CLAIMS

1. A method of wireless communication, comprising: indicating, to an access point, a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; receiving, from the access point and based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more types of reference signals defining the number of active spatial relations; and detecting, based on the one or more configurations, one or more of the reference signals received from the access point.

2. The method of claim 1, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

3. The method of claim 1, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

4. The method of claim 3, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

5. The method of claim 4, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

6. The method of claim 3, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

7. The method of claim 6, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

8. The method of claim 1, further comprising transmitting, to the access point, uplink communications using a beam based at least in part on the one or more of the reference signals.

9. A method of wireless communication, comprising: receiving, from a user equipment (UE), a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; generating, based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more configurations to indicate one or more types of reference signals defining the number of active spatial relations; and transmitting the one or more configurations to the UE.

10. The method of claim 9, further comprising transmitting, based on the one or more configurations, one or more of the reference signals to the UE.

11. The method of claim 9, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

12. The method of claim 9, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

13. The method of claim 12, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

14. The method of claim 13, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

15. The method of claim 12, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

16. The method of claim 15, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

17. An apparatus for wireless communication, comprising: a transceiver; a memory configured to store instructions; and one or more processors communicatively coupled with the transceiver and the memory, wherein the one or more processors are configured to: indicate, to an access point, a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; receive, from the access point and based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more configurations indicate one or more types of reference signals defining the number of active spatial relations; and detect, based on the one or more configurations, one or more of the reference signals received from the access point.

18. The apparatus of claim 17, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

19. The apparatus of claim 17, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

20. The apparatus of claim 19, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

21. The apparatus of claim 20, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

22. The apparatus of claim 19, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

23. The apparatus of claim 22, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

24. The apparatus of any of claim 17, wherein the one or more processors are further configured to transmit, to the access point, uplink communications using a beam based at least in part on the one or more of the reference signals.

25. An apparatus for wireless communication, comprising: a transceiver; a memory configured to store instructions; and one or more processors communicatively coupled with the transceiver and the memory, wherein the one or more processors are configured to: receive, from a user equipment (UE), a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; generate, based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more types of reference signals defining the number of active spatial relations; and transmit the one or more configurations to the UE.

26. The apparatus of claim 25, wherein the one or more processors are further configured to transmit, based on the one or more configurations, one or more of the reference signals to the UE.

27. The apparatus of claim 26, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

28. The apparatus of claim 26, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

29. The apparatus of claim 28, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

30. The apparatus of claim 29, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

31. The apparatus of claim 28, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

32. The apparatus of claim 31, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

33. An apparatus for wireless communication, comprising: means for indicating, to an access point, a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; means for receiving, from the access point and based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more types of reference signals defining the number of active spatial relations; and means for detecting, based on the one or more configurations, one or more of the reference signals received from the access point.

34. The apparatus of claim 33, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

35. The apparatus of claim 33, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

36. The apparatus of claim 35, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

37. The apparatus of claim 36, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

38. The apparatus of claim 35, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

39. The apparatus of claim 38, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

40. The apparatus of claim 33, further comprising means for transmitting, to the access point, uplink communications using a beam based at least in part on the one or more of the reference signals.

41. An apparatus for wireless communication, comprising: means for receiving, from a user equipment (UE), a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; means for generating, based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more types of reference signals defining the number of active spatial relations; and means for transmitting the one or more configurations to the UE.

42. The apparatus of claim 41, further comprising means for transmitting, based on the one or more configurations, one or more of the reference signals to the UE.

43. The apparatus of claim 41, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

44. The apparatus of claim 41, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

45. The apparatus of claim 44, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

46. The apparatus of claim 45, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

47. The apparatus of claim 44, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

48. The apparatus of claim 47, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

49. A non-transitory computer-readable medium, comprising code executable by one or more processors for wireless communication, the code comprising code for: indicating, to an access point, a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; receiving, from the access point and based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more types of reference signals defining the number of active spatial relations; and detecting, based on the one or more configurations, one or more of the reference signals received from the access point.

50. The computer-readable medium of claim 49, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

51. The computer-readable medium of claim 49, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

52. The computer-readable medium of claim 51, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

53. The computer-readable medium of claim 52, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

54. The computer-readable medium of claim 51, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

55. The computer-readable medium of claim 54, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.

56. The computer-readable medium of any of claim 49, further comprising code for transmitting, to the access point, uplink communications using a beam based at least in part on the one or more of the reference signals.

57. A non-transitory computer-readable medium, comprising code executable by one or more processors for wireless communication, the code comprising code for: receiving, from a user equipment (UE), a capability indicating a number of active spatial relations supported for detecting downlink reference signals or generating uplink beams; generating, based on the capability, one or more configurations of spatial relations indicating (i) a transmit filter of reference signals for use in transmitting uplink communications and (ii) one or more types of reference signals defining the number of active spatial relations; and transmitting the one or more configurations to the UE.

58. The computer-readable medium of claim 57, further comprising code for transmitting, based on the one or more configurations, one or more of the reference signals to the UE.

59. The computer-readable medium of claim 57, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or

more distinct TCI states is less than or equal to the number of active spatial relations indicated in the capability.

60. The computer-readable medium of claim 57, wherein the one or more types of reference signals include one or more distinct transmission configuration indicator (TCI) states of one or more aperiodic channel state information reference signals, and wherein a count of the one or more distinct TCI states added to a second count of other reference signals in the one or more configurations is less than or equal to the number of active spatial relations indicated in the capability.

61. The computer-readable medium of claim 60, wherein the other reference signals include one or more downlink reference signals that are not aperiodic channel state information reference signals.

62. The computer-readable medium of claim 61, wherein the other reference signals also include one or more sounding reference signals that are not configured with the one or more downlink reference signals.

63. The computer-readable medium of claim 60, wherein the one or more distinct TCI states are indicated or down-selected in one or more media access control (MAC) control elements (CEs).

64. The computer-readable medium of claim 63, wherein the one or more distinct TCI states are associated with a distinct TCI identifier or a distinct quasi-colocation (QCL) type.