CLAIMS

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

transmitting, at an access point, a full beacon at a first multiple of a beacon interval; and

transmitting a compressed beacon at each beacon interval that is not the first multiple of the beacon interval.

2. The method of Claim 1, further comprising communicating the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

3. The method of Claim 1, further comprising including a Traffic Indication Map (TIM) in each beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

4. The method of Claim 1, further comprising including a Delivery Traffic Indication Map (DTIM) in each beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

5. The method of Claim 1, wherein the compressed beacon is shorter than the full beacon.

6. The method of Claim 1, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

7. The method of Claim 6, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

8. The method of Claim 6, wherein the source address comprises a basic service set identification (BSSID) of the access point.

9. The method of Claim 6, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

10. The method of Claim 9, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

11. The method of Claim 6, 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.

12. The method of Claim 6, 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.

13. The method of Claim 12, 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.

14. The method of Claim 12, 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.

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

receiving, at a wireless device, a full beacon at a first multiple of a beacon interval; and

receiving a compressed beacon at a beacon interval that is not the first multiple of the beacon interval.

16. The method of Claim 15, further comprising receiving the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

17. The method of Claim 15, further comprising receiving a Traffic Indication Map (TIM) in a beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

18. The method of Claim 15, further comprising receiving a Delivery Traffic Indication Map (DTIM) in a beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

19. The method of Claim 15, wherein the compressed beacon is shorter than the full beacon.

20. The method of Claim 15, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

21. The method of Claim 20, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

22. The method of Claim 20, wherein the source address comprises a basic service set identification (BSSID) of the access point.

23. The method of Claim 20, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

24. The method of Claim 23, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

25. The method of Claim 20, 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.

26. The method of Claim 20, 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.

27. The method of Claim 26, 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.

28. The method of Claim 26, 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.

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

a transmitter configured to:

transmit a full beacon at a first multiple of a beacon interval; and

transmit a compressed beacon at each beacon interval that is not the first multiple of the beacon interval.

30. The wireless device of Claim 29, wherein the transmitter is further configured to communicate the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

31. The wireless device of Claim 29, further comprising a processor configured to include a Traffic Indication Map (TIM) in each beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

32. The wireless device of Claim 29, further comprising a processor configured to include a Delivery Traffic Indication Map (DTIM) in each beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

33. The wireless device of Claim 29, wherein the compressed beacon is shorter than the full beacon.

34. The wireless device of Claim 29, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

35. The wireless device of Claim 34, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

36. The wireless device of Claim 34, wherein the source address comprises a basic service set identification (BSSID) of the access point.

37. The wireless device of Claim 34, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

38. The wireless device of Claim 37, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

39. The wireless device of Claim 34, further comprising a processor configured to include 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.

40. The wireless device of Claim 34, 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.

41. The wireless device of Claim 41, 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.

42. The wireless device of Claim 41, 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.

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

a receiver configured to:

receive a full beacon at a first multiple of a beacon interval; and

receive a compressed beacon at a beacon interval that is not the first multiple of the beacon interval.

44. The wireless device of Claim 43, wherein the receiver is further configured to receive the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

45. The wireless device of Claim 43, wherein the receiver is further configured to receive a Traffic Indication Map (TIM) in a beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

46. The wireless device of Claim 43, wherein the receiver is further configured to receive a Delivery Traffic Indication Map (DTIM) in a beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

47. The wireless device of Claim 43, wherein the compressed beacon is shorter than the full beacon.

48. The wireless device of Claim 43, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

49. The wireless device of Claim 48, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

50. The wireless device of Claim 48, wherein the source address comprises a basic service set identification (BSSID) of the access point.

51. The wireless device of Claim 48, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

52. The wireless device of Claim 51, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

53. The wireless device of Claim 48, further comprising:

a processor configured to detect a change in the change sequence; and

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

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

54. The wireless device of Claim 48, 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.

55. The wireless device of Claim 54, 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.

56. The wireless device of Claim 54, 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.

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

means for transmitting a full beacon at a first multiple of a beacon interval; and

means for transmitting a compressed beacon at each beacon interval that is not the first multiple of the beacon interval.

