CLAIMS

1. A method for wireless communication at a user equipment (UE), comprising:

receiving a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

identifying a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

determining that downlink control information of the first downlink control message comprises a first resource indication value for the first transmission reception point and that downlink control information of the second downlink control message comprises a second resource indication value for the second transmission reception point, wherein determining the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and determining the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

determining, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point;

identifying a first resource of a first resource group associated with the first resource indication value and a second resource of a second resource group associated with the second resource indication value; and

transmitting, based at least in part on the first resource of the first resource group and the second resource of the second resource group, a first uplink control message and a second uplink control message.

2. The method of claim 1, wherein the first uplink control message comprises a first hybrid automatic repeat request payload and the second uplink control message comprises a second hybrid automatic repeat request payload.

3. The method of claim 1, wherein:

identifying the first resource group is based at least in part on a bit included in the first resource indication value; and

wherein identifying the second resource group is based at least in part on a bit included in the second resource indication value.

4. The method of claim 1, further comprising:

identifying a first set of time and frequency resources in the first resource group based at least in part on one or more additional bits included in the first resource indication value; and

identifying a second set of time and frequency resources in the second resource group based at least in part on one or more additional bits included in the second resource indication value.

5. The method of claim 4, wherein the first set of time and frequency resources comprises resources in a first slot of the first uplink control message and the second set of time and frequency resources comprises resources in a second slot of the second uplink control message.

6. The method of claim 4, wherein the first set of time and frequency resources comprises resources in a first set of orthogonal frequency division multiplexed symbols in a slot of the first uplink control message and the second set of time and frequency resources comprises resources in a second set of orthogonal frequency division multiplexed symbols in the slot of the second uplink control message.

7. The method of claim 4, wherein the first set of time and frequency resources comprises a first set of resource blocks within an orthogonal frequency division multiplexed symbol and the second set of time and frequency resources comprises a second set of resource blocks within the orthogonal frequency division multiplexed symbol, the first set of resource blocks frequency division multiplexed with the second set of resource blocks.

8. The method of claim 4, wherein the first set of time and frequency resources corresponds to a first antenna array configuration of the UE and the second set of time and frequency resources corresponds to a second antenna array configuration of the UE.

9. The method of claim 1, wherein the first uplink control message is transmitted to the first transmission reception point on a first beam and the second uplink control message is transmitted to the second transmission reception point on a second beam.

10. The method of claim 9, wherein the transmitting further comprises:

determining a first activated beam index corresponding to the first beam based at least in part on the first resource indication value; and

determining a second activated beam index corresponding to the second beam based at least in part on the second resource indication value.

11. The method of claim 10, wherein the first activated beam index is associated with the first resource group or an element of the first resource group and the second activated beam index is associated with the second resource group or an element of the second resource group.

12. The method of claim 10, wherein the first activated beam index is included in a first set of beam indices configured by radio resource control and the second activated beam index is included in a second set of beam indices, different from the first set of beam indices, and configured by radio resource control.

13. The method of claim 1, wherein the first resource indication value comprises a first physical uplink control channel resource indication index value and the second resource indication value comprises a second physical uplink control channel resource indication index value.

14. A method for wireless communication at a user equipment (UE), comprising:

receiving a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point,

wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

identifying a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

identifying that downlink control information of the first downlink control message comprises a first resource indication value and that downlink control information of the second downlink control message comprises a second resource indication value, wherein identifying the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and identifying the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

determining, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point; and

transmitting, based at least in part on the first resource indication value and the second resource indication value, a first uplink control message and a second uplink control message.

15. The method of claim 14, wherein the first uplink control message comprises a first hybrid automatic repeat request payload and the second uplink control message comprises a second hybrid automatic repeat request payload.

16. The method of claim 14, further comprising:

receiving a first indication in the downlink control information of the first downlink control message and a second indication in the downlink control information of the second downlink control message; and

wherein the determining is based at least in part on the first indication or the second indication.

17. The method of claim 16, wherein the first indication comprises an explicit or implicit indication and the second indication comprises an explicit or implicit indication.

