a base station, the downlink grant indicating a first set of beamforming parameters to be used by the UE for receiving a downlink transmission via a downlink transmission beam from the base station during a first transmission time interval (TTI);
determining, based at least in part on the first set of beamforming parameters and a second set of beamforming parameters, a priority order associated with the downlink transmission and a control resource set of the first TTI; and
receiving, based at least in part on the priority order, at least one of the downlink transmission using the first set of beamforming parameters or the control resource set using the second set of beamforming parameters.
2. The method of claim 1, further comprising:
determining that the control resource set is to be monitored during at least a portion of the first TTI using the second set of beamforming parameters.
3. The method of claim 1, wherein receiving at least one of the downlink transmission or the control resource set comprises ignoring the downlink grant and receiving the control resource set based at least in part on the priority order.
4. The method of claim 1, wherein the priority order is determined based at least in part on a radio network temporary identifier (RNTI) that is monitored by the UE.
5. The method of claim 1, wherein the priority order is determined based at least in part on at least one of one or more downlink resources for the downlink transmission and at least one of one or more downlink resources of the control resource set residing within a same orthogonal frequency division multiplexing (OFDM) symbol.
6. The method of claim 1, wherein the priority order indicates that the control resource set has a higher priority than the downlink transmission.
7. The method of claim 6, wherein the priority order indicates that the control resource set has the higher priority based at least in part on a quality of service (QoS)

associated with the control resource set having a higher priority than the downlink transmission, and wherein the QoS associated with the control resource set is an ultra-reliable low latency communication (URLLC) QoS, and wherein a QoS associated with the downlink transmission has a lower priority than the URLLC QoS.

8. The method of claim 1, further comprising:
determining that the first set of beamforming parameters or the second set of beamforming parameters are to be used for spatial receive beam filtering.

9. The method of claim 1, further comprising:
determining whether the downlink transmission is rate-matched around the control resource set.

10. The method of claim 9, wherein, when the downlink transmission is determined to be rate-matched around the control resource set, receiving at least one of the downlink transmission or the control resource set comprises:

monitoring the control resource set using the first set of beamforming parameters; and
receiving the downlink transmission using the first set of beamforming parameters.

11. The method of claim 1, wherein receiving at least one of the downlink transmission or the control resource set comprises:

identifying a subset of resources within the first TTI that are configured for transmitting the control resource set; and
receiving the downlink transmission during the first TTI using the subset of resources that are configured for transmitting the control resource set.

12. The method of claim 1, wherein the priority order is determined based at least in part on one or more of a type of transmission associated with the control resource set, frequency division multiplexing between downlink resources for the downlink transmission and downlink resources of the control resource set, a capability of the UE to concurrently receive multiple transmission beams, or any combination thereof.

13. The method of claim 1, further comprising:

identifying two or more different control resource sets configured by the base station, each of the two or more different control resource sets having a different priority in the priority order.

14. The method of claim 13, wherein a first control resource set of the two or more different control resource sets corresponds to transmissions of an ultra-reliable low latency communication (URLLC) service and has a higher priority than the downlink transmission, and a second control resource set of the two or more different control resource sets corresponds to transmissions of an enhanced mobile broadband (eMBB) service and has a lower priority than the downlink transmission.

15. The method of claim 1, further comprising:
identifying an aperiodic channel state information reference signal (CSI-RS) configuration within the first TTI with a third set of beamforming parameters;
disregarding the aperiodic CSI-RS configuration; and
receiving the downlink transmission using the first set of beamforming parameters during the first TTI.

16. The method of claim 1, further comprising:
identifying a third set of beamforming parameters for monitoring a transmission beam that includes a remaining system information (RMSI) control resource set; and

monitoring for the downlink transmission using the third set of beamforming parameters when a search space for the RMSI control resource set overlaps with the first TTI.

17. The method of claim 1, wherein a set of rules defining the priority order are statically defined at the UE.

18. The method of claim 1, wherein a set of rules defining the priority order are received semi-statically via radio resource control signaling.