58. The apparatus of Claim 57, further comprising means for communicating the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

59. The apparatus of Claim 57, further comprising means for including a Traffic Indication Map (TIM) in each beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

60. The apparatus of Claim 57, further comprising means for including a Delivery Traffic Indication Map (DTIM) in each beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

61. The apparatus of Claim 57, wherein the compressed beacon is shorter than the full beacon.

62. The apparatus of Claim 57, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;
a shortened network identifier;
an access network options field; and
a frame check.

63. The apparatus of Claim 62, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

64. The apparatus of Claim 62, wherein the source address comprises a basic service set identification (BSSID) of the access point.

65. The apparatus of Claim 62, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

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

67. The apparatus of Claim 62, 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.

68. The apparatus of Claim 62, 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.

69. The apparatus of Claim 68, 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.

70. The apparatus of Claim 68, 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.

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

means for receiving a full beacon at a first multiple of a beacon interval; and

means for receiving a compressed beacon at a beacon interval that is not the first multiple of the beacon interval.

72. The apparatus of Claim 71, further comprising means for receiving the first multiple, comprising a full beacon period in a full beacon frame or in a probe response frame.

73. The apparatus of Claim 71, further comprising means for receiving a Traffic Indication Map (TIM) in a beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

74. The apparatus of Claim 71, further comprising means for receiving a Delivery Traffic Indication Map (DTIM) in a beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

75. The apparatus of Claim 71, wherein the compressed beacon is shorter than the full beacon.

76. The apparatus of Claim 71, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

77. The apparatus of Claim 76, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

78. The apparatus of Claim 76, wherein the source address comprises a basic service set identification (BSSID) of the access point.

79. The apparatus of Claim 76, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

80. The apparatus of Claim 79, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

81. The apparatus of Claim 76, 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.

82. The apparatus of Claim 76, 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.

83. The apparatus of Claim 82, 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.

84. The apparatus of Claim 82, 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.

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

transmit a full beacon at a first multiple of a beacon interval; and

transmit a compressed beacon at each beacon interval that is not the first multiple of the beacon interval.

86. The medium of Claim 85, further comprising code that, when executed, causes the apparatus to communicate the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

87. The medium of Claim 85, further comprising code that, when executed, causes the apparatus to include a Traffic Indication Map (TIM) in each beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

88. The medium of Claim 85, further comprising code that, when executed, causes the apparatus to include a Delivery Traffic Indication Map (DTIM) in each beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

89. The medium of Claim 85, wherein the compressed beacon is shorter than the full beacon.

90. The medium of Claim 85, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;
next full beacon time indication;
a shortened network identifier;
an access network options field; and
a frame check.

91. The medium of Claim 90, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

92. The medium of Claim 90, wherein the source address comprises a basic service set identification (BSSID) of the access point.

93. The medium of Claim 90, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

94. The medium of Claim 93, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

95. The medium of Claim 90, 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.

96. The medium of Claim 90, 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.

97. The medium of Claim 96, 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.

98. The medium of Claim 96, 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.

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

receive a full beacon at a first multiple of a beacon interval; and

receive a compressed beacon at a beacon interval that is not the first multiple of the beacon interval.

100. The medium of Claim 99, further comprising code that, when executed, causes the apparatus to receive the first multiple, comprising a full beacon period, in a full beacon frame or in a probe response frame.

101. The medium of Claim 99, further comprising code that, when executed, causes the apparatus to receive a Traffic Indication Map (TIM) in a beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

102. The medium of Claim 99, further comprising code that, when executed, causes the apparatus to receive a Delivery Traffic Indication Map (DTIM) in a beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

103. The medium of Claim 99, wherein the compressed beacon is shorter than the full beacon.

104. The medium of Claim 99, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

105. The medium of Claim 104, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

106. The medium of Claim 104, wherein the source address comprises a basic service set identification (BSSID) of the access point.

107. The medium of Claim 104, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

108. The medium of Claim 107, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

109. The medium of Claim 104, 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.

110. The medium of Claim 104, 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 110, 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 110, 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:

transmitting, at an access point, a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

periodically transmitting a compressed beacon at each beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is transmitted at each beacon interval.

