CLAIMS

~~What is claimed is:~~

1. A method, performed by a wireless device, comprising:

receiving~~, by a wireless device,~~ one or more configuration parameters, of a target cell, indicating:

a cell index of a reference cell; and

transmission configuration indicator, ~~(~~TCI,~~)~~ states of the reference cell for the wireless device to use for downlink receptions via the target cell; ~~and~~

receiving, via the target cell, a downlink signal based on a TCI state of the TCI states of the reference cell;

receiving a control command indicating deactivation of the reference cell; and

deactivating the target cell in response to the reference cell being deactivated.

~~2. A method comprising:~~

~~receiving, by a wireless device, one or more configuration parameters, of a target cell, indicating transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell; and~~

~~in response to the reference cell being deactivated, deactivating the target cell.~~

~~3.~~2. The method of claim ~~2~~1, wherein the one or more configuration parameters further comprise at least one of:

~~a~~ the cell index of the reference cell; ~~and~~or

a bandwidth part, ~~(~~BWP~~)~~, index of the reference cell.

~~4.~~3. The method of any one of claims ~~2~~ 1 to ~~3~~2, wherein the one or more configuration parameters further indicate that no secondary cell deactivation timer is configured for the reference cell.

~~5.~~4. The method of any one of claims ~~2~~ 1 to ~~4~~3, wherein the one or more configuration parameters further indicate that no secondary cell deactivation timer is configured for the reference cell based on the wireless device being configured with the ~~transmission configuration indicator (~~TCI~~)~~ states of the reference cell.

~~6. The method of any one of claims 2 to 5, further comprising receiving, by the target cell, a downlink signal based on a TCI state of the TCI states of the reference cell.~~

~~7. The method of any one of claims 2 to 6, further comprising receiving a control command indicating deactivation of the reference cell.~~

~~8.~~5. The method of any one of claims ~~2~~ 1 to ~~7~~4, further comprising determining that the reference cell is deactivated based on a deactivation timer of the reference cell being expired.

~~9.~~6. The method of any one of claims ~~2~~ 1 to ~~8~~5, wherein the reference cell is deactivated based on at least one of:

expiration of a deactivation timer of the reference cell; or

receiving a command indicating deactivation of the reference cell.

10.7. The method of any one of claims 2 1 to 96, wherein the one or more configuration parameters are a part of a physical downlink shared channel, (PDSCH,) configuration.

11.8. A wireless device comprising:

one or more processors; and

a memory storing instructions that, when executed by the one or more processors, cause the wireless device to perform the method of any one of claims 1 to 107.

12.9. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 1 to 107.

13.10. A method performed by a base station, comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters, of a target cell, indicating:

a cell index of the reference cell; and

transmission configuration indicator, (TCI,) states of the reference cell for the wireless device to use for downlink receptions via the target cell; and

transmitting, to the wireless device via the target cell, a downlink signal based on a TCI state of the TCI states of the reference cell;

transmitting, to the wireless device, a control command indicating deactivation of the reference cell; and

deactivating the target cell in response to the reference cell being deactivated.

14. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters, of a target cell, indicating transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell; and

in response to the reference cell being deactivated, deactivating the target cell.

15.11. A base station (1504) comprising:

one or more processors; and

a memory storing instructions that, when executed by the one or more processors, cause the base station to perform the method of claim 10any one of claims 13 to 14.

16.12. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 13 to 14claim 10.

17. A system comprising:

a base station comprising one or more first processors and first memory storing instructions that, when executed by the one or more first processors, cause the base station to:

transmit one or more configuration parameters, of a target cell, indicating transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell; and

in response to the reference cell being deactivated, deactivate the target cell; and

a wireless device comprising one or more second processors and second memory storing instructions that, when executed by the one or more second processors, cause the base station to:

receive, from the base station, the one or more configuration parameters; and

in response to the reference cell being deactivated, deactivate the target cell.

18. A method comprising:

receiving, by a wireless device, one or more configuration parameters, of a target cell, indicating:

transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell;

a cell index of the reference cell;

a first deactivation timer for the target cell; and

a second deactivation timer for the reference cell;

restarting the first deactivation timer of the target cell; and

restarting the second deactivation timer of the reference cell in response to restarting the first deactivation timer of the target cell.

