CLAIMS

1. A method for wireless communication by a first wireless device, comprising: detecting occurrence of a triggering event corresponding to a change of at least one beam correspondence state of the first wireless device, the triggering event based on one or more of a change of an angle of arrival of at least one reference signal or a change, by the first wireless device, of an antenna selected for reception; and based on the detecting the occurrence of the triggering event: determining one or more beam correspondence states for one or more beams or portions of beams the first wireless device is able to use for communication; and transmitting one or more indications of the one or more beam correspondence states to a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the first wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the first wireless device is able to use for communication.

2. The method of claim 1, wherein the first wireless device comprises a user equipment (UE) and the second wireless device comprises a base station (BS).

3. The method of claim 1, wherein: the triggering event is further based on a change in an associated set of reference beams received from the second wireless device and measured by the first wireless device.

4. The method of claim 3, wherein the one or more beams comprise the associated set of reference beams.

5. The method of claim 1, further comprising: determining the one or more beam correspondence states based on the antenna selected at the first wireless device for reception.

6. The method of claim 1, wherein: the one or more indications are included in an uplink (UL) signaling message.

7. The method of claim 6, wherein: the UL signaling message is carried by one of a radio resource control (RRC) message or a media access control (MAC) control element (CE).

8. The method of claim 1, wherein: the one or more indications consist of one indication of a single beam correspondence state applicable to a plurality of beams comprising the one or more beams.

9. The method of claim 1, wherein: the one or more indications consist of an indication of a single beam correspondence state and of an associated set of reference beams.

10. The method of claim 1, wherein: the one or more indications indicate a plurality of beam correspondence states and an associated set of references beams for each of the plurality of beam correspondence states.

11. The method of claim 10, wherein the plurality of beam correspondence states comprises: a first beam correspondence state that indicates the first wireless device has the capability of beam correspondence over a first set of one or more beams that is associated with reception of a set of downlink (DL) reference signals; and a second beam correspondence state that

indicates the first wireless device does not have the capability of beam correspondence over a second set of one or more beams that is associated with reception of the set of DL reference signals.

12. The method of claim 1, wherein transmitting the one or more indications of the one or more beam correspondence states comprises: for each candidate downlink (DL) reference signal reported in a beam measurement report, including an indication of a corresponding beam correspondence state of a receive (RX) beam used for reception of the candidate DL reference signal in the beam measurement report.

13. The method of claim 12, further comprising: determining the one or more beam correspondence states based on the angle of arrival of the at least one reference signal.

14. The method of claim 1, further comprising transmitting a second indication to the second wireless device, the second indication indicating a type of beam correspondence state reporting supported by the first wireless device of a plurality of types of beam correspondence state reporting.

15. The method of claim 1, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

16. A first wireless device, comprising: a memory; and a processor coupled to the memory, the memory and the processor being configured to: detect occurrence of a triggering event corresponding to a change of at least one beam correspondence state of the first wireless device, the triggering event based on one or more of a change of an angle of arrival of at least one reference signal or a change, by the first wireless device, of an antenna selected for reception; and based on the detecting the occurrence of the triggering event: determine one or more beam correspondence states for one or more beams or portions of beams the first wireless device is able to use for communication; and transmit one or more indications of the one or more beam correspondence states to a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the first wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the first wireless device is able to use for communication.

17. The first wireless device of claim 16, wherein the first wireless device comprises a user equipment (UE) and the second wireless device comprises a base station (BS).

18. The first wireless device of claim 16, wherein: the triggering event is further based on a change in an associated set of reference beams received from the second wireless device and measured by the first wireless device.

19. The first wireless device of claim 18, wherein the one or more beams comprise the associated set of reference beams.

20. The first wireless device of claim 16, further comprising a plurality of antennas including the antenna, wherein the memory and the processor are further configured to: determine the one or more beam correspondence states based on the antenna selected at the first wireless device for reception.

21. The first wireless device of claim 16, wherein: the one or more indications are included in an uplink (UL) signaling message.

22. The first wireless device of claim 21, wherein: the UL signaling message is carried by one of a radio resource control (RRC) message or a media access control (MAC) control element (CE).

