

CLAIMS

What is claimed is:

1. A computer-implemented method of dynamically configuring a wireless networking system, comprising:
 - 5 obtaining, for each of a plurality of antennas in the wireless networking system, topology information indicating whether and how the antenna is in reach of one or more other antennas in the plurality of antennas, the wireless networking system including two or more Wi-Fi transceivers coupled to each other in parallel, each of which is operable to be selectively coupled to one or more of the plurality of antennas by respective switches;
 - 10 determining, dependent on the obtained topology information, a desired configuration change for the wireless networking system, the desired configuration change including a change in which and how many of the plurality of antennas are coupled to the two or more Wi-Fi transceivers or a change in which or how many of the two or more Wi-Fi transceivers are active; and
 - 15 initiating the desired configuration change.
2. The method of claim 1, wherein initiating the desired configuration change comprises one or more of:
 - initiating an activation of a switch to couple one of the plurality of antennas to one of
 - 20 the two or more Wi-Fi transceivers; and
 - initiating a deactivation of a switch to decouple one of the plurality of antennas from one of the two or more Wi-Fi transceivers.
3. The method of claim 1, wherein initiating the desired configuration change
- 25 comprises one or more of:
 - initiating an activation of one of the two or more Wi-Fi transceivers; and
 - initiating a deactivation of one of the two or more Wi-Fi transceivers.
4. The method of claim 1, further comprising populating, for each of the plurality
- 30 of antennas, a respective neighborhood table with the obtained topology information.

5. The method of claim 1, wherein obtaining the topology information comprises using passive telemetry or active telemetry to obtain, during operation of the wireless networking system, the topology information or neighbor information from which the topology information is derived.

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6. The method of claim 5, wherein the obtained neighbor information includes a respective signal strength associated with a transmission in the wireless networking system.

7. The method of claim 1, wherein the obtained topology information applies to a combination of antennas from which a transmission is received or a combination of receiving antennas.

8. The method of claim 1, wherein obtaining the topology information comprises correlating transmissions of a transmitting wireless client device between two or more receiving wireless client devices.

9. The method of claim 1, wherein determining the desired configuration change is further dependent on a respective coverage pattern for wireless transmission and reception for one or more of the plurality of antennas.

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10. The method of claim 1, wherein determining the desired configuration change comprises determining a set of antennas that, when activated, create a coverage pattern over a collective coverage area that includes at least a desired coverage area.

11. The method of claim 10, further comprising automatically pruning or shaping the collective coverage area dependent on a cell location, a known interference pattern, or a known amount of directionality for an antenna.

12. The method of claim 1, wherein determining the desired configuration change is further dependent on at least one of: optimality, network needs, operator requests, wireless conditions, and client demand.

13. The method of claim 1, wherein:

the antennas coupled to each Wi-Fi transmitter represent a repeated collection of antenna elements each of which contributes to a default coverage pattern for the collection of antenna elements; and

5 determining the desired configuration change comprises determining a configuration change that results in a change to the coverage pattern for the antennas coupled to the one of the two or more Wi-Fi transceivers.

14. The method of claim 1, wherein:

10 the wireless networking system comprises at least one of:

a single networking line and a single power line; and

a combined power and networking distribution; and

the single networking line and the single power line or the combined power and networking distribution are arranged along a linear row and are coupled to each of the two or
15 more Wi-Fi transceivers.

15. The method of claim 1, wherein determining the desired configuration change comprises using a machine learning model that has been trained to produce a discriminator for evaluating proposed configurations for the wireless networking system.

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16. The method of claim 15, further comprising:

generating, by the machine learning model, one or more proposed configurations for the wireless networking system;

predicting a respective result of each of the proposed configurations; and

25 selecting, based on the predicting, one of the proposed configurations, the selected proposed configuration including the desired configuration change.

17. The method of claim 15, further comprising determining, by the machine learning model, a learned response indicating a significance of each of the plurality of antennas.