19. A method comprising:

receiving, by a wireless device, one or more configuration parameters, of a target cell, indicating transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell; and

in response to restarting a first deactivation timer of the target cell, restarting a second deactivation timer of the reference cell.

20. The method of claim 19, wherein the one or more configuration parameters further indicate at least one of:

a cell index of the reference cell;

a bandwidth part (BWP) of the reference cell;

the first deactivation timer for the target cell; and

the second deactivation timer for the reference cell.

21. The method of any one of claims 19 to 20, further comprising restarting the first deactivation timer of the target cell.

22. The method of any one of claims 19 to 21, wherein:

the first deactivation timer is a second cell (SCell) deactivation timer; and

the second deactivation timer is an SCell deactivation timer.

23. The method of any one of claims 19 to 22, wherein:

the first deactivation timer is a first bandwidth part (BWP) deactivation timer of the target cell; and

the second deactivation timer is a second BWP deactivation timer of the reference cell.

24. The method of any one of claims 19 to 23, wherein the restarting the first timer is based on receiving a downlink control information (DCI) indicating:

a downlink assignment for the target cell; or

an uplink grant for the target cell.

25. The method of any one of claims 19 to 24, wherein the restarting the first timer is based on receiving a DCI indicating:

a downlink assignment; or

an uplink grant.

26. The method of any one of claims 19 to 25, wherein the restarting the first timer is based on receiving a MAC PDU for a configured downlink assignment.

27. The method of any one of claims 19 to 26, wherein the restarting the first timer is based on transmitting a MAC PDU for a configured uplink grant.

28. The method of any one of claims 19 to 27, wherein the one or more configuration parameters are a part of a physical downlink shared channel (PDSCH) configuration.

29. A wireless device comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the wireless device to perform the method of any one of claims 18 to 28.

30. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 18 to 28.

31. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters, of a target cell, indicating:

transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell;

a cell index of the reference cell;

a first deactivation timer for the target cell; and

a second deactivation timer for the reference cell;

restarting the first deactivation timer of the target cell; and

restarting the second deactivation timer of the reference cell in response to restarting the first deactivation timer of the target cell.

32. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters, of a target cell, indicating transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell; and

in response to restarting a first deactivation timer of the target cell, restarting a second deactivation timer of the reference cell.

33. A base station comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the base station to perform the method of any one of claims 31 to 32.

34. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 31 to 32.

35. A system comprising:

a base station comprising one or more first processors and first memory storing instructions that, when executed by the one or more first processors, cause the base station to:

transmit one or more configuration parameters, of a target cell, indicating transmission configuration indicator (TCI) states of a reference cell for the wireless device to use for downlink receptions via the target cell; and

in response to restarting a first deactivation timer of the target cell, restart a second deactivation timer of the reference cell; and

a wireless device comprising one or more second processors and second memory storing instructions that, when executed by the one or more second processors, cause the base station to:

receive, from the base station, the one or more configuration parameters; and

in response to restarting the first deactivation timer of the target cell, restart the second deactivation timer of the reference cell.

36. A method comprising:

receiving, by a wireless device, one or more configuration parameters of a target bandwidth part (BWP) of a target cell, wherein the one or more configuration parameters comprise:

a BWP index indicating a reference BWP; and

a cell index indicating a reference cell;

receiving, via the target BWP of the target cell, a downlink signal based on a transmission configuration indicator (TCI) state of the reference BWP of the reference cell;

switching from the reference BWP to a second BWP of the reference cell as an active BWP of the reference cell; and

based on the switching, switching from the target BWP to a third BWP of the target cell as an active BWP of the target cell.

37. A method comprising:

receiving, by a wireless device, one or more configuration parameters, of a target cell, indicating a reference cell; and

in response to switching a first active BWP of the reference cell from a first BWP to a second BWP, switching a second active BWP of the target cell from a third BWP to a fourth BWP.

38. The method of claim 37, wherein the one or more configuration parameters comprise at least one of:

a cell index indicating the reference cell; and

a BWP index indicating the first BWP of the reference cell.

