Amended Set of Claims 1 to 128

1. A method of communicating in a wireless network, comprising:
generating a compressed beacon comprising:
a next full beacon time indication (NFBTI); and
transmitting, at an access point, the compressed beacon,
wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

2. The method of Claim 1, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

3. The method of Claim 2, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

4. The method of Claim 1, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

5. The method of Claim 4, further comprising:
generating the full beacon; and
transmitting the full beacon.

6. The method of Claim 1, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

7. The method of Claim 6, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

8. The method of Claim 7, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

9. The method of Claim 1, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;
the next full beacon time indication; and
a frame check.

10. The method of Claim 9, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

11. The method of Claim 9, wherein the source address comprises a basic service set identification (BSSID) of the access point.

12. The method of Claim 1, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

13. The method of Claim 9, the method further comprising changing the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

14. The method of Claim 9, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

15. The method of Claim 14, wherein the version field comprises 2 bits, the

type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

16. The method of Claim 14, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

17. A method of communicating in a wireless network, comprising:

receiving, at a wireless device, a compressed beacon comprising a next full beacon time indication (NFBTI);

operating the wireless device in a first power mode for a duration based on the next full beacon time indication; and

transitioning the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power, and

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

18. The method of Claim 17, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

19. The method of Claim 18, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

20. The method of Claim 17, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

21. The method of Claim 20, further comprising receiving the full beacon after transitioning the wireless device to the second power mode.

22. The method of Claim 17, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

23. The method of Claim 22, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

24. The method of Claim 23, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

25. The method of Claim 17, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;
the next full beacon time indication; and
a frame check.

26. The method of Claim 25, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

27. The method of Claim 25, wherein the source address comprises a basic service set identification (BSSID) of the access point.

28. The method of Claim 17, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

29. The method of Claim 25, the method further comprising:

detecting a change in the change sequence;

transmitting a probe request when a change in the change sequence is detected; and

receiving a probe response in response to the probe request.

30. The method of Claim 25, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

31. The method of Claim 30, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

32. The method of Claim 30, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

33. A wireless device configured to communicate in a wireless network, comprising:

a processor configured to generate a compressed beacon, the compressed beacon comprising:

a next full beacon time indication (NFBTI); and

a transmitter configured to transmit the compressed beacon,

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

34. The wireless device of Claim 33, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

35. The wireless device of Claim 34, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

36. The wireless device of Claim 33, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

37. The wireless device of Claim 36, wherein:
the processor is further configured to generate the full beacon, and
the transmitter is further configured to transmit the full beacon.

38. The wireless device of Claim 33, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

39. The wireless device of Claim 38, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

40. The wireless device of Claim 39, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

41. The wireless device of Claim 33, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;

the next full beacon time indication; and

a frame check.

42. The wireless device of Claim 41, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

43. The wireless device of Claim 41, wherein the source address comprises a basic service set identification (BSSID) of the access point.

44. The wireless device of Claim 33, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

45. The wireless device of Claim 41, wherein the processor is further configured to change the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

46. The wireless device of Claim 41, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

47. The wireless device of Claim 46, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

48. The wireless device of Claim 46, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

49. A wireless device configured to communicate in a wireless network, comprising:

a receiver configured to receive a compressed beacon comprising a next full beacon time indication (NFBTI); and

a processor configured to:

operate the wireless device in a first power mode for a duration based on the next full beacon time indication; and

transition the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power, and

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

50. The wireless device of Claim 49, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

51. The wireless device of Claim 50, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

52. The wireless device of Claim 49, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

53. The wireless device of Claim 52, the receiver is further configured to receive the full beacon after the processor transitions the wireless device to the second power mode.

54. The wireless device of Claim 49, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

55. The wireless device of Claim 54, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

56. The wireless device of Claim 55, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

57. The wireless device of Claim 49, wherein the compressed beacon comprises:

a frame control field;
a source address;
a change sequence;
the next full beacon time indication; and
a frame check.