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18. The method of claim 15, wherein the machine learning model is trained using weighted configuration propositions produced by a telemetry process and a respective quality

measure associated with a region of the wireless networking system affected by each weighted configuration proposition.

19. The method of claim 1, wherein:

5 the method further comprises determining that a wireless client device should be handed off from one or more currently active antennas over which signals are transmitted or received on behalf of the wireless client device in a first coverage area;

determining the desired configuration change and initiating the desired configuration change are performed in response to determining that the wireless client device should be
10 handed off from the one or more currently active antennas; and

initiating the desired configuration change comprises deactivating at least one of the one or more currently active antennas and activating at least one alternate antenna having a second coverage area.

15 20. The method of claim 19, wherein determining that the wireless client device should be handed off from the one or more currently active antennas comprises determining that the wireless client device is approaching an edge of the first coverage area.

21. The method of claim 19, wherein:

20 the method further comprises obtaining, using passive telemetry or active telemetry and during operation of the wireless networking system, a measure of a signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver or a measure of a signal quality, error rate, or data rate associated with the wireless client device and a second Wi-Fi transceiver; and

25 determining that the wireless client device should be handed off from the one or more currently active antennas is dependent on the signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver, or the signal quality, error rate, or data rate associated with the wireless client device and the second Wi-Fi transceiver.

30 22. The method of claim 19, wherein:

determining the desired configuration comprises:

modifying a configuration proposition or a configuration proposition weighting;

and

initiating production of a new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting; and

the method further comprises generating the new configuration for the wireless
5 networking system dependent on the modified configuration proposition or configuration proposition weighting and one or more applicable configuration change constraints.

23. The method of claim 22, wherein the one or more applicable configuration change constraints include:

10 a constraint on a distance between the first coverage area and the second coverage area;
a requirement that the at least one alternate antenna is in a same coherent antenna set as the one or more currently active antennas; or

a requirement that the at least one alternate antenna represents a same subset of elements in a first instance of a repeated collection of antenna elements as a subset of elements
15 in a second instance of the repeated collection of antenna elements represented by the one or more currently active antennas.

24. One or more computer-readable non-transitory storage media storing one or more sequences of instructions which, when executed using one or more processors, cause the
20 one or more processors to:

obtain, for each of a plurality of antennas in a wireless networking system, topology information indicating whether and how the antenna is in reach of one or more other antennas in the plurality of antennas, the wireless networking system including two or more Wi-Fi transceivers coupled to each other in parallel, each of which is operable to be selectively
25 coupled to one or more of the plurality of antennas by respective switches;

determine, dependent on the obtained topology information, a desired configuration change for the wireless networking system, the desired configuration change including a change in which and how many of the plurality of antennas are coupled to the two or more Wi-Fi transceivers or a change in which or how many of the two or more Wi-Fi transceivers are
30 active; and

initiating the desired configuration change.

25. The media of claim 24, wherein to obtain the topology information, the instructions cause the one or more processors to use passive telemetry or active telemetry to obtain, during operation of the wireless networking system, the topology information or neighbor information from which the topology information is derived.

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26. The media of claim 24, wherein to obtain the topology information, the instructions cause the one or more processors to correlate transmissions of a transmitting wireless client device between two or more receiving wireless client devices.

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27. The media of claim 24, wherein determining the desired configuration change is further dependent on a respective coverage pattern for wireless transmission and reception for one or more of the plurality of antennas.

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28. The media of claim 24, wherein to determine the desired configuration change, the instructions cause the one or more processors to determine a set of antennas that, when activated, create a coverage pattern over a collective coverage area that includes at least a desired coverage area.

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29. The media of claim 24, wherein:
the antennas coupled to each Wi-Fi transmitter represent a repeated collection of antenna elements each of which contributes to a default coverage pattern for the collection of antenna elements; and

to determine the desired configuration change, the instructions cause the one or more processors to determine a configuration change that results in a change to the coverage pattern for the antennas coupled to the one of the two or more Wi-Fi transceivers.