39. The method of any one of claims 37 to 38, further comprising receiving, via the second BWP of the target cell, a downlink signal based on a transmission configuration indicator (TCI) state of the first BWP of the reference cell.

40. The method of any one of claims 37 to 39, further comprising switching from the first BWP to a second BWP of the reference cell as an active BWP of the reference cell.

41. The method of any one of claims 37 to 40, wherein:

the first BWP is a reference BWP; and

the third BWP is a target BWP.

42. The method of any one of claims 39 to 41, wherein:

the one or more configuration parameters further indicate one or more TCI states for the first BWP of the reference cell; and

the one or more TCI states comprise the TCI state.

43. The method of any one of claims 37 to 42, wherein the one or more configuration parameters further indicate one or more TCI states for the first BWP of the reference cell.

44. The method of any one of claims 37 to 43, wherein the one or more configuration parameters comprise one or more physical downlink shared channel (PDSCH) configuration parameters comprising:

a BWP index indicating the first BWP; and

a cell index indicating the reference cell.

45. The method of claim 44, wherein the configuration parameters comprise PDSCH configuration parameters indicating one or more transmission configuration indicator (TCI) states for the first BWP of the reference cell.

46. The method of any one of claims 42 to 45, wherein the one or more TCI states are one or more joint TCI states.

47. The method of any one of claims 42 to 45, wherein the one or more TCI states are one or more downlink TCI states.

48. The method of any one of claims 37 to 47, wherein:

the first BWP is a first downlink BWP; and

the third BWP is a third downlink BWP.

49. The method of any one of claims 39 to 48, wherein the downlink signal is at least one of:

a reference signal;

a PDSCH transmission; or

a downlink control information (DCI).

50. The method of any one of claims 39 to 49, wherein at least one demodulation reference signal (DM-RS) antenna port of the downlink signal is quasi co-located with a reference signal indicated by the TCI state.

51. The method of any one of claims 37 to 50, wherein the switching to the fourth BWP is further based on the second BWP of the reference cell being a reference BWP for the fourth BWP of the target cell.

52. The method of any one of claims 37 to 51, wherein the switching to the second BWP is in response to at least one of:

receiving a downlink control information (DCI) indicating the second BWP for the reference cell;

expiration of a BWP inactivity timer of the reference cell;

initiating a random-access procedure for the reference cell; or

receiving a radio resource control (RRC) message indicating the second BWP for the reference cell as the active BWP.

53. The method of any one of claims 37 to 52, wherein the one or more configuration parameters indicate no TCI state for the third BWP of the target cell.

54. The method of any one of claims 37 to 53, wherein:

the first BWP is a first uplink BWP of the reference cell;

the second BWP is a second uplink BWP of the reference cell;

the third BWP is a third uplink BWP of the target cell; and

the fourth BWP is a fourth uplink BWP of the target cell.

55. The method of any one of claims 37 to 54, further comprising transmitting, via the second BWP of the target cell, an uplink signal based on a transmission configuration indicator (TCI) state of the first BWP of the reference cell.

56. The method of claim 55, wherein the uplink signal is at least one of:

a sounding reference signal (SRS);

a physical uplink shared channel (PUSCH) transmission; or

a physical uplink control channel (PUCCH) transmission.

57. The method of any one of claims 55 to 56, wherein the transmitting the uplink signal is with a spatial domain transmission filter determined based on the TCI state.

58. The method of any one of claims 55 to 57, wherein the transmitting the uplink signal is with a transmission power determined based on the TCI state.

59. The method of any one of claims 37 to 58, wherein the one or more configuration parameters are a part of a physical downlink shared channel (PDSCH) configuration.

60. A wireless device comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the wireless device to perform the method of any one of claims 36 to 59.

61. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 36 to 59.

62. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters of a target bandwidth part (BWP) of a target cell, wherein the one or more configuration parameters comprise:

a BWP index indicating a reference BWP; and

a cell index indicating a reference cell;

transmitting, to the wireless device via the target BWP of the target cell, a downlink signal based on a transmission configuration indicator (TCI) state of the reference BWP of the reference cell;

switching from the reference BWP to a second BWP of the reference cell as an active BWP of the reference cell; and

based on the switching, switching from the target BWP to a third BWP of the target cell as an active BWP of the target cell.

63. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters, of a target cell, indicating a reference cell; and

in response to switching a first active BWP of the reference cell from a first BWP to a second BWP, switching a second active BWP of the target cell from a third BWP to a fourth BWP.

64. A base station comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the base station to perform the method of any one of claims 62 to 63.

65. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 62 to 63.

66. A system comprising:

a base station comprising one or more first processors and first memory storing instructions that, when executed by the one or more first processors, cause the base station to:

transmit one or more configuration parameters, of a target cell, indicating a reference cell; and

in response to switching a first active BWP of the reference cell from a first BWP to a second BWP, switch a second active BWP of the target cell from a third BWP to a fourth BWP; and

a wireless device comprising one or more second processors and second memory storing instructions that, when executed by the one or more second processors, cause the base station to:

receive, from the base station, one or more configuration parameters, of the target cell, indicating the reference cell; and

in response to switching the first active BWP of the reference cell from the first BWP to the second BWP, switch the second active BWP of the target cell from the third BWP to the fourth BWP.

67. A method comprising:

receiving, by a wireless device, one or more configuration parameters indicating:

an uplink bandwidth part (BWP) index indicating a reference uplink BWP and a cell index indicating a reference cell for a target uplink BWP of a target cell;

one or more uplink transmission configuration indicator (TCI) states for the reference uplink BWP;

a downlink BWP index indicating a reference downlink BWP and the cell index indicating the reference cell for a target downlink BWP of the target cell; and

one or more downlink TCI states for the reference downlink BWP;

based on the one or more configuration parameters indicating the reference uplink BWP of the reference cell for the target uplink BWP of the target cell, transmitting, via the target uplink BWP of the target cell, an uplink signal using an uplink TCI state of the one or more uplink TCI states of the reference uplink BWP of the reference cell; and

based on the one or more configuration parameters indicating the reference downlink BWP of the reference cell for the target downlink BWP of the target cell, receiving, via the target downlink BWP of the target cell, a downlink signal using a downlink TCI state of the one or more downlink TCI states of the reference downlink BWP of the reference cell.

68. A method comprising:

receiving, by a wireless device, one or more configuration parameters indicating:

an uplink reference bandwidth part (BWP), of a reference cell, for a target uplink BWP of a target cell; and

a downlink reference BWP, of the reference cell, for a target downlink BWP of the target cell;

transmitting an uplink signal using an uplink transmission configuration indicator (TCI) state of the one or more uplink TCI states of the reference uplink BWP; and

receiving a downlink signal using a downlink TCI state of the one or more downlink TCI states of the reference downlink BWP.

69. The method of claim 68, wherein:

the transmitting the uplink signal is based on the one or more configuration parameters indicating the reference uplink BWP for the target uplink BWP; and

the receiving the downlink signal is based on the one or more configuration parameters indicating the reference downlink BWP for the target downlink BWP.

70. The method of any one of claims 68 to 69, wherein the one or more configuration parameters are of the target cell.

71. The method of any one of claims 68 to 70, wherein the one or more configuration parameters further comprise at least one of:

a cell index indicating the reference cell for the target cell;

an uplink BWP index indicating the reference uplink BWP for the target uplink BWP;

an uplink BWP index indicating the reference uplink BWP for the target downlink BWP;

the one or more uplink TCI states for the reference uplink BWP; or

the one or more downlink TCI states for the reference downlink BWP.

72. The method of any one of claims 68 to 71, wherein:

the transmitting is via the target uplink BWP of the target cell; and

the receiving is via the target downlink BWP of the target cell.

73. The method of any one of claims 68 to 72, wherein:

the one or more configuration parameters comprise one or more first physical downlink shared channel (PDSCH) configuration parameters of the reference downlink BWP of the reference cell.

74. The method of any one of claims 71 to 73, wherein:

the one or more configuration parameters comprise one or more first physical downlink shared channel (PDSCH) configuration parameters of the reference downlink BWP of the reference cell; and

the one or more first PDSCH configuration parameters indicate the one or more downlink TCI states.

75. The method of any one of claims 68 to 74, wherein:

the one or more configuration parameters comprise one or more second physical downlink shared channel (PDSCH) configuration parameters of the target downlink BWP of the target cell; and

the one or more second PDSCH configuration parameters indicate:

a BWP index indicating the reference BWP; and

a cell index indicating the reference cell.