19. A method for wireless communication, comprising:
transmitting a downlink grant to a user equipment (UE), the downlink grant indicating a first set of beamforming parameters to be used by the UE for receiving a downlink transmission via a downlink transmission beam during a first transmission time interval (TTI);

determining, based at least in part on the first set of beamforming parameters and a second set of beamforming parameters, a priority order associated with the downlink transmission and a control resource set of the first TTI; and

transmitting, based at least in part on the priority order, at least one of the downlink transmission using the first set of beamforming parameters or the control resource set using the second set of beamforming parameters.

20. The method of claim 19, further comprising:

determining that the control resource set is to be transmitted during at least a portion of the first TTI using the second set of beamforming parameters.

21. The method of claim 19, wherein transmitting at least one of the

downlink transmission or the control resource set comprises skipping transmission of the downlink grant and transmitting the control resource set based at least in part on the priority order.

22. The method of claim 19, wherein the priority order is determined based

at least in part on a radio network temporary identifier (RNTI) that is to be monitored by the UE.

23. The method of claim 19, wherein the priority order is determined based

at least in part on at least one of one or more downlink resources for the downlink transmission and at least one of one or more downlink resources of the control resource set residing within a same orthogonal frequency division multiplexing (OFDM) symbol.

24. The method of claim 19, wherein the priority order indicates that the

control resource set has a higher priority than the downlink transmission.

25. The method of claim 24, wherein the priority order indicates that the

control resource set has the higher priority based at least in part on a quality of service (QoS) associated with the control resource set having a higher priority than the downlink transmission, and wherein the QoS associated with the control resource set is an ultra-reliable low latency communication (URLLC) QoS, and wherein a QoS associated with the downlink transmission has a lower priority than the URLLC QoS.

26. The method of claim 19, wherein the priority order indicates which of the first set of beamforming parameters or the second set of beamforming parameters are to be used for spatial receive beam filtering.

27. The method of claim 19, wherein the priority order indicates whether the downlink transmission is to be rate-matched around the control resource set.

28. The method of claim 27, wherein, when the downlink transmission is rate-matched around the control resource set, the method further comprises:

transmitting the control resource set using the first set of beamforming parameters.

29. The method of claim 19, wherein the transmitting at least one of the downlink transmission or the control resource set comprises:

skipping transmission of the control resource set; and

transmitting the downlink transmission using resources within the first TTI that are configured for transmitting the control resource set.

30. The method of claim 19, wherein the priority order is determined based at least in part on one or more of a type of transmission associated with the control resource set, frequency division multiplexing between downlink resources for the downlink transmission and resources of the control resource set, a capability of the UE to concurrently receive multiple transmission beams, or any combination thereof.

31. The method of claim 19, further comprising:

identifying two or more different control resource sets having a different priority in the priority order.

32. The method of claim 31, wherein a first control resource set of the two or more different control resource sets corresponds to transmissions of an ultra-reliable low latency communication (URLLC) service and has a higher priority than the downlink transmission, and a second control resource set of the two or more different control resource sets corresponds to transmissions of an enhanced mobile broadband (eMBB) service and has a lower priority than the downlink transmission.

33. The method of claim 19, further comprising:

identifying an aperiodic channel state information reference signal (CSI-RS) configuration within the first TTI with a third set of beamforming parameters;
disregarding the aperiodic CSI-RS configuration; and
transmitting the downlink transmission using the first set of beamforming parameters during the first TTI.

34. The method of claim 19, further comprising:
identifying a third set of beamforming parameters for a transmission beam that includes a remaining system information (RMSI) control resource set; and
transmitting the downlink transmission using the third set of beamforming parameters when a search space for the RMSI control resource set overlaps with the first TTI.

35. The method of claim 19, wherein a set of rules defining the priority order are statically defined or are transmitted semi-statically via radio resource control signaling.

36. An apparatus for wireless communication, comprising:
means for receiving, at a user equipment (UE), a downlink grant from a base station, the downlink grant indicating a first set of beamforming parameters to be used by the UE for receiving a downlink transmission via a downlink transmission beam from the base station during a first transmission time interval (TTI);
means for determining, based at least in part on the first set of beamforming parameters and a second set of beamforming parameters, a priority order associated with the downlink transmission and a control resource set of the first TTI; and
means for receiving, based at least in part on the priority order, at least one of the downlink transmission using the first set of beamforming parameters or the control resource set using the second set of beamforming parameters.