18. The method of claim 14, further comprising:

identifying a first resource group in the first uplink control message based at least in part on the determining, the first resource group associated with the first transmission reception point; and

identifying a second resource group in the second uplink control message based at least in part on the determining, the second resource group associated with the second transmission reception point.

19. The method of claim 14, further comprising:

identifying a first set of time and frequency resources based at least in part on the first resource indication value, the first set of time and frequency resources included in a first resource group; and

identifying a second set of time and frequency resources based at least in part on the second resource indication value, the second set of time and frequency resources included in a second resource group.

20. The method of claim 19, wherein the first set of time and frequency resources comprises resources in a first slot of the first uplink control message and the second set of time and frequency resources comprises resources in a second slot of the second uplink control message.

21. The method of claim 19, wherein the first set of time and frequency resources comprises resources in a first set of orthogonal frequency division multiplexed symbols in a slot of the first uplink control message and the second set of time and frequency resources comprises resources in a second set of orthogonal frequency division multiplexed symbols in the slot of the second uplink control message.

22. The method of claim 19, wherein the first set of time and frequency resources comprises a first set of resource blocks within an orthogonal frequency division multiplexed symbol and the second set of time and frequency resources comprises a second set

of resource blocks within the orthogonal frequency division multiplexed symbol, the first set of resource blocks frequency division multiplexed with the second set of resource blocks.

23. The method of claim 19, wherein the first set of time and frequency resources corresponds to a first antenna array configuration of the UE and the second set of time and frequency resources corresponds to a second antenna array configuration of the UE.

24. The method of claim 14, wherein the first uplink control message is transmitted to the first transmission reception point on a first beam and the second uplink control message is transmitted to the second transmission reception point on a second beam.

25. The method of claim 24, wherein the transmitting further comprises:

determining a first activated beam index corresponding to the first beam based at least in part on the first resource indication value; and

determining a second activated beam index corresponding to the second beam based at least in part on the second resource indication value.

26. The method of claim 25, wherein the first activated beam index is included in a first set of beam indices configured by radio resource control and the second activated beam index is included in a second set of beam indices, different from the first set of beam indices, and configured by radio resource control.

27. The method of claim 14, wherein the first resource indication value comprises a first physical uplink control channel resource indication index value and the second resource indication value comprises a second physical uplink control channel resource indication index value.

28. A method for wireless communication at a user equipment (UE), comprising:

receiving a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point;

receiving a radio resource control message comprising an indication of semi-static coordination and a splitting of resources between the first transmission reception point and the second transmission reception point;

determining, based at least in part on the indication, a first configured resource set for the first transmission reception point and a second configured resource set for the second transmission reception point;

determining that downlink control information of the first downlink control message is associated with the first transmission reception point and that downlink control information of the second downlink control message is associated with the second transmission reception point;

identifying a first index value in the downlink control information of the first downlink control message and a second index value in the downlink control information of the second downlink control message; and

transmitting a first uplink control message based at least in part on the first index value and the first configured resource set, and a second uplink control message based at least in part on the second index value and the second configured resource set.

29. The method of claim 28, wherein the first uplink control message comprises a first hybrid automatic repeat request payload and the second uplink control message comprises a second hybrid automatic repeat request payload.

30. The method of claim 28, wherein the first configured resource set comprises a first set of time and frequency resources associated with the first transmission reception point and the second configured resource set comprises a second set of time and frequency resources, different from the first set of time and frequency resources, and associated with the second transmission reception point.

31. The method of claim 28, further comprising:

receiving a first indication in the downlink control information of the first downlink control message and a second indication in the downlink control information of the second downlink control message; and

wherein determining that the downlink control information of the first downlink control message is associated with the first transmission reception point and that the downlink control information of the second downlink control message is associated with the second transmission reception point is based at least in part on the first indication or the second indication.

32. The method of claim 31, wherein the first indication comprises an explicit or implicit indication and the second indication comprises an explicit or implicit indication.

33. The method of claim 28, wherein the identifying further comprises:

identifying a first set of time and frequency resources in the first uplink control message based at least in part on the first index value; and

identifying a second set of time and frequency resources in the second uplink control message based at least in part on the second index value.