23. The first wireless device of claim 16, wherein: the one or more indications consist of one indication of a single beam correspondence state applicable to a plurality of beams comprising the one or more beams.

24. The first wireless device of claim 16, wherein: the one or more indications consist of an indication of a single beam correspondence state and of an associated set of reference beams.

25. The first wireless device of claim 16, wherein: the one or more indications indicate a plurality of beam correspondence states and an associated set of references beams for each of the plurality of beam correspondence states.

26. The first wireless device of claim 25, wherein the plurality of beam correspondence states comprises: a first beam correspondence state that indicates the first wireless device has the capability of beam correspondence over a first set of one or more beams that is associated with reception of a set of downlink (DL) reference signals; and a second beam correspondence state that indicates the first wireless device does not have the capability of beam correspondence over a second set of one or more beams that is associated with reception of the set of DL reference signals.

27. The first wireless device of claim 16, wherein the memory and the processor, being configured to transmit the one or more indications of the one or more beam correspondence states, are further configured to: for each candidate downlink (DL) reference signal reported in a beam measurement report, include an indication of a corresponding beam correspondence state of a receive (RX) beam used for reception of the candidate DL reference signal in the beam measurement report.

28. The first wireless device of claim 27, wherein the memory and the processor are further configured to: determine the one or more beam correspondence states based on the angle of arrival of the at least one reference signal.

29. The first wireless device of claim 16, wherein the memory and the processor are further configured to transmit a second indication to the second wireless device, the second indication indicating a type of beam correspondence state reporting supported by the first wireless device of a plurality of types of beam correspondence state reporting.

30. The first wireless device of claim 16, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

31. A first wireless device, comprising: means for detecting occurrence of a triggering event corresponding to a change of at least one beam correspondence state of the first wireless device, the triggering event based on one or more of a change of an angle of arrival of at least one reference signal or a change, by the first wireless device, of an antenna selected for reception; and means for, based on the detecting the occurrence of the triggering event,

determining one or more beam correspondence states for one or more beams or portions of beams the first wireless device is able to use for communication; and means for, based on the detecting the occurrence of the triggering event, transmitting one or more indications of the one or more beam correspondence states to a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the first wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the first wireless device is able to use for communication.

32. The first wireless device of claim 31, wherein: the triggering event is further based on a change in an associated set of reference beams received from the second wireless device and measured by the first wireless device.

33. The first wireless device of claim 31, further comprising: means for determining the one or more beam correspondence states based on the antenna selected at the first wireless device for reception.

34. A non-transitory computer readable medium having instructions stored thereon that, when executed by a first wireless device, cause the first wireless device to perform operations comprising: detecting occurrence of a triggering event corresponding to a change of at least one beam correspondence state of the first wireless device, the triggering event based on one or more of a change of an angle of arrival of at least one reference signal or a change, by the first wireless device, of an antenna selected for reception; and based on the detecting the occurrence of the triggering event: determining one or more beam correspondence states for one or more beams or portions of beams the first wireless device is able to use for communication; and transmitting one or more indications of the one or more beam correspondence states to a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the first wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the first wireless device is able to use for communication.

35. The non-transitory computer readable medium of claim 34, wherein: the triggering event is further based on a change in an associated set of reference beams received from the second wireless device and measured by the first wireless device.

36. The non-transitory computer readable medium of claim 34, wherein the operations further comprise: determining the one or more beam correspondence states based on the antenna selected at the first wireless device for reception.

37. A method for wireless communication by a first wireless device, comprising: receiving one or more indications of one or more beam correspondence states for one or more beams or portions of beams from a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the second wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the second wireless device is able to use for communication, the one or more indications indicating one or more first beams without beam correspondence and one or more second beams with beam correspondence; and selecting an approach for beam management for the second wireless device based on the received one or more indications.

38. The method of claim 37, wherein the approach indicates to perform beam sweeping for the one or more first beams without beam correspondence and to use a corresponding beam for the one or more second beams with beam correspondence.

39. The method of claim 37, wherein the first wireless device comprises a base station (BS) and the second wireless device comprises a user equipment (UE).