76. A wireless device comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the wireless device to perform the method of any one of claims 67 to 77.

77. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 67 to 77.

78. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters indicating:

an uplink bandwidth part (BWP) index indicating a reference uplink BWP and a cell index indicating a reference cell for a target uplink BWP of a target cell;

one or more uplink transmission configuration indicator (TCI) states for the reference uplink BWP;

a downlink BWP index indicating a reference downlink BWP and the cell index indicating the reference cell for a target downlink BWP of the target cell; and

one or more downlink TCI states for the reference downlink BWP;

based on the one or more configuration parameters indicating the reference uplink BWP of the reference cell for the target uplink BWP of the target cell, receiving, from the wireless device via the target uplink BWP of the target cell, an uplink signal based on an uplink TCI state of the one or more uplink TCI states of the reference uplink BWP of the reference cell; and

based on the one or more configuration parameters indicating the reference downlink BWP of the reference cell for the target downlink BWP of the target cell, transmitting, to the wireless device via the target downlink BWP of the target cell, a downlink signal based on a downlink TCI state of the one or more downlink TCI states of the reference downlink BWP of the reference cell.

79. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters indicating:

an uplink reference bandwidth part (BWP), of a reference cell, for a target uplink BWP of a target cell; and

a downlink reference BWP, of the reference cell, for a target downlink BWP of the target cell;

receiving, from the wireless device, an uplink signal using an uplink transmission configuration indicator (TCI) state of the one or more uplink TCI states of the reference uplink BWP; and

transmitting, to the wireless device, a downlink signal using a downlink TCI state of the one or more downlink TCI states of the reference downlink BWP.

80. A base station comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the base station to perform the method of any one of claims 79 or 80.

81. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 79 or 80.

82. A system comprising:

a base station comprising one or more first processors and first memory storing instructions that, when executed by the one or more first processors, cause the base station to:

transmit one or more configuration parameters indicating:

an uplink reference bandwidth part (BWP), of a reference cell, for a target uplink BWP of a target cell; and

a downlink reference BWP, of the reference cell, for a target downlink BWP of the target cell; and

a wireless device comprising one or more second processors and second memory storing instructions that, when executed by the one or more second processors, cause the base station to:

receive, from the base station, the one or more configuration parameters;

transmit, to the base station, an uplink signal using an uplink transmission configuration indicator (TCI) state of the one or more uplink TCI states of the reference uplink BWP; and

receive, from the base station, a downlink signal using a downlink TCI state of the one or more downlink TCI states of the reference downlink BWP.

83. A method comprising:

receiving, by a wireless device, one or more configuration parameters of a target bandwidth part (BWP) of a target cell;

based on the one or more configuration parameters not indicating a reference BWP of a reference cell for the target BWP of the target cell, determining a default BWP of a default cell; and

receiving, via the target BWP of the target cell, a downlink signal based on a transmission configuration indicator (TCI) state of the default reference BWP of the default reference cell.

84. A method comprising:

receiving, by a wireless device, one or more configuration parameters of a target bandwidth part (BWP) of a target cell; and

in response to the one or more configuration parameters not indicating a reference BWP of a reference cell for the target BWP of the target cell, transmitting or receiving, via the target BWP of the target cell, a signal based on a transmission configuration indicator (TCI) state of a default BWP of a default reference cell.

85. The method of claim 84, further comprising determining the default BWP of the default BWP in response to the one or more configuration parameters not indicating a reference BWP of a reference cell for the target BWP of the target cell.

86. The method of any one of claims 84 to 85, wherein:

the signal is a downlink signal; and

the transmitting or receiving is receiving.

87. The method of any one of claims 84 to 86, wherein:

the signal is an uplink signal; and

the transmitting or receiving is transmitting.

88. The method of any one of claims 84 to 87, wherein the one or more configuration parameters indicate, for the default reference cell, a cell index that is lowest, or highest, among one or more cell indexes of one or more cells.

89. The method of claim 88, wherein:

the one or more configuration parameters indicate, for the one or more cells, the one or more cell indexes; and

each cell of the one or more cells is identified with a respective cell index of the one or more cell indexes.

