CLAIMS

1. A method of providing network broadcast information to one or more wireless devices by a wireless local area network, the method comprising the steps of:

receiving, from one or more available wireless networks or a network database, wireless network broadcast information associated with the one or more available wireless networks;

providing the wireless network broadcast information in a generic container message which varies in content and format according to one or more wireless standards associated with the one or more available wireless networks; and

causing the generic container message to be regularly broadcasted for receipt and use by a wireless device.

2. The method of claim 1, wherein the step of causing the generic container message to be regularly broadcasted comprises periodically broadcasting the generic container message.

3. The method of claim 1, wherein the wireless network broadcast information is associated with a plurality of wireless networks.

4. The method of claim 1, wherein the generic container message includes a technology-specific container.

5. The method of claim 1, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

6. The method of claim 1, wherein the wireless network broadcast information comprises cellular network broadcast information associated with a plurality of cellular networks.

7. The method of claim 1, wherein the wireless network broadcast information includes:

first wireless network information having a first format and associated with a first wireless network; and

second wireless network information having a second format different from the first format and associated with a second wireless network.

8. The method of claim 1, wherein the wireless network broadcast information includes:

first wireless network information having a first information content and associated with a first wireless network; and

second wireless network information having a second information content different from the first information content and associated with a second wireless network.

9. A wireless local area network (WLAN) being adapted to receive, from one or more available wireless networks or a network database, wireless network broadcast information associated with one or more available wireless networks; provide the wireless network broadcast information in a generic container message which varies in content and format according to one or more wireless standards associated with the one or more available wireless networks; and cause the generic container message to be regularly broadcasted for receipt and use by a wireless device.

10. The WLAN of claim 9, wherein the WLAN is further adapted to periodically broadcast the generic container message.

11. The WLAN of claim 9, wherein the generic container message includes a technology-specific container.

12. The WLAN of claim 9, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

13. The WLAN of claim 9, wherein the wireless network broadcast information includes first wireless network information which identifies the first wireless network.

14. The WLAN of claim 9, wherein the wireless network broadcast information is associated with one or more available wireless networks comprising a plurality of wireless networks.

15. A method of receiving and processing network broadcast information from a wireless local area network by a wireless device, the method comprising the steps of:

monitoring for broadcast information from a wireless local area network;

receiving a generic container message from the wireless local area network which is regularly broadcasted by the wireless local area network, the generic container message including wireless network broadcast information associated with one or more available wireless networks which varies in content and format in accordance with one or more wireless standards associated with the one or more available wireless networks;

decoding the generic container message to identify the wireless network broadcast information associated with the one or more available wireless networks; and

storing the wireless network broadcast information in memory.

16. The method of claim 15, wherein the generic container message which is regularly broadcasted is periodically broadcasted by the wireless local area network.

17. The method of claim 15, further comprising:

selecting one of the one or more available wireless networks for communication using the wireless network broadcast information stored in the memory.

18. The method of claim 15, wherein the wireless network broadcast information comprises cellular network broadcast information associated with a plurality of cellular networks.

19. The method of claim 15, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

20. The method of claim 15, wherein the wireless network broadcast information includes:

first wireless network information having a first information content and associated with a first wireless network; and

second wireless network information having a second information content different from the first information content and associated with a second wireless network.

21. The method of claim 15, wherein the wireless network broadcast information includes:

first wireless network information having a first format and associated with a first wireless network; and

second wireless network information having a second format different from the first format and associated with a second wireless network.

22. A wireless device, comprising:

one or more processors;

memory coupled to the one or more processors;

a radio frequency (RF) transceiver coupled to the one or more processors;

an antenna coupled to the RF transceiver;

the one or more processors being operative to:

monitor for broadcast information from a wireless local area network with use of the RF transceiver;

receive generic container message which is regularly broadcasted by the wireless local area network, the generic container message including wireless network broadcast information associated with one or more available wireless networks which varies in content and format in accordance with one or more wireless standards associated with the one or more available wireless networks;

decode the generic container message to identify the wireless network broadcast information associated with the one or more available wireless networks; and

store the wireless network broadcast information in the memory.

23. The wireless device of claim 22, wherein the generic container message which is regularly broadcasted is periodically broadcasted by the wireless local area network.

24. The wireless device of claim 22, wherein the one or more processors are further operative to select one of the one or more available wireless networks for communication using the wireless network broadcast information stored in the memory.