2. The method of claim 1, further comprising communicating the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

3. The method of claim **1**, further comprising including a Traffic Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

4. The method of claim **1**, further comprising including a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

5. The method of claim **1**, wherein the compressed beacon is shorter than the full beacon.

6. The method of claim **1**, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

7. The method of claim **6**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

8. The method of claim **6**, wherein the source address comprises a basic service set identification (BSSID) of the access point.

9. The method of claim **6**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

10. The method of claim **9**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

11. The method of claim **6**, the method further comprising changing the change sequence when the access point or network configuration changes or when there is a substantial change in the content of a full beacon.

12. The method of claim **6**, 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.

13. The method of claim **12**, 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 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.

14. The method of claim **12**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

receiving, at a wireless device, a full beacon at a full beacon

interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

periodically receiving a compressed beacon at a beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is received at each beacon interval.

16. The method of claim **15**, further comprising receiving the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

17. The method of claim **15**, further comprising receiving a Traffic Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

18. The method of claim **15**, further comprising receiving a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

19. The method of claim **15**, wherein the compressed beacon is shorter than the full beacon.

20. The method of claim **15**, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

21. The method of claim **20**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

22. The method of claim **20**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

23. The method of claim **20**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

24. The method of claim **23**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

25. The method of claim **20**, 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.

26. The method of claim **20**, 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.

27. The method of claim **26**, 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 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.

28. The method of claim **26**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

a transmitter configured to:

transmit a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

periodically transmit a compressed beacon at each beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is transmitted at each beacon interval.

30. The wireless device of claim **29**, wherein the transmitter is further configured to communicate the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

31. The wireless device of claim **29**, further comprising a processor configured to include a Traffic Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

32. The wireless device of claim **29**, further comprising a processor configured to include a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

33. The wireless device of claim **29**, wherein the compressed beacon is shorter than the full beacon.

34. The wireless device of claim **29**, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

35. The wireless device of claim **34**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

36. The wireless device of claim **34**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

37. The wireless device of claim **34**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

38. The wireless device of claim **37**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

39. The wireless device of claim **34**, further comprising a processor configured to include 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.

40. The wireless device of claim **34**, 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.

41. The wireless device of claim **40**, 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 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.

42. The wireless device of claim **41**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

a receiver configured to:

receive a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

periodically receive a compressed beacon at a beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is received at each beacon interval.

44. The wireless device of claim **43**, wherein the receiver is further configured to receive the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

45. The wireless device of claim **43**, wherein the receiver is further configured to receive a Traffic Indication Map (TIM)

in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

46. The wireless device of claim **43**, wherein the receiver is further configured to receive a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

47. The wireless device of claim **43**, wherein the compressed beacon is shorter than the full beacon.

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

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

49. The wireless device of claim **48**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

50. The wireless device of claim **48**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

51. The wireless device of claim **48**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

52. The wireless device of claim **51**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

53. The wireless device of claim **48**, further comprising: a processor configured to detect a change in the change sequence; and a transmitter is further configured to transmit a probe request when a change in the change sequence is detected, wherein the receiver is further configured to receive a probe response in response to the probe request.

54. The wireless device of claim **48**, 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.

55. The wireless device of claim **54**, 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 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.

56. The wireless device of claim **54**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

means for transmitting a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

means for periodically transmitting a compressed beacon at each beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a sub-

set of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is transmitted at each beacon interval.

58. The apparatus of claim **57**, further comprising means for communicating the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

59. The apparatus of claim **57**, further comprising means for including a Traffic Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

60. The apparatus of claim **57**, further comprising means for including a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

61. The apparatus of claim **57**, wherein the compressed beacon is shorter than the full beacon.

62. The apparatus of claim **57**, wherein the compressed beacon comprises:

a frame control field;
a source address;
a timestamp;
a change sequence;
next full beacon time indication;
a shortened network identifier;
an access network options field; and
a frame check.