37. The apparatus of claim 36, further comprising:
means for determining that the control resource set is to be monitored during at least a portion of the first TTI using the second set of beamforming parameters.

38. The apparatus of claim 36, wherein the means for receiving at least one of the downlink transmission or the control resource set further comprises:
means for ignoring the downlink grant and receiving the control resource set based at least in part on the priority order.

39. The apparatus of claim 36, further comprising:
means for determining the priority order based at least in part on a radio network temporary identifier (RNTI) that is monitored by the UE.

40. The apparatus of claim 36, further comprising:
means for determining the priority order based at least in part on at least one of one or more downlink resources for the downlink transmission and at least one of one or more downlink resources of the control resource set residing within a same orthogonal frequency division multiplexing (OFDM) symbol.

41. The apparatus of claim 36, wherein the priority order indicates that the control resource set has a higher priority than the downlink transmission.

42. The apparatus of claim 41, wherein the priority order indicates that the control resource set has the higher priority based at least in part on a quality of service (QoS) associated with the control resource set having a higher priority than the downlink transmission, and wherein the QoS associated with the control resource set is an ultra-reliable low latency communication (URLLC) QoS, and wherein a QoS associated with the downlink transmission has a lower priority than the URLLC QoS.

43. The apparatus of claim 36, further comprising:
means for determining that the first set of beamforming parameters or the second set of beamforming parameters are to be used for spatial receive beam filtering.

44. The apparatus of claim 36, further comprising:
means for determining whether the downlink transmission is rate-matched around the control resource set.

45. The apparatus of claim 44, further comprising:
means for monitoring the control resource set using the first set of beamforming parameters when the downlink transmission is determined to be rate-matched around the control resource set; and
means for receiving the downlink transmission using the first set of beamforming parameters.

46. The apparatus of claim 36, wherein the means for receiving at least one of the downlink transmission or the control resource set further comprises:

means for identifying a subset of resources within the first TTI that are configured for transmitting the control resource set; and

means for receiving the downlink transmission during the first TTI using the subset of resources that are configured for transmitting the control resource set.

47. The apparatus of claim 36, further comprising:

means for identifying two or more different control resource sets configured by the base station, each of the two or more different control resource sets having a different priority in the priority order.

48. The apparatus of claim 47, wherein a first control resource set of the two or more different control resource sets corresponds to transmissions of an ultra-reliable low latency communication (URLLC) service and has a higher priority than the downlink transmission, and a second control resource set of the two or more different control resource sets corresponds to transmissions of an enhanced mobile broadband (eMBB) service and has a lower priority than the downlink transmission.

49. The apparatus of claim 36, further comprising:

means for identifying an aperiodic channel state information reference signal (CSI-RS) configuration within the first TTI with a third set of beamforming parameters;

means for disregarding the aperiodic CSI-RS configuration; and

means for receiving the downlink transmission using the first set of beamforming parameters during the first TTI.

50. The apparatus of claim 36, further comprising:

means for identifying a third set of beamforming parameters for monitoring a transmission beam that includes a remaining system information (RMSI) control resource set; and

means for monitoring for the downlink transmission using the third set of beamforming parameters when a search space for the RMSI control resource set overlaps with the first TTI.

51. An apparatus for wireless communication, comprising:

means for transmitting a downlink grant to a user equipment (UE), the downlink grant indicating a first set of beamforming parameters to be used by the UE for receiving a downlink transmission via a downlink transmission beam during a first transmission time interval (TTI);

means for determining, based at least in part on the first set of beamforming parameters and a second set of beamforming parameters, a priority order associated with the downlink transmission and a control resource set of the first TTI; and

means for transmitting, based at least in part on the priority order, at least one of the downlink transmission using the first set of beamforming parameters or the control resource set using the second set of beamforming parameters.

52. The apparatus of claim 51, further comprising:

means for determining that the control resource set is to be transmitted during at least a portion of the first TTI using the second set of beamforming parameters.

53. The apparatus of claim 51, wherein the means for transmitting at least one of the downlink transmission or the control resource set further comprises:

means for skipping transmission of the control resource set and transmitting the downlink transmission using resources within the first TTI that are configured for transmitting the control resource set based at least in part on the priority order.