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30. The media of claim 24, wherein to determine the desired configuration change, the instructions cause the one or more processors to use a machine learning model that has been trained to produce a discriminator for evaluating proposed configurations for the wireless networking system.

31. The media of claim 30, wherein the instructions further cause the one or more processors to:

generate, by the machine learning model, one or more proposed configurations for the wireless networking system;

predict a respective result of each of the proposed configurations; and

select, based on the predicting, one of the proposed configurations, the selected
5 proposed configuration including the desired configuration change.

32. The media of claim 30, wherein the machine learning model is trained using weighted configuration propositions produced by a telemetry process and a respective quality measure associated with a region of the wireless networking system affected by each weighted
10 configuration proposition.

33. The media of claim 24, wherein:

the instructions further cause the one or more processors to determine that a wireless client device should be handed off from one or more currently active antennas over which
15 signals are transmitted or received on behalf of the wireless client device in a first coverage area;

determining the desired configuration change and the initiating the desired configuration change are performed in response to determining that the wireless client device should be handed off from the one or more currently active antennas; and

20 to perform initiating the desired configuration change, the instructions cause the one or more processors to deactivate at least one of the one or more currently active antennas and activate at least one alternate antenna having a second coverage area.

34. The media of claim 33, wherein to determine that the wireless client device
25 should be handed off from the one or more currently active antennas, the instructions cause the one or more processors to determine that the wireless client device is approaching an edge of the first coverage area.

35. The media of claim 33, wherein:

30 the instructions further cause the one or more processors to obtain, using passive telemetry or active telemetry and during operation of the wireless networking system, a measure of a signal quality, error rate, or data rate associated with the wireless client device

and the first Wi-Fi transceiver or a measure of a signal quality, error rate, or data rate associated with the wireless client device and a second Wi-Fi transceiver; and

determining that the wireless client device should be handed off from the one or more currently active antennas is dependent on the signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver, or the signal quality, error rate, or data rate associated with the wireless client device and the second Wi-Fi transceiver.

36. The media of claim 33, wherein:

to determine the desired configuration, the instructions cause the one or more processors to:

modify a configuration proposition or a configuration proposition weighting;

and

initiate production of a new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting; and

the instructions further cause the one or more processors to generate the new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting and one or more applicable configuration change constraints.

37. The media of claim 36, wherein the one or more applicable configuration change constraints include:

a constraint on a distance between the first coverage area and the second coverage area;

a requirement that the at least one alternate antenna is in a same coherent antenna set as the one or more currently active antennas; or

a requirement that the at least one alternate antenna represents a same subset of elements in a first instance of a repeated collection of antenna elements as a subset of elements in a second instance of the repeated collection of antenna elements represented by the one or more currently active antennas.

38. A computer-implemented method of dynamically configuring a wireless networking system, comprising:

obtaining, for each of a plurality of antennas in the wireless networking system, topology information indicating whether and how the antenna is in reach of one or more other antennas in the plurality of antennas, the wireless networking system including two or more Wi-Fi transceivers coupled to each other in parallel, each of which is operable to be selectively coupled to one or more of the plurality of antennas by respective switches, and the obtained topology information representing one or more configuration propositions for the wireless networking system;

determining, using a machine learning model that has been trained to produce a discriminator for evaluating proposed configurations for the wireless networking system and dependent on the obtained topology information, a respective predicted result of each of the one or more configuration propositions; and

determining, dependent on the predicted results, a set of antennas selected from among the plurality of antennas to be activated in the wireless networking system following a configuration change to the wireless networking system, the configuration change including a change in which and how many of the plurality of antennas are coupled to the two or more Wi-Fi transceivers or a change in which or how many of the two or more Wi-Fi transceivers are active.

39. The method of claim 38, further comprising determining, by the machine learning model, a learned response indicating a significance of each of the plurality of antennas.