25. The wireless device of claim 22, wherein the generic container message includes a technology-specific container.

26. The wireless device of claim 22, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

27. A method of providing network broadcast information to one or more wireless devices by a wireless local area network, the method comprising the steps of:

receiving, from one or more available wireless networks or a network database, wireless network broadcast information associated with the one or more available wireless networks;

providing the wireless network broadcast information in a generic container message which varies in content and format according to one or more wireless standards associated with the one or more available wireless networks;

receiving a probe request from a wireless device; and

causing the generic container message to be sent to the wireless device in response to the probe request.

28. The method of claim 27, wherein the generic container message is sent as part of a probe response to the wireless device.

29. The method of claim 27, further comprising:

causing a network interworking indicator to be regularly broadcasted.

30. The method of claim 27, further comprising:

causing a network interworking indicator to be regularly broadcasted, the network interworking indicator being indicative of whether the wireless network broadcast information is available for receipt from the wireless local area network.

31. The method of claim 27, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

32. The method of claim 27, wherein the wireless network broadcast information includes:

first wireless network information having a first information content and associated with a first wireless network; and

second wireless network information having a second information content different from the first information content and associated with a second wireless network.

33. The method of claim 27, wherein the wireless network broadcast information includes:

first wireless network information having a first format and associated with a first wireless network; and

second wireless network information having a second format different from the first format and associated with a second wireless network.

34. A wireless local area network (WLAN) being adapted to receive, from one or more available wireless networks or a network database, wireless network broadcast information associated with the one or more available wireless networks; provide the wireless network broadcast information in a generic container message which varies in content and format according to one or more wireless standards associated with the one or more available wireless networks; receive a probe request from a wireless device; and cause the generic container message to be sent to the wireless device in response to the probe request.

35. The WLAN of claim 34, wherein the generic container message is sent as part of a probe response to the wireless device.

36. The WLAN of claim 34, wherein the WLAN is further operative for causing a network interworking indicator to be regularly broadcasted.

37. The WLAN of claim 34, wherein the WLAN is further operative for causing a network interworking indicator to be regularly broadcasted, the network interworking indicator being indicative of whether the wireless network broadcast information is available for receipt from the WLAN.

38. The WLAN of claim 34, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

39. A method of receiving and processing network broadcast information from a wireless local area network by a wireless device, the method comprising the steps of:

causing a probe request to be sent to a wireless local area network;

receiving a generic container message from the wireless local area network in response to the probe request, the generic container message varying in content and format according to one or more wireless standards associated with one or more available wireless networks;

decoding the generic container message to identify wireless network broadcast information associated with the one or more available wireless networks; and

storing the wireless network broadcast information in memory.

40. The method of claim 39, further comprising:

selecting one of the one or more available wireless networks for communication using the wireless network broadcast information stored in the memory.

41. The method of claim 39, wherein the wireless network broadcast information comprises cellular network broadcast information associated with a plurality of cellular networks.

42. The method of claim 39, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

43. The method of claim 39, wherein the wireless network broadcast information includes:

first wireless network information having a first information content and associated with a first wireless network; and

second wireless network information having a second information content different from the first information content and associated with a second wireless network.

44. The method of claim 39, wherein the wireless network broadcast information includes:

first wireless network information having a first format and associated with a first wireless network; and

second wireless network information having a second format different from the first format and associated with a second wireless network.

45. The method of claim 39, further comprising:

monitoring for broadcast information from the wireless local area network; and

receiving a network interworking indicator which is indicative of whether the wireless network broadcast information is available for receipt from the wireless local area network.

46. The method of claim 39, further comprising:

monitoring for broadcast information from the wireless local area network;

receiving a network interworking indicator which is regularly broadcasted;

identifying that the network interworking indicator is indicative that the wireless network broadcast information is available from the wireless local area network; and

wherein the step of causing the probe request to be sent is based on identifying that the step of identifying.

47. A wireless device, comprising:

one or more processors;

memory coupled to the one or more processors;

a radio frequency (RF) transceiver coupled to the one or more processors;

an antenna coupled to the RF transceiver;

the one or more processors being operative to:

cause a probe request to be sent to a wireless local area network;

receive a generic container message from the wireless local area network in response to the probe request, the generic container message varying in content and format according to one or more wireless standards associated with one or more available wireless networks;

decode the generic container message to identify wireless network broadcast information associated with the one or more available wireless networks; and

store the wireless network broadcast information