63. The apparatus of claim **62**, 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, the shortened network identifier comprises four

bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

64. The apparatus of claim **62**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

65. The apparatus of claim **62**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

66. The apparatus of claim **65**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

67. The apparatus of claim **62**, 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.

68. The apparatus of claim **62**, 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.

69. The apparatus of claim **68**, 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 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.

70. The apparatus of claim **68**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

means for receiving a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

means for periodically receiving a compressed beacon at a beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is received at each beacon interval.

72. The apparatus of claim **71**, further comprising means for receiving the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

73. The apparatus of claim **71**, further comprising means for receiving a Traffic Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

74. The apparatus of claim **71**, further comprising means for receiving a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

75. The apparatus of claim **71**, wherein the compressed beacon is shorter than the full beacon.

76. The apparatus of claim **71**, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

77. The apparatus of claim **76**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

78. The apparatus of claim **76**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

79. The apparatus of claim **76**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

80. The apparatus of claim **79**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

81. The apparatus of claim **76**, 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.

82. The apparatus of claim **76**, 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.

83. The apparatus of claim **82**, 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 field comprises 1 bit, the internetworking present field comprises 1 bit, the bandwidth field com-

prises 3 bits, the security field comprises 1 bit, and the one or more reserved bits comprise 1 bit.

84. The apparatus of claim **82**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

transmit a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

periodically transmit a compressed beacon at each beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is transmitted at each beacon interval.

86. The medium of claim **85**, further comprising code that, when executed, causes the apparatus to communicate the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

87. The medium of claim **85**, further comprising code that, when executed, causes the apparatus to include a Traffic Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

88. The medium of claim **85**, further comprising code that, when executed, causes the apparatus to include a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

89. The medium of claim **85**, wherein the compressed beacon is shorter than the full beacon.

90. The medium of claim **85**, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

91. The medium of claim **90**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

92. The medium of claim **90**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

93. The medium of claim **90**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

94. The medium of claim **93**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

95. The medium of claim **90**, 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.

96. The medium of claim **90**, 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.

97. The medium of claim **96**, 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 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.

98. The medium of claim **96**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.

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

receive a full beacon at a full beacon interval, wherein the full beacon interval is a first multiple of a beacon interval and is longer than the beacon interval, and wherein the full beacon includes a set of fields; and

periodically receive a compressed beacon at a beacon interval that is not the first multiple of the beacon interval, the compressed beacon including a subset of the set of fields, wherein the full beacon interval and the beacon interval are constant intervals, and wherein a full beacon or a compressed beacon is received at each beacon interval.

100. The medium of claim **99**, further comprising code that, when executed, causes the apparatus to receive the first multiple of the beacon interval in a full beacon frame or in a probe response frame.

101. The medium of claim **99**, further comprising code that, when executed, causes the apparatus to receive a Traffic

Indication Map (TIM) in a full beacon or a compressed beacon at a second multiple of the beacon interval, the second multiple comprising a TIM period.

102. The medium of claim **99**, further comprising code that, when executed, causes the apparatus to receive a Delivery Traffic Indication Map (DTIM) in a full beacon or a compressed beacon at a third multiple of the beacon interval, the third multiple comprising a DTIM period.

103. The medium of claim **99**, wherein the compressed beacon is shorter than the full beacon.

104. The medium of claim **99**, wherein the compressed beacon comprises:

a frame control field;

a source address;

a timestamp;

a change sequence;

next full beacon time indication;

a shortened network identifier;

an access network options field; and

a frame check.

105. The medium of claim **104**, 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, the shortened network identifier comprises four bytes, the access network options field comprises one byte, and the frame check comprises 4 bytes.

106. The medium of claim **104**, wherein the source address comprises a basic service set identification (BSSID) of an access point.

107. The medium of claim **104**, wherein the timestamp comprises a shortened timestamp comprising fewer bits than a full timestamp.

108. The medium of claim **107**, wherein the timestamp comprises a one or more least significant bits of the full timestamp.

109. The medium of claim **104**, 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.

110. The medium of claim **104**, 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 **110**, 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 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.

112. The medium of claim **110**, wherein the type field comprises a value of "11" and the subtype field comprises a value of "0001," indicating a compressed beacon.