40. The method of claim 38, wherein the machine learning model is trained using the one or more configuration propositions as weighted by a telemetry process and a respective quality measure associated with a region of the wireless networking system affected by each weighted configuration proposition.

41. The method of claim 38, wherein obtaining the topology information comprises using passive telemetry or active telemetry to obtain, during operation of the wireless networking system, the topology information or neighbor information from which the topology information is derived.

42. The method of claim 38, wherein the obtained topology information applies to a combination of antennas from which a transmission is received or a combination of receiving antennas.

5 43. The method of claim 38, wherein determining the set of antennas is further dependent on a respective coverage pattern for wireless transmission and reception for one or more of the plurality of antennas.

44. The method of claim 38, wherein determining the set of antennas comprises
10 determining a set of antennas that, when activated, create a coverage pattern over a collective coverage area that includes at least a desired coverage area.

45. The method of claim 38, wherein determining the set of antennas is further dependent on at least one of: optimality, network needs, operator requests, wireless conditions,
15 and client demand.

46. The method of claim 38, further comprising initiating the configuration change.

47. The method of claim 46, wherein:
20 the method further comprises determining that a wireless client device should be handed off from one or more currently active antennas over which signals are transmitted or received on behalf of the wireless client device in a first coverage area;

determining the respective predicted results and determining the set of antennas are performed in response to determining that the wireless client device should be handed off from
25 the one or more currently active antennas; and

initiating the configuration change comprises deactivating at least one of the one or more currently active antennas and activating at least one alternate antenna having a second coverage area.

30 48. The method of claim 47, wherein determining that the wireless client device should be handed off from the one or more currently active antennas comprises determining that the wireless client device is approaching an edge of the first coverage area.

49. The method of claim 47, wherein:

the method further comprises obtaining, using passive telemetry or active telemetry and during operation of the wireless networking system, a measure of a signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver or a measure of a signal quality, error rate, or data rate associated with the wireless client device and a second Wi-Fi transceiver; and

determining that the wireless client should be handed off from the one or more currently active antennas is dependent on the signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver, or the signal quality, error rate, or data rate associated with the wireless client device and the second Wi-Fi transceiver.

50. The method of claim 47, wherein:

determining the set of antennas comprises:

modifying a configuration proposition or a configuration proposition weighting; and

initiating production of a new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting; and

the method further comprises generating the new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting and one or more applicable configuration change constraints.

51. The method of claim 50, wherein the one or more applicable configuration change constraints include:

a constraint on a distance between the first coverage area and the second coverage area; a requirement that the at least one alternate antenna is in a same coherent antenna set as the one or more currently active antennas; or

a requirement that the at least one alternate antenna represents a same subset of elements in a first instance of a repeated collection of antenna elements as a subset of elements in a second instance of the repeated collection of antenna elements represented by the one or more currently active antennas.

52. One or more computer-readable non-transitory storage media storing one or more sequences of instructions which, when executed using one or more processors, cause the one or more processors to:

5 obtain, for each of a plurality of antennas in a wireless networking system, topology information indicating whether and how the antenna is in reach of one or more other antennas in the plurality of antennas, the wireless networking system including two or more Wi-Fi transceivers coupled to each other in parallel, each of which is operable to be selectively coupled to one or more of the plurality of antennas by respective switches, and the obtained topology information representing one or more configuration propositions for the wireless
10 networking system;

determine, using a machine learning model that has been trained to produce a discriminator for evaluating proposed configurations for the wireless networking system and dependent on the obtained topology information, a respective predicted result of each of the one or more configuration propositions; and

15 determine, dependent on the predicted results, a set of antennas selected from among the plurality of antennas to be activated in the wireless networking system following a configuration change to the wireless networking system, the configuration change including a change in which and how many of the plurality of antennas are coupled to the two or more Wi-Fi transceivers or a change in which or how many of the two or more Wi-Fi transceivers are
20 active.