58. The wireless device of Claim 57, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

59. The wireless device of Claim 57, wherein the source address comprises a basic service set identification (BSSID) of the access point.

60. The wireless device of Claim 49, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

61. The wireless device of Claim 57, wherein:

the processor is further configured to detect a change in the change sequence;

the transmitter is further configured to transmit a probe request when a change in the change sequence is detected; and

the receiver is further configured to receive a probe response in response to the probe request.

62. The wireless device of Claim 57, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

63. The wireless device of Claim 62, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

64. The wireless device of Claim 62, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

65. An apparatus for communicating in a wireless network, comprising:

means for generating a compressed beacon comprising:

a next full beacon time indication (NFBTI); and

means for transmitting the compressed beacon,

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

66. The apparatus of Claim 65, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

67. The apparatus of Claim 66, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

68. The apparatus of Claim 65, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

69. The apparatus of Claim 68, further comprising:
means for generating the full beacon; and
means for transmitting the full beacon.

70. The apparatus of Claim 65, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

71. The apparatus of Claim 70, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

72. The apparatus of Claim 71, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

73. The apparatus of Claim 65, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;
the next full beacon time indication; and
a frame check.

74. The apparatus of Claim 73, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the

change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

75. The apparatus of Claim 73, wherein the source address comprises a basic service set identification (BSSID) of the access point.

76. The apparatus of Claim 65, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

77. The apparatus of Claim 73, further comprising means for changing the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

78. The apparatus of Claim 73, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

79. The apparatus of Claim 78, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

80. The apparatus of Claim 78, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

81. An apparatus for communicating in a wireless network, comprising:

means for receiving a compressed beacon comprising a next full beacon time indication (NFBTI);

means for operating a wireless device in a first power mode for a duration based on the next full beacon time indication; and

means for transitioning the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power, and

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

82. The apparatus of Claim 81, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

83. The apparatus of Claim 82, wherein the next full beacon time indication comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time (TBTT).

84. The apparatus of Claim 81, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

85. The apparatus of Claim 84, further comprising means for receiving the full beacon after transitioning the wireless device to the second power mode.

86. The apparatus of Claim 81, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

87. The apparatus of Claim 86, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

88. The apparatus of Claim 87, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

89. The apparatus of Claim 81, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;
the next full beacon time indication; and
a frame check.

90. The apparatus of Claim 89, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

91. The apparatus of Claim 89, wherein the source address comprises a basic service set identification (BSSID) of the access point.

92. The apparatus of Claim 81, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

93. The apparatus of Claim 89, further comprising:
means for detecting a change in the change sequence;
means for transmitting a probe request when a change in the change sequence is detected; and
means for receiving a probe response in response to the probe request.

94. The apparatus of Claim 89, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

95. The apparatus of Claim 94, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

96. The apparatus of Claim 94, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

97. A non-transitory computer-readable medium comprising code that, when executed, causes an apparatus to:

generate a compressed beacon comprising:

a next full beacon time indication (NFBTI); and

transmit the compressed beacon,

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

98. The medium of Claim 97, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

99. The medium of Claim 98, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

100. The medium of Claim 97, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

101. The medium of Claim 100, further comprising code that, when executed, causes the apparatus to:

generate the full beacon: and

transmit the full beacon.

102. The medium of Claim 97, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

103. The medium of Claim 102, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

104. The medium of Claim 103, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

105. The medium of Claim 97, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;
the next full beacon time indication; and
a frame check.

106. The medium of Claim 105, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

107. The medium of Claim 105, wherein the source address comprises a basic service set identification (BSSID) of the access point.

108. The medium of Claim 97, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

109. The medium of Claim 105, further comprising code that, when executed,

causes the apparatus to change the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

110. The medium of Claim 105, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

111. The medium of Claim 109, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

112. The medium of Claim 109, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

113. A non-transitory computer-readable medium comprising code that, when executed, causes an apparatus to:

receive a compressed beacon comprising a next full beacon time indication (NFBTI);

operate a wireless device in a first power mode for a duration based on the next full beacon time indication; and

transition the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power, and

wherein the NFBTI comprises a shortened timestamp comprising fewer bits than a full timestamp.