90. The method of any one of claims 88 to 89, wherein the one or more configuration parameters indicate, for each cell of the one or more cells, at least one TCI state.

91. The method of any one of claims 84 to 90, wherein the default reference BWP is an active BWP of the default reference cell.

92. The method of any one of claims 84 to 91, wherein the one or more configuration parameters indicate, for the default reference BWP, a BWP index that is lowest, or highest, among one or more BWP indexes of one or more BWPs of the default reference cell.

93. The method of claim 92, wherein:

the one or more configuration parameters indicate, for the one or more BWPs, the one or more BWP indexes;

each BWP of the one or more BWPs is identified with a respective BWP index of the one or more BWP indexes.

94. A wireless device comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the wireless device to perform the method of any one of claims 83 to 93.

95. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 83 to 93.

96. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters of a target bandwidth part (BWP) of a target cell;

based on the one or more configuration parameters not indicating a reference BWP of a reference cell for the target BWP of the target cell, determining a default BWP of a default cell; and

transmitting, to the wireless device via the target BWP of the target cell, a downlink signal based on a transmission configuration indicator (TCI) state of the default reference BWP of the default reference cell.

97. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters of a target bandwidth part (BWP) of a target cell; and

in response to the one or more configuration parameters not indicating a reference BWP of a reference cell for the target BWP of the target cell, transmitting or receiving, to or from the wireless device via the target BWP of the target cell, a signal based on a transmission guration indicator (TCI) state of a default BWP of a default reference cell.

98. A base station comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the base station to perform the method of any one of claims 96 or 97.

99. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 96 or 97.

100. A system comprising:

a base station comprising one or more first processors and first memory storing instructions that, when executed by the one or more first processors, cause the base station to:

transmit one or more configuration parameters of a target bandwidth part (BWP) of a target cell; and

in response to the one or more configuration parameters not indicating a reference BWP of a reference cell for the target BWP of the target cell, transmit or receive, to or from the wireless device via the target BWP of the target cell, a signal based on a transmission configuration indicator (TCI) state of a default BWP of a default reference cell; and

a wireless device comprising one or more second processors and second memory storing instructions that, when executed by the one or more second processors, cause the base station to:

receive, from the base station, the one or more configuration parameters; and

in response to the one or more configuration parameters not indicating a reference BWP of the reference cell for the target BWP of the target cell, transmit or receive, to or from the base station via the target BWP of the target cell, the signal based on the TCI state of the default BWP of the default reference cell.

101. A method comprising:

receiving, by a wireless device, one or more messages comprising one or more configuration parameters, wherein the one or more configuration parameters indicate:

a reference bandwidth part (BWP) of a reference cell for a target BWP of a target cell;

one or more transmission configuration indicator (TCI) states for the reference BWP of the reference cell; and

receiving an activation command comprising:

a TCI state index;

a control resource set (coreset) index; and

a serving cell index identifying the target cell; and

applying a TCI state, among the one or more TCI states of the reference BWP, identified by the TCI state index to a coreset, of the target BWP, identified by the coreset index.

102. A method comprising:

receiving, by a wireless device, one or more configuration parameters indicating a reference bandwidth part (BWP) of a reference cell for a target BWP of a target cell; and

applying a transmission configuration indicator (TCI) state, among one or more TCI states of the reference BWP, to a control resource set (coreset) of the target BWP.

103. The method of claim 102, wherein the one or more configuration parameters further indicate the one or more TCI states for the reference BWP of the reference cell.

104. The method of any one of claims 102 to 103, further comprising receiving an activation command comprising at least one of:

a TCI state index associated with the TCI state;

a control resource set (coreset) index of the coreset; and

a serving cell index identifying the target cell.

105. The method of any one of claims 102 to 104, wherein:

the TCI state is identified by an activation command; and

the coreset is identified by the activation command.

106. The method of any one of claims 102 to 105, wherein the one or more configuration parameters do not indicate any TCI states for the target BWP of the target cell.

107. The method of any one of claims 102 to 106, wherein:

the one or more configuration parameters comprise one or more physical downlink shared channel (PDSCH) configuration parameters of the reference BWP of the reference cell; and

the one or more PDSCH configuration parameters indicate the one or more TCI states.