34. The method of claim 33, wherein the first set of time and frequency resources comprises resources in a first slot of the first uplink control message and the second set of time and frequency resources comprises resources in a second slot of the second uplink control message.

35. The method of claim 33, wherein the first set of time and frequency resources comprises resources in a first set of orthogonal frequency division multiplexed symbols in a slot of the first uplink control message and the second set of time and frequency resources comprises resources in a second set of orthogonal frequency division multiplexed symbols, different from the first set of orthogonal frequency division multiplexed symbols, in the slot of the second uplink control message.

36. The method of claim 28, wherein the first uplink control message is transmitted to the first transmission reception point on a first beam and the second uplink control message is transmitted to the second transmission reception point on a second beam.

37. The method of claim 36, wherein the transmitting further comprises:

determining a first activated beam index corresponding to the first beam, the first activated beam index included in a set of beam indices configured by a radio resource control configuration; and

determining a second activated beam index corresponding to the second beam, the second activated beam index included in the set of beam indices.

38. The method of claim 37, wherein:

determining the first activated beam index is based at least in part on a first resource indication value for uplink control transmission in the downlink control information of the first downlink control message; and

wherein determining the second activated beam index is based at least in part on a second resource indication value for uplink control transmission in the downlink control information of the second downlink control message.

39. The method of claim 37, wherein:

determining the first activated beam index is based at least in part on the determining that downlink control information of the first downlink control message is associated with the first transmission reception point; and

wherein determining the second activated beam index is based at least in part on the determining that downlink control information of the second downlink control message is associated with the second transmission reception point.

40. The method of claim 37, wherein:

determining the first activated beam index is based at least in part on the first index value; and

wherein determining the second activated beam index is based at least in part on the second index value.

41. The method of claim 28, wherein the first index value comprises a first feedback timing indicator value from a first configured or default set of feedback timing indicator values and the second index value comprises a second feedback timing indicator value from a second configured or default set of feedback timing indicator values.

42. The method of claim 41, wherein the first configured or default set of feedback timing indicator values includes at least one feedback timing indicator value different from the second configured or default set of feedback timing indicator values.

43. An apparatus for wireless communication at a user equipment (UE), comprising:

a processor,

memory coupled to the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

receive a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

identify a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

determine that downlink control information of the first downlink control message comprises a first resource indication value for the first transmission reception point and that downlink control information of the second downlink control message comprises a second resource indication value for the second transmission reception point, wherein determining the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and determining the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

determine, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point;

identify a first resource of a first resource group associated with the first resource indication value and a second resource of a second resource group associated with the second resource indication value; and

transmit, based at least in part on the first resource of the first resource group and the second resource of the second resource group, a first uplink control message and a second uplink control message.

44. An apparatus for wireless communication at a user equipment (UE), comprising:

a processor,

memory coupled to the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

receive a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

identify a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

identify that downlink control information of the first downlink control message comprises a first resource indication value and that downlink control information of the second downlink control message comprises a second resource indication value, wherein identifying the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and identifying the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

determine, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point; and

transmit, based at least in part on the first resource indication value and the second resource indication value, a first uplink control message and a second uplink control message.

45. An apparatus for wireless communication at a user equipment (UE), comprising:

a processor,

memory coupled to the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

receive a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point;

receive a radio resource control message comprising an indication of semi-static coordination and a splitting of resources between the first transmission reception point and the second transmission reception point;

determine, based at least in part on the indication, a first configured resource set for the first transmission reception point and a second configured resource set for the second transmission reception point;

determine that downlink control information of the first downlink control message is associated with the first transmission reception point and that downlink control information of the second downlink control message is associated with the second transmission reception point;

identify a first index value in the downlink control information of the first downlink control message and a second index value in the downlink control information of the second downlink control message; and

transmit a first uplink control message based at least in part on the first index value and the first configured resource set, and a second uplink control message based at least in part on the second index value and the second configured resource set.