54. The apparatus of claim 51, further comprising:

means for determining the priority order based at least in part on a radio network temporary identifier (RNTI) that is to be monitored by the UE.

55. The apparatus of claim 51, further comprising:

means for determining the priority order based at least in part on at least one of one or more downlink resources for the downlink transmission and at least one of one or more downlink resources of the control resource set residing within a same orthogonal frequency division multiplexing (OFDM) symbol.

56. The apparatus of claim 51, wherein the priority order indicates that the control resource set has a higher priority than the downlink transmission.

57. The apparatus of claim 56, wherein the priority order indicates that the control resource set has the higher priority based at least in part on a quality of service (QoS)

associated with the control resource set having a higher priority than the downlink transmission, and wherein the QoS associated with the control resource set is an ultra-reliable low latency communication (URLLC) QoS, and wherein a QoS associated with the downlink transmission has a lower priority than the URLLC QoS.

58. The apparatus of claim 51, wherein the priority order indicates which of the first set of beamforming parameters or the second set of beamforming parameters are to be used for spatial receive beam filtering.

59. The apparatus of claim 51, wherein the priority order indicates whether the downlink transmission is to be rate-matched around the control resource set.

60. The apparatus of claim 59, further comprising:
means for transmitting the control resource set using the first set of beamforming parameters when the downlink transmission is rate-matched around the control resource set.

61. The apparatus of claim 51, further comprising:
means for skipping transmission of the control resource set; and
means for transmitting the downlink transmission using resources within the first TTI that are configured for transmitting the control resource set.

62. The apparatus of claim 51, further comprising:
means for skipping the downlink transmission and transmitting the control resource set when a QoS associated with the control resource set has a higher priority than the downlink transmission.

63. The apparatus of claim 51, further comprising:
means for identifying two or more different control resource sets having a different priority in the priority order.

64. The apparatus of claim 63, wherein a first control resource set of the two or more different control resource sets corresponds to transmissions of an ultra-reliable low latency communication (URLLC) service and has a higher priority than the downlink transmission, and a second control resource set of the two or more different control resource

sets corresponds to transmissions of an enhanced mobile broadband (eMBB) service and has a lower priority than the downlink transmission.

65. The apparatus of claim 51, further comprising:
means for identifying an aperiodic channel state information reference signal (CSI-RS) configuration within the first TTI with a third set of beamforming parameters;
means for disregarding the aperiodic CSI-RS configuration; and
means for transmitting the downlink transmission using the first set of beamforming parameters during the first TTI.

66. The apparatus of claim 51, further comprising:
means for identifying a third set of beamforming parameters for a transmission beam that includes a remaining system information (RMSI) control resource set; and
means for transmitting the downlink transmission using the third set of beamforming parameters when a search space for the RMSI control resource set overlaps with the first TTI.

67. An apparatus for wireless communication, comprising:
a processor;
memory in electronic communication with the processor; and
instructions stored in the memory and executable by the processor to cause the apparatus to:

receive, at a user equipment (UE), a downlink grant from a base station, the downlink grant indicating a first set of beamforming parameters to be used by the UE for receiving a downlink transmission via a downlink transmission beam from the base station during a first transmission time interval (TTI);

determine, based at least in part on the first set of beamforming parameters and a second set of beamforming parameters, a priority order associated with the downlink transmission and a control resource set of the first TTI; and

receive, based at least in part on the priority order, at least one of the downlink transmission using the first set of beamforming parameters or the control resource set using the second set of beamforming parameters.

68. An apparatus for wireless communication, comprising:

a processor;
memory in electronic communication with the processor; and
instructions stored in the memory and executable by the processor to cause the apparatus to:

transmit a downlink grant to a user equipment (UE), the downlink grant indicating a first set of beamforming parameters to be used by the UE for receiving a downlink transmission via a downlink transmission beam during a first transmission time interval (TTI);

determine, based at least in part on the first set of beamforming parameters and a second set of beamforming parameters, a priority order associated with the downlink transmission and a control resource set of the first TTI; and

transmit, based at least in part on the priority order, at least one of the downlink transmission using the first set of beamforming parameters or the control resource set using the second set of beamforming parameters.