40. The method of claim 37, wherein: the one or more indications are included in an uplink (UL) signaling message.

41. The method of claim 40, wherein: the UL signaling message is carried by one of a radio resource control (RRC) message or a media access control (MAC) control element (CE).

42. The method of claim 37, wherein: the one or more indications indicate a plurality of beam correspondence states and an associated set of references beams for each of the plurality of beam correspondence states.

43. The method of claim 42, wherein the plurality of beam correspondence states comprises: a first beam correspondence state that indicates the second wireless device has the capability of beam correspondence over the one or more second beams that are associated with reception of a set of downlink (DL) reference signals; and a second beam correspondence state that indicates the second wireless device does not have the capability of beam correspondence over the one or more first beams that are associated with reception of the set of DL reference signals.

44. The method of claim 37, wherein receiving the one or more indications of the one or more beam correspondence states comprises: for each candidate downlink (DL) reference signal reported in a received beam measurement report, receiving an indication of a corresponding beam correspondence state of a receive (RX) beam used for reception of the candidate DL reference signal in the beam measurement report.

45. The method of claim 37, further comprising receiving a second indication from the second wireless device, the second indication indicating a type of beam correspondence state reporting supported by the second wireless device of a plurality of types of beam correspondence state reporting.

46. The method of claim 37, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

47. The method of claim 37, wherein selecting the approach comprises: selecting the approach to be used until another one or more indications of the one or more beam correspondence states are received from the second wireless device.

48. The method of claim 37, wherein the approach comprises at least one of: indicating a first transmit beam of the second wireless device to be used for uplink transmission that can be determined from a downlink (DL) reference signal based on the one or more indications; or configuring an uplink beam sweeping procedure to be performed by the second wireless device.

49. A first wireless device, comprising: a memory; and a processor coupled to the memory, the memory and the processor being configured to: receive one or more indications of one or more beam correspondence states for one or more beams or portions of beams from a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the second wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the second wireless device is able to use for communication, the one or more indications indicating one or more first beams without beam correspondence and one or more second beams with beam correspondence; and select an approach for beam management for the second wireless device based on the received one or more indications.

50. The first wireless device of claim 49, further comprising a transceiver, wherein the approach indicates to perform beam sweeping for the one or more first beams without beam correspondence and to use a corresponding beam for the one or more second beams with beam correspondence.

51. The first wireless device of claim 49, wherein the first wireless device comprises a base station (BS) and the second wireless device comprises a user equipment (UE).

52. The first wireless device of claim 49, wherein: the one or more indications are included in an uplink (UL) signaling message.

53. The first wireless device of claim 52, wherein: the UL signaling message is carried by one of a radio resource control (RRC) message or a media access control (MAC) control element (CE).

54. The first wireless device of claim 49, wherein: the one or more indications indicate a plurality of beam correspondence states and an associated set of references beams for each of the plurality of beam correspondence states.

55. The first wireless device of claim 54, wherein the plurality of beam correspondence states comprises: a first beam correspondence state that indicates the second wireless device has the capability of beam correspondence over the one or more second beams that are associated with reception of a set of downlink (DL) reference signals; and a second beam correspondence state that indicates the second wireless device does not have the capability of beam correspondence over the one or more first beams that are associated with reception of the set of DL reference signals.

56. The first wireless device of claim 49, wherein the memory and the processor, being configured to receive the one or more indications of the one or more beam correspondence states, are further configured to: for each candidate downlink (DL) reference signal reported in a received beam measurement report, receive an indication of a corresponding beam correspondence state of a receive (RX) beam used for reception of the candidate DL reference signal in the beam measurement report.

57. The first wireless device of claim 49, wherein the memory and the processor are further configured to receive a second indication from the second wireless device, the second indication indicating a type of beam correspondence state reporting supported by the second wireless device of a plurality of types of beam correspondence state reporting.

58. The first wireless device of claim 49, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

59. The first wireless device of claim 49, wherein the memory and the processor, being configured to select the approach, are further configured to: select the approach to be used until another one or more indications of the one or more beam correspondence states are received from the second wireless device.