114. The medium of Claim 113, wherein the next full beacon time indication comprises a time at which the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

115. The medium of Claim 114, wherein the next full beacon time indication comprises the 3 most significant bytes, of the 4 least significant bytes of a next target beacon transmit time (TBTT).

116. The medium of Claim 113, wherein the next full beacon time indication comprises a flag indicating that the access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

117. The medium of Claim 116, further comprising code that, when executed, causes the apparatus to receive the full beacon after transitioning the wireless device to the second power mode.

118. The medium of Claim 113, wherein the next full beacon time indication comprises a value indicating a duration until the access point transmits the next full beacon.

119. The medium of Claim 118, wherein the next full beacon time indication indicates the number of time units (TUs) until the access point transmits the next full beacon.

120. The medium of Claim 119, wherein the next full beacon time indication comprises a null value when number of beacon intervals to the next full beacon is not determined.

121. The medium of Claim 113, wherein the compressed beacon comprises:
a frame control field;
a source address;
a change sequence;
the next full beacon time indication: and

a frame check.

122. The medium of Claim 121, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication comprises 3 bytes, and the frame check comprises 4 bytes.

123. The medium of Claim 121, wherein the source address comprises a basic service set identification (BSSID) of the access point.

124. The medium of Claim 113, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

125. The medium of Claim 121, further comprising code that, when executed, causes the apparatus to:

detect a change in the change sequence;

transmit a probe request when a change in the change sequence is detected; and

receive a probe response in response to the probe request.

126. The medium of Claim 121, wherein the frame control field comprises a version field, a type field, a subtype field, a next full beacon time indication (NFBTI) present field, a service set identifier (SSID) present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

127. The medium of Claim 126, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the NFBTI present field comprises 1 bit, the SSID present flag comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

128. The medium of Claim 126, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a

compressed beacon.

CLAIMS

1. A method of communicating in a wireless network, comprising:

generating, at an access point, a compressed beacon comprising:

a next full beacon time indication field indicative at least in part of timing of a full beacon, the full beacon including one or more fields not included in the compressed beacon; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field; and

transmitting, at the access point, the compressed beacon.

2. The method of claim 1, wherein the next full beacon time indication field comprises a time at which the access point will transmit the full beacon.

3. The method of claim 2, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

4. The method of claim 1, wherein the next full beacon time indication field comprises a flag indicating that the access point will transmit the full beacon.

5. The method of claim **1**, further comprising
generating the full beacon; and
transmitting the full beacon.

6. The method of claim **1**, wherein the next full beacon time indication field comprises a value indicating a duration until the access point transmits the full beacon.

7. The method of claim **1**, wherein the next full beacon time indication field indicates the number of time units until the access point transmits the full beacon.

8. The method of claim **1**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the full beacon is not determined.

9. The method of claim **1**, wherein the compressed beacon comprises:
the frame control field;
a source address;
a timestamp;
a change sequence;
the next full beacon time indication field; and
a frame check.

10. The method of claim **9**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

11. The method of claim **9**, wherein the source address comprises a basic service set identification of the access point.

12. The method of claim **9**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

13. The method of claim **12**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

14. The method of claim **9**, the method further comprising changing the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

15. The method of claim **9**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

16. The method of claim **15**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

17. The method of claim **15**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

18. A method of communicating in a wireless network, comprising:

receiving, at a wireless device, a compressed beacon, the compressed beacon comprising:

a next full beacon time indication field; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field;

operating the wireless device in a first power mode for a duration based on the next full beacon time indication field; and

transitioning the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power.