46. An apparatus for wireless communication at a user equipment (UE), comprising:

means for receiving a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

means for identifying a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

means for determining that downlink control information of the first downlink control message comprises a first resource indication value for the first transmission reception point and that downlink control information of the second downlink control message comprises a second resource indication value for the second transmission reception point, wherein determining the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and determining the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

means for determining, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point;

means for identifying a first resource of a first resource group associated with the first resource indication value and a second resource of a second resource group associated with the second resource indication value; and

means for transmitting, based at least in part on the first resource of the first resource group and the second resource of the second resource group, a first uplink control message and a second uplink control message.

47. An apparatus for wireless communication at a user equipment (UE), comprising:

means for receiving a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

means for identifying a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

means for identifying that downlink control information of the first downlink control message comprises a first resource indication value and that downlink control information of the second downlink control message comprises a second resource indication value, wherein identifying the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and identifying the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

means for determining, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point; and

means for transmitting, based at least in part on the first resource indication value and the second resource indication value, a first uplink control message and a second uplink control message.

48. An apparatus for wireless communication at a user equipment (UE), comprising:

means for receiving a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point;

means for receiving a radio resource control message comprising an indication of semi-static coordination and a splitting of resources between the first transmission reception point and the second transmission reception point;

means for determining, based at least in part on the indication, a first configured resource set for the first transmission reception point and a second configured resource set for the second transmission reception point;

means for determining that downlink control information of the first downlink control message is associated with the first transmission reception point and that downlink control information of the second downlink control message is associated with the second transmission reception point;

means for identifying a first index value in the downlink control information of the first downlink control message and a second index value in the downlink control information of the second downlink control message; and

means for transmitting a first uplink control message based at least in part on the first index value and the first configured resource set, and a second uplink control message based at least in part on the second index value and the second configured resource set.

49. A non-transitory computer-readable medium storing code for wireless communication at a user equipment (UE), the code comprising instructions executable by a processor to:

receive a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

identify a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

determine that downlink control information of the first downlink control message comprises a first resource indication value for the first transmission reception point and that downlink control information of the second downlink control message comprises a second resource indication value for the second transmission reception point, wherein determining the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and determining the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

determine, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point;

identify a first resource of a first resource group associated with the first resource indication value and a second resource of a second resource group associated with the second resource indication value; and

transmit, based at least in part on the first resource of the first resource group and the second resource of the second resource group, a first uplink control message and a second uplink control message.

50. A non-transitory computer-readable medium storing code for wireless communication at a user equipment (UE), the code comprising instructions executable by a processor to:

receive a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point, wherein at least one of the first downlink control message or the second downlink control message comprises two or more downlink control message transmissions;

identify a last downlink control information transmission of the first downlink control message and a last downlink control information transmission of the second downlink control message;

identify that downlink control information of the first downlink control message comprises a first resource indication value and that downlink control information of the second downlink control message comprises a second resource indication value, wherein identifying the first resource indication value is based at least in part on identifying the last downlink control information transmission of the first downlink control message and identifying the second resource indication value is based at least in part on identifying the last downlink control information transmission of the second downlink control message;

determine, based at least in part on the first resource indication value and the second resource indication value, that the downlink control information of the first downlink control message is associated with the first transmission reception point and the downlink control information of the second downlink control message is associated with the second transmission reception point; and

transmit, based at least in part on the first resource indication value and the second resource indication value, a first uplink control message and a second uplink control message.

51. A non-transitory computer-readable medium storing code for wireless communication at a user equipment (UE), the code comprising instructions executable by a processor to:

receive a first downlink control message from a first transmission reception point and a second downlink control message from a second transmission reception point;

receive a radio resource control message comprising an indication of semi-static coordination and a splitting of resources between the first transmission reception point and the second transmission reception point;

determine, based at least in part on the indication, a first configured resource set for the first transmission reception point and a second configured resource set for the second transmission reception point;

determine that downlink control information of the first downlink control message is associated with the first transmission reception point and that downlink control information of the second downlink control message is associated with the second transmission reception point;

identify a first index value in the downlink control information of the first downlink control message and a second index value in the downlink control information of the second downlink control message; and

transmit a first uplink control message based at least in part on the first index value and the first configured resource set, and a second uplink control message based at least in part on the second index value and the second configured resource set.