53. The media of claim 52, wherein the machine learning model is trained using the one or more configuration propositions as weighted by a telemetry process and a respective quality measure associated with a region of the wireless networking system affected by each
25 weighted configuration proposition.

54. The media of claim 52, wherein to obtain the topology information, the instructions cause the one or more processors to use passive telemetry or active telemetry to obtain, during operation of the wireless networking system, the topology information or
30 neighbor information from which the topology information is derived.

55. The media of claim 52, wherein determining the set of antennas is further dependent on a respective coverage pattern for wireless transmission and reception for one or more of the plurality of antennas.

5 56. The media of claim 52, wherein to determine the set of antennas, the instructions cause the one or more processors to determine a set of antennas that, when activated, create a coverage pattern over a collective coverage area that includes at least a desired coverage area.

57. The media of claim 52, wherein the instructions further cause the one or more
10 processors to initiate the configuration change.

58. The media of claim 52, wherein:
the instructions further cause the one or more processors to determine that a wireless client device should be handed off from one or more currently active antennas over which
15 signals are transmitted or received on behalf of the wireless client device in a first coverage area;

determining the respective predicted results and determining the set of antennas are performed in response to determining that the wireless client device should be handed off from the one or more currently active antennas; and
20 to initiate the configuration change, the instructions cause the one or more processors to deactivate at least one of the one or more currently active antennas and to activate at least one alternate antenna having a second coverage area.

59. The media of claim 58, wherein to determine that the wireless client device
25 should be handed off from the one or more currently active antennas, the instructions cause the one or more processors to determine that the wireless client device is approaching an edge of the first coverage area.

60. The media of claim 58, wherein:
30 the instructions further cause the one or more processors to obtain, using passive telemetry or active telemetry and during operation of the wireless networking system, a measure of a signal quality, error rate, or data rate associated with the wireless client device

and the first Wi-Fi transceiver or a measure of a signal quality, error rate, or data rate associated with the wireless client device and a second Wi-Fi transceiver; and

determining that the wireless client device should be handed off from the one or more currently active antennas is dependent on the signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver, or the signal quality, error rate, or data rate associated with the wireless client device and the second Wi-Fi transceiver.

61. The media of claim 58, wherein:

to determine the set of antennas, the instructions cause the one or more processors to:

10 modify a configuration proposition or a configuration proposition weighting;
and

 initiate production of a new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting; and

15 the instructions further cause the one or more processors to generate the new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting and one or more applicable configuration change constraints.

20 62. The media of claim 61, wherein the one or more applicable configuration change constraints include:

 a constraint on a distance between the first coverage area and the second coverage area;

 a requirement that the at least one alternate antenna is in a same coherent antenna set as the one or more currently active antennas; or

25 a requirement that the at least one alternate antenna represents a same subset of elements in a first instance of a repeated collection of antenna elements as a subset of elements in a second instance of the repeated collection of antenna elements represented by the one or more currently active antennas.

30 63. A computer-implemented method of performing an antenna handoff in a wireless networking system, comprising:

 determining that a wireless client device should be handed off from one or more currently active antennas over which signals are transmitted or received on behalf of the

wireless client device in a first coverage area, the wireless networking system including two or more Wi-Fi transceivers coupled to each other in parallel, each of which is operable to be selectively coupled to one or more of a plurality of antennas by respective switches, and the one or more currently active antennas being coupled to a first one of the two or more Wi-Fi transceivers; and

initiating a configuration change in the wireless networking system, the configuration change including deactivating at least one of the one or more currently active antennas and activating at least one alternate antenna having a second coverage area.

64. The method of claim 63, wherein determining that the wireless client device should be handed off from the one or more currently active antennas comprises determining that the wireless client device is approaching an edge of the first coverage area.

65. The method of claim 63, wherein the at least one alternate antenna is coupled to the first one of the two or more Wi-Fi transceivers.