19. The method of claim **18**, wherein the next full beacon time indication field comprises a time at which an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

20. The method of claim **19**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

21. The method of claim **18**, wherein the next full beacon time indication field comprises a flag indicating that an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

22. The method of claim **21**, further comprising receiving the full beacon after transitioning the wireless device to the second power mode.

23. The method of claim **18**, wherein the next full beacon time indication field comprises a value indicating a duration until an access point transmits a next full beacon.

24. The method of claim **18**, wherein the next full beacon

time indication field indicates the number of time units until the access point transmits the next full beacon.

25. The method of claim **18**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the next full beacon is not determined.

26. The method of claim **18**, wherein the compressed beacon comprises:

the frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

27. The method of claim **26**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

28. The method of claim **26**, wherein the source address comprises a basic service set identification of an access point.

29. The method of claim **26**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

30. The method of claim **29**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

31. The method of claim **26**, the method further comprising:

detecting a change in the change sequence;

transmitting a probe request when a change in the change sequence is detected; and

receiving a probe response in response to the probe request.

32. The method of claim **26**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

33. The method of claim **32**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

34. The method of claim **32**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

35. A wireless device configured to communicate in a wireless network, comprising:

a processor configured to:

generate a compressed beacon, the compressed beacon comprising:

a next full beacon time indication field indicative at least in part of timing of a full beacon, the full beacon including one or more fields not included in the compressed beacon; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field; and

a transmitter configured to transmit the compressed beacon.

36. The wireless device of claim **35**, wherein the next full beacon time indication field comprises a time at which the wireless device will transmit the full beacon.

37. The wireless device of claim **36**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

38. The wireless device of claim **35**, wherein the next full beacon time indication field comprises a flag indicating that the wireless device will transmit the full beacon.

39. The wireless device of claim **35**, wherein

the processor is further configured to generate the full beacon, and

the transmitter is further configured to transmit the full beacon.

40. The wireless device of claim **35**, wherein the next full beacon time indication field comprises a value indicating a duration until the wireless device transmits the full beacon.

41. The wireless device of claim **35**, wherein the next full beacon time indication field indicates the number of time units until the wireless device transmits the full beacon.

42. The wireless device of claim **35**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the full beacon is not determined.

43. The wireless device of claim **35**, wherein the compressed beacon comprises:

the frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

44. The wireless device of claim **43**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

45. The wireless device of claim **43**, wherein the source address comprises a basic service set identification of the wireless device.

46. The wireless device of claim **43**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

47. The wireless device of claim **46**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

48. The wireless device of claim **43**, wherein the processor is further configured to change the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

49. The wireless device of claim **43**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

50. The wireless device of claim **49**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

51. The wireless device of claim **49**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

52. A wireless device configured to communicate in a wireless network, comprising:

a receiver configured to receive a compressed beacon, the compressed beacon comprising:

a next full beacon time indication field; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field; and

a processor configured to:

operate the wireless device in a first power mode for a duration based on the next full beacon time indication field; and

transition the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power.

53. The wireless device of claim **52**, wherein the next full beacon time indication field comprises a time at which an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

54. The wireless device of claim **53**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

55. The wireless device of claim **52**, wherein the next full beacon time indication field comprises a flag indicating that

an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

56. The wireless device of claim **55**, the receiver is further configured to receive the full beacon after the processor transitions the wireless device to the second power mode.

57. The wireless device of claim **52**, wherein the next full beacon time indication field comprises a value indicating a duration until an access point transmits a next full beacon.

58. The wireless device of claim **52**, wherein the next full beacon time indication field indicates the number of time units until the access point transmits a next full beacon.

59. The wireless device of claim **52**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the full beacon is not determined.

60. The wireless device of claim **52**, wherein the compressed beacon comprises:

the frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

61. The wireless device of claim **60**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

62. The wireless device of claim **60**, wherein the source address comprises a basic service set identification of an access point.