60. The first wireless device of claim 49, wherein the approach comprises at least one of: indicating a first transmit beam of the second wireless device to be used for uplink transmission that can be determined from a downlink (DL) reference signal based on the one or more indications; or configuring an uplink beam sweeping procedure to be performed by the second wireless device.

61. A first wireless device, comprising: means for receiving one or more indications of one or more beam correspondence states for one or more beams or portions of beams from a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the second wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the second wireless device is able to use for communication, the one or more indications indicating one or more first beams without beam correspondence and one or more second beams with beam correspondence; and means for selecting an approach for beam management for the second wireless device based on the received one or more indications.

62. The first wireless device of claim 61, wherein the approach indicates to perform beam sweeping for the one or more first beams without beam correspondence and to use a corresponding beam for the one or more second beams with beam correspondence.

63. A non-transitory computer readable medium having instructions stored thereon that, when executed by a first wireless device, cause the first wireless device to perform operations comprising: receiving one or more indications of one or more beam correspondence states for one or more beams or portions of beams from a second wireless device, wherein the one or more indications of the one or more beam correspondence states indicate whether the second wireless device has a capability of beam correspondence between the one or more beams and corresponding one or more transmit or receive beams the second wireless device is able to use for communication, the one or more indications indicating one or more first beams without beam correspondence and one or more second beams with beam correspondence; and selecting an approach for beam management for the second wireless device based on the received one or more indications.

64. The non-transitory computer readable medium of claim 63, wherein the approach indicates to perform beam sweeping for the one or more first beams without beam correspondence and to use a corresponding beam for the one or more second beams with beam correspondence.

65. A method for wireless communication by a first wireless device, comprising: generating at least one indication of at least one beam correspondence state and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams the first wireless device is able to use for communication; and transmitting the at least one indication to a second wireless device, wherein the at least one indication of the at least one beam correspondence state indicates: the first wireless device has a capability

of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the first wireless device is able to use for communication; and the first wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the first wireless device is able to use for communication.

66. The method of claim 65, wherein the first wireless device comprises a user equipment (UE) and the second wireless device comprises a base station (BS).

67. The method of claim 65, wherein the first subset has the capability to receive a first associated set of reference signals, and wherein the at least one indication comprises an indication of the associated set of reference signals.

68. The method of claim 65, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

69. A first wireless device, comprising: a memory; and a processor coupled to the memory, the memory and the processor being configured to: generate at least one indication of at least one beam correspondence state and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams the first wireless device is able to use for communication; and transmit the at least one indication to a second wireless device, wherein the at least one indication of the at least one beam correspondence state indicates: the first wireless device has a capability of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the first wireless device is able to use for communication; and the first wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the first wireless device is able to use for communication.

70. The first wireless device of claim 69, wherein the first wireless device comprises a user equipment (UE) and the second wireless device comprises a base station (BS).

71. The first wireless device of claim 69, further comprising a transceiver, wherein the first subset has the capability to receive a first associated set of reference signals, and wherein the at least one indication comprises an indication of the associated set of reference signals.

72. The first wireless device of claim 69, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

73. A first wireless device, comprising: means for generating at least one indication of at least one beam correspondence state and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams the first wireless device is able to use for communication; and means for transmitting the at least one indication to a second wireless device, wherein the at least one indication of the at least one beam correspondence state indicates: the first wireless device has a capability of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the first wireless device is able to use for communication; and the first wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the first wireless device is able to use for communication.

74. A non-transitory computer readable medium having instructions stored thereon that, when executed by a first wireless device, cause the first wireless device to perform operations comprising: generating at least one indication of at least one beam correspondence state and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams the first wireless device is able to use for communication; and transmitting the at least one indication to a second wireless device, wherein the at least one indication of the at least one beam correspondence state indicates: the first wireless device has a capability of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the first wireless device is able to use for communication; and the first wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the first wireless device is able to use for communication.

75. A method for wireless communication by a first wireless device, comprising: receiving, from a second wireless device, at least one indication of at least one beam correspondence state of the second wireless device and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams, wherein the at least one indication of the at least one beam correspondence state indicates: the second wireless device has a capability of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the second wireless device is able to use for communication; and the second wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the second wireless device is able to use for communication; and selecting an approach for beam management based on the at least one indication of the at least one beam correspondence state.