108. The method of any one of claims 102 to 107, wherein:

the one or more configuration parameters comprise one or more one or more physical downlink shared channel (PDSCH) configuration parameters of the target BWP of the target cell; and

the one or more PDSCH configuration parameters indicate the reference BWP of the reference cell.

109. The method of claim 107, wherein the one or more PDSCH configuration parameters comprise at least one of:

a BWP index of the reference BWP; and

a cell index of the reference cell.

110. The method of any one of claims 102 to 109, wherein the coreset index is not zero.

111. The method of any one of claims 102 to 110, wherein the applying the TCI state to the coreset comprises monitoring a physical downlink control channel (PDCCH), for a downlink control information (DCI), in the coreset based on the TCI state.

112. The method of claim 111, wherein at least one DMRS antenna port of the PDCCH carrying the DCI is quasi co-located with a reference signal indicated by the TCI state.

113. The method of any one of claims 102 to 112, further comprising receiving, via the coreset, a downlink control information (DCI) based on the TCI state.

114. The method of any one of claims 102 to 113, wherein the one or more configuration parameters indicate, for a second coreset of the reference BWP, at least one TCI state of the one or more TCI states.

115. The method of claim 114, further comprising:

receiving a second activation command comprising:

a second TCI state index;

a second coreset index; and

a second serving cell index identifying the reference cell;

applying a second TCI state, among the at least one TCI state of the second coreset, identified by the second TCI state index to the second coreset, of the reference BWP, identified by the second coreset index.

116. The method of any one of claims 114 to 115, wherein:

at least one TCI state of a second coreset in the reference BWP comprises the TCI state; and

the one or more configuration parameters indicate, for the second coreset, the at least one TCI state, wherein the one or more TCI states comprise the at least one TCI state.

117. The method of any one of claims 115 to 116, wherein a second coreset index of the second coreset is the same as the coreset index of the coreset.

118. The method of any one of claims 115 to 117, wherein a second coreset index of the second coreset is lowest, or highest, among one or more coreset indexes of one or more coresets in the reference BWP.

119. The method of any one of claims 115 to 118, wherein the second coreset is associated with at least one common search space set.

120. A wireless device comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the wireless device to perform the method of any one of claims any one of claims 101 to 119.

121. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 101 to 119.

122. A method comprising:

transmitting, by a base station to a wireless device, one or more messages comprising one or more configuration parameters, wherein the one or more configuration parameters indicate:

a reference bandwidth part (BWP) of a reference cell for a target BWP of a target cell;

one or more transmission configuration indicator (TCI) states for the reference BWP of the reference cell; and

transmitting an activation command comprising:

a TCI state index;

a control resource set (coreset) index; and

a serving cell index identifying the target cell; and

applying a TCI state, among the one or more TCI states of the reference BWP, identified by the TCI state index to a coreset, of the target BWP, identified by the coreset index.

123. A method comprising:

transmitting, by a base station to a wireless device, one or more configuration parameters indicating a reference bandwidth part (BWP) of a reference cell for a target BWP of a target cell; and

applying a transmission configuration indicator (TCI) state, among one or more TCI states of the reference BWP, to a control resource set (coreset) of the target BWP.

124. A base station comprising:

one or more processors; and

memory storing instructions that, when executed by the one or more processors, cause the base station to perform the method of any one of claims 122 or 123.

125. A non-transitory computer-readable medium comprising instructions that, when executed by one or more processors, cause the one or more processors to perform the method of any one of claims 122 or 123.

126. A system comprising:

a base station comprising one or more first processors and first memory storing instructions that, when executed by the one or more first processors, cause the base station to:

transmit one or more configuration parameters indicating a reference bandwidth part (BWP) of a reference cell for a target BWP of a target cell; and

apply a transmission configuration indicator (TCI) state, among one or more TCI states of the reference BWP, to a control resource set (coreset) of the target BWP; and

a wireless device comprising one or more second processors and second memory storing instructions that, when executed by the one or more second processors, cause the base station to:

receive, from the base station, the one or more configuration parameters; and

apply the TCI state, among the one or more TCI states of the reference BWP, to the coreset of the target BWP.