63. The wireless device of claim **60**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

64. The wireless device of claim **63**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

65. The wireless device of claim **60**, wherein:

the processor is further configured to detect a change in the change sequence;

the transmitter is further configured to transmit a probe request when a change in the change sequence is detected; and

the receiver is further configured to receive a probe response in response to the probe request.

66. The wireless device of claim **60**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

67. The wireless device of claim **66**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

68. The wireless device of claim **66**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

69. An apparatus for communicating in a wireless network, comprising:

means for generating a compressed beacon comprising:

a next full beacon time indication field indicative at least in part of timing of a full beacon, the full beacon including one or more fields not included in the compressed beacon; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field; and

means for transmitting the compressed beacon.

70. The apparatus of claim **69**, wherein the next full beacon time indication field comprises a time at which the apparatus will transmit the full beacon.

71. The apparatus of claim **70**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

72. The apparatus of claim **69**, wherein the next full beacon time indication field comprises a flag indicating that the apparatus will transmit the full beacon.

73. The apparatus of claim **69**, further comprising

means for generating the full beacon; and

means for transmitting the full beacon.

74. The apparatus of claim **69**, wherein the next full beacon time indication field comprises a value indicating a duration until the apparatus transmits the full beacon.

75. The apparatus of claim **69**, wherein the next full beacon time indication field indicates the number of time units until the apparatus transmits the full beacon.

76. The apparatus of claim **69**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the full beacon is not determined.

77. The apparatus of claim **69**, wherein the compressed beacon comprises:

the frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

78. The apparatus of claim **77**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

79. The apparatus of claim **77**, wherein the source address comprises a basic service set identification of the apparatus.

80. The apparatus of claim **77**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

81. The apparatus of claim **80**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

82. The apparatus of claim **77**, further comprising means for changing the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

83. The apparatus of claim **77**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

84. The apparatus of claim **83**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication

present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

85. The apparatus of claim **83**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

86. An apparatus for communicating in a wireless network, comprising:

means for receiving a compressed beacon, the compressed beacon comprising:

a next full beacon time indication field; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field;

means for operating a wireless device in a first power mode for a duration based on the next full beacon time indication field; and

means for transitioning the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power.

87. The apparatus of claim **86**, wherein the next full beacon time indication field comprises a time at which an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

88. The apparatus of claim **87**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

89. The apparatus of claim **86**, wherein the next full beacon time indication field comprises a flag indicating that an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

90. The apparatus of claim **89**, further comprising means for receiving the full beacon after transitioning the wireless device to the second power mode.

91. The apparatus of claim **86**, wherein the next full beacon time indication field comprises a value indicating a duration until an access point transmits a next full beacon.

92. The apparatus of claim **86**, wherein the next full beacon time indication field indicates the number of time units until the access point transmits the next full beacon.

93. The apparatus of claim **86**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the next full beacon is not determined.

94. The apparatus of claim **86**, wherein the compressed beacon comprises:

the frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

95. The apparatus of claim **94**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

96. The apparatus of claim **94**, wherein the source address comprises a basic service set identification of an access point.

97. The apparatus of claim **94**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

98. The apparatus of claim **97**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

99. The apparatus of claim **94**, further comprising:

means for detecting a change in the change sequence;

means for transmitting a probe request when a change in the change sequence is detected; and

means for receiving a probe response in response to the probe request.

100. The apparatus of claim **94**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

101. The apparatus of claim **100**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

102. The apparatus of claim **100**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

103. A non-transitory computer-readable medium comprising code that, when executed, causes an apparatus to:

generate a compressed beacon comprising:

a next full beacon time indication field indicative at least

in part of timing of a full beacon, the full beacon including one or more fields not included in the compressed beacon; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field; and

transmit the compressed beacon.

104. The medium of claim **103**, wherein the next full beacon time indication field comprises a time at which the apparatus will transmit the full beacon.

105. The medium of claim **104**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

106. The medium of claim **103**, wherein the next full beacon time indication field comprises a flag indicating that the apparatus will transmit the full beacon.