76. The method of claim 75, wherein the first wireless device comprises a base station (BS) and the second wireless device comprises a user equipment (UE).

77. The method of claim 75, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

78. The method of claim 75, wherein the first subset has the capability to receive a first associated set of reference signals, and wherein the at least one indication comprises an indication of the associated set of reference signals.

79. The method of claim 75, wherein selecting the approach comprises: selecting the approach to be used until another at least one indication of the at least one beam correspondence state is received from the second wireless device.

80. The method of claim 75, wherein the approach comprises at least one of: indicating a first transmit beam of the second wireless device to be used for uplink transmission that can be determined from a downlink (DL) reference signal based on the indication; or configuring an uplink beam sweeping procedure to be performed by the second wireless device.

81. A first wireless device, comprising: a memory; and a processor coupled to the memory, the memory and the processor being configured to: receive, from a second wireless device, at least one indication of at least one beam correspondence state of the second wireless device and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams, wherein the at least one indication of the at least one beam correspondence state indicates: the second wireless device has a capability of beam

correspondence between the first subset and corresponding one or more first transmit or receive beams the second wireless device is able to use for communication; and the second wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the second wireless device is able to use for communication; and select an approach for beam management based on the at least one indication of the at least one beam correspondence state.

82. The first wireless device of claim 81, wherein the first wireless device comprises a base station (BS) and the second wireless device comprises a user equipment (UE).

83. The first wireless device of claim 81, wherein the first wireless device is a mobile telecommunication (MT) function of an integrated access and backhaul (IAB)-node.

84. The first wireless device of claim 81, wherein the first subset has the capability to receive a first associated set of reference signals, and wherein the at least one indication comprises an indication of the associated set of reference signals.

85. The first wireless device of claim 81, further comprising a transceiver, wherein the memory and the processor, being configured to select the approach, are further configured to: select the approach to be used until another at least one indication of the at least one beam correspondence state is received from the second wireless device.

86. The first wireless device of claim 81, wherein the approach comprises at least one of: indicating a first transmit beam of the second wireless device to be used for uplink transmission that can be determined from a downlink (DL) reference signal based on the indication; or configuring an uplink beam sweeping procedure to be performed by the second wireless device.

87. A first wireless device, comprising: means for receiving, from a second wireless device, at least one indication of at least one beam correspondence state of the second wireless device and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams, wherein the at least one indication of the at least one beam correspondence state indicates: the second wireless device has a capability of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the second wireless device is able to use for communication; and the second wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the second wireless device is able to use for communication; and means for selecting an approach for beam management based on the at least one indication of the at least one beam correspondence state.

88. The first wireless device of claim 87, wherein the approach comprises at least one of: indicating a first transmit beam of the second wireless device to be used for uplink transmission that can be determined from a downlink (DL) reference signal based on the indication; or configuring an uplink beam sweeping procedure to be performed by the second wireless device.

89. A non-transitory computer readable medium having instructions stored thereon that, when executed by a first wireless device, cause the first wireless device to perform operations comprising: receiving, from a second wireless device, at least one indication of at least one

beam correspondence state of the second wireless device and additional information indicating at least one of a first subset of a plurality of beams and a second subset of the plurality of beams, wherein the at least one indication of the at least one beam correspondence state indicates: the second wireless device has a capability of beam correspondence between the first subset and corresponding one or more first transmit or receive beams the second wireless device is able to use for communication; and the second wireless device does not have the capability of beam correspondence between the second subset and corresponding one or more second transmit or receive beams the second wireless device is able to use for communication; and selecting an approach for beam management based on the at least one indication of the at least one beam correspondence state.

90. The non-transitory computer readable medium of claim 89, wherein the approach comprises at least one of: indicating a first transmit beam of the second wireless device to be used for uplink transmission that can be determined from a downlink (DL) reference signal based on the indication; or configuring an uplink beam sweeping procedure to be performed by the second wireless device.