66. The method of claim 63, wherein the at least one alternate antenna is coupled to a second one of the two or more Wi-Fi transceivers.

67. The method of claim 66, further comprising deactivating the first one of the two or more Wi-Fi transceivers.

68. The method of claim 63, wherein determining that the wireless client device should be handed off from the one or more currently active antennas is dependent on a signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver or a signal quality error rate, or data rate associated with the wireless client device and a second Wi-Fi transceiver.

69. The method of claim 68, further comprising obtaining, using passive telemetry or active telemetry and during operation of the wireless networking system, a measure of the signal quality, error rate, or data rate associated with the wireless client device and the first or second Wi-Fi transceiver.

70. The method of claim 63, wherein initiating the configuration change comprises controlling one or more of the respective switches to deactivate the one or more antennas and to activate the at least one alternate antenna.

5 71. The method of claim 63, wherein initiating the configuration change comprises:
selecting a first preconfigured set of antennas including the at least one alternate
antenna from among a plurality of preconfigured sets of antennas; and
controlling one or more of the respective switches to effect a move of signals
transmitted or received on behalf of the wireless client device from a second preconfigured set
10 of antennas including the one or more currently active antennas to the first preconfigured set
of antennas.

72. The method of claim 63, wherein initiating the configuration change comprises:
modifying a configuration proposition or a configuration proposition weighting; and
15 initiating production of a new configuration for the wireless networking system
dependent on the modified configuration proposition or configuration proposition weighting.

73. The method of claim 72, further comprising generating the new configuration
for the wireless networking system dependent on the modified configuration proposition or
20 configuration proposition weighting and one or more applicable configuration change
constraints.

74. The method of claim 73, wherein the one or more applicable configuration
change constraints include a constraint on a distance between the first coverage area and the
25 second coverage area.

75. The method of claim 73, wherein:
the plurality of antennas includes a plurality of coherent antenna sets, each including
multiple antennas; and
30 the one or more applicable configuration change constraints include a requirement that
the at least one alternate antenna is in a same coherent antenna set as the one or more currently
active antennas.

76. The method of claim 73, wherein:
the plurality of antennas includes a repeated collection of antenna elements each of which contributes to a default coverage pattern for the collection of antenna elements;
the currently active antennas represent a subset of the elements in a first instance of the
5 repeated collection of antenna elements; and
the one or more applicable configuration change constraints include a requirement that the at least one alternate antenna represents the same subset of elements in a second instance of the repeated collection of antenna elements.
- 10 77. The method of claim 63, further comprising:
obtaining, for each of the plurality of antennas, topology information indicating whether and how the antenna is in reach of one or more other antennas in the plurality of antennas; and
determining, dependent on the obtained topology information, the configuration
15 change.
78. The method of claim 77, wherein obtaining the topology information comprises using passive telemetry or active telemetry to obtain, during operation of the wireless networking system, the topology information or neighbor information from which the topology
20 information is derived.
79. The method of claim 77, wherein determining the configuration change comprises determining a set of antennas that, when activated, create a coverage pattern over a collective coverage area that includes at least the second coverage area.
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80. The method of claim 77, wherein determining the configuration change comprises using a machine learning model that has been trained to produce a discriminator for evaluating proposed configurations for the wireless networking system.
- 30 81. The method of claim 80, further comprising:
generating, by the machine learning model, one or more proposed configurations for the wireless networking system;
predicting a respective result of each of the proposed configurations; and

selecting, based on the predicting, one of the proposed configurations, the selected proposed configuration including the configuration change.

82. The method of claim 80, wherein the machine learning model is trained using weighted configuration propositions produced by a telemetry process and a respective quality measure associated with a region of the wireless networking system affected by each weighted configuration proposition.