107. The medium of claim **103**, further comprising code that, when executed, causes the apparatus to:

generate the full beacon; and

transmit the full beacon.

108. The medium of claim **103**, wherein the next full beacon time indication field comprises a value indicating a duration until the apparatus transmits the full beacon.

109. The medium of claim **103**, wherein the next full beacon time indication field indicates the number of time units until the apparatus transmits the full beacon.

110. The medium of claim **103**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the full beacon is not determined.

111. The medium of claim **103**, wherein the compressed beacon comprises:

the a frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

112. The medium of claim **111**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

113. The medium of claim **111**, wherein the source address comprises a basic service set identification of the apparatus.

114. The medium of claim **111**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

115. The medium of claim **114**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

116. The medium of claim **111**, further comprising code that, when executed, causes the apparatus to change the change sequence when an access point or network configuration changes or when there is a substantial change in the content of a full beacon.

117. The medium of claim **111**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

118. The medium of claim **116**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype

field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

119. The medium of claim **116**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.

120. A non-transitory computer-readable medium comprising code that, when executed, causes an apparatus to:

receive a compressed beacon, the compressed beacon comprising:

a next full beacon time indication field; and

a frame control field, the frame control field including a next full beacon time indication present field, wherein the next full beacon time indication present field identifies that the compressed beacon includes the next full beacon time indication field;

operate a wireless device in a first power mode for a duration based on the next full beacon time indication field; and

transition the wireless device to a second power mode at the end of the duration,

wherein the wireless device consumes a first power when in the first power mode, and a second power when in the second power mode, the first power being lower than the second power.

121. The medium of claim **120**, wherein the next full beacon time indication field comprises a time at which an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

122. The medium of claim **121**, wherein the next full beacon time indication field comprises the 3 most significant bytes of the 4 least significant bytes of a next target beacon transmit time.

123. The medium of claim **120**, wherein the next full beacon time indication field comprises a flag indicating that an access point will transmit a full beacon comprising one or more fields not included in the compressed beacon.

124. The medium of claim **123**, further comprising code that, when executed, causes the apparatus to receive the full beacon after transitioning the wireless device to the second power mode.

125. The medium of claim **120**, wherein the next full beacon time indication field comprises a value indicating a duration until an access point transmits a next full beacon.

126. The medium of claim **120**, wherein the next full beacon time indication indicates the number of time units until the access point transmits the next full beacon.

127. The medium of claim **120**, wherein the next full beacon time indication field comprises a null value when a number of beacon intervals until transmission of the next full beacon is not determined.

128. The medium of claim **120**, wherein the compressed beacon comprises:

the frame control field;

a source address;

a timestamp;

a change sequence;

the next full beacon time indication field; and

a frame check.

129. The medium of claim **128**, wherein the frame control field comprises 2 bytes, the source address comprises 6 bytes, the timestamp comprises 4 bytes, the change sequence comprises 1 byte, the next full beacon time indication field comprises 3 bytes, and the frame check comprises 4 bytes.

130. The medium of claim **128**, wherein the source address comprises a basic service set identification of an access point.

131. The medium of claim **128**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

132. The medium of claim **131**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

133. The medium of claim **128**, further comprising code that, when executed, causes the apparatus to:

detect a change in the change sequence;

transmit a probe request when a change in the change sequence is detected; and

receive a probe response in response to the probe request.

134. The medium of claim **128**, wherein the frame control field comprises a version field, a type field, a subtype field, the next full beacon time indication present field, a service set identifier present field, an internetworking present field, a bandwidth field, a security field, and one or more reserved bits.

135. The medium of claim **134**, wherein the version field comprises 2 bits, the type field comprises 2 bits, the subtype field comprises 4 bits, the next full beacon time indication present field comprises 1 bit, the service set identifier present field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field comprises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

136. The medium of claim **134**, wherein type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating that the beacon is a compressed beacon.