83. One or more computer-readable non-transitory storage media storing one or more sequences of instructions which, when executed using one or more processors, cause the one or more processors to:

determine, for a wireless networking system, that a wireless client device should be handed off from one or more currently active antennas over which signals are transmitted or received on behalf of the wireless client device in a first coverage area, the wireless networking system including two or more Wi-Fi transceivers coupled to each other in parallel, each of which is operable to be selectively coupled to one or more of a plurality of antennas by respective switches, and the one or more currently active antennas being coupled to a first one of the two or more Wi-Fi transceivers;

initiate a configuration change in the wireless networking system, the configuration change including deactivating at least one of the one or more currently active antennas and activating at least one alternate antenna having a second coverage area.

84. The media of claim 83, wherein to determine that the wireless client device should be handed off from one or more currently active antennas, the instructions cause the one or more processors to determine that the wireless client device is approaching an edge of the first coverage area.

85. The media of claim 83, wherein:
the instructions further cause the one or more processors to obtain, using passive telemetry or active telemetry and during operation of the wireless networking system, a measure of a signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver or a measure of a signal quality, error rate, or data rate associated with the wireless client device and a second Wi-Fi transceiver; and

determining that the wireless client device should be handed off from one or more currently active antennas is dependent on the signal quality, error rate, or data rate associated with the wireless client device and the first Wi-Fi transceiver, or the signal quality, error rate, or data rate associated with the wireless client device and the second Wi-Fi transceiver.

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86. The media of claim 83, wherein to initiate the configuration change, the instructions cause the one or more processors to:

select a first preconfigured set of antennas including the at least one alternate antenna from among a plurality of preconfigured sets of antennas; and

10 control one or more of the respective switches to effect a move of signals transmitted or received on behalf of the wireless client device from a second preconfigured set of antennas including the one or more currently active antennas to the first preconfigured set of antennas.

87. The media of claim 83, wherein to initiate the configuration change, the
15 instructions cause the one or more processors to:

modify a configuration proposition or a configuration proposition weighting;

initiate production of a new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting; and

20 generate the new configuration for the wireless networking system dependent on the modified configuration proposition or configuration proposition weighting and one or more applicable configuration change constraints.

88. The media of claim 87, wherein the one or more applicable configuration
25 change constraints include:

a constraint on a distance between the first coverage area and the second coverage area;

a requirement that the at least one alternate antenna is in a same coherent antenna set as the one or more currently active antennas; or

30 a requirement that the at least one alternate antenna represents a same subset of elements in a first instance of a repeated collection of antenna elements as a subset of elements in a second instance of the repeated collection of antenna elements represented by the one or more currently active antennas.

89. The media of claim 83, wherein the instructions further cause the one or more processors to:

obtain, for each of the plurality of antennas, topology information indicating whether and how the antenna is in reach of one or more other antennas in the plurality of antennas; and
5 determine, dependent on the obtained topology information, the configuration change.

90. The media of claim 89, wherein to obtain the topology information, the instructions cause the one or more processors to use passive telemetry or active telemetry to obtain, during operation of the wireless networking system, the topology information or
10 neighbor information from which the topology information is derived.

91. The media of claim 89, wherein to determine the configuration change, the instructions cause the one or more processors to determine a set of antennas that, when activated, create a coverage pattern over a collective coverage area that includes at least the
15 second coverage area.

92. The media of claim 89, wherein to determine the configuration change, the instructions cause the one or more processors to use a machine learning model that has been trained to produce a discriminator for evaluating proposed configurations for the wireless
20 networking system.

93. The media of claim 92, wherein the instructions further cause the one or more processors to:

generate, by the machine learning model, one or more proposed configurations for the
25 wireless networking system;

predict a respective result of each of the proposed configurations; and

select, based on the predicting, one of the proposed configurations, the selected proposed configuration including the configuration change.

94. The media of claim 92, wherein the machine learning model is trained using
30 weighted configuration propositions produced by a telemetry process and a respective quality measure associated with a region of the wireless networking system affected by each weighted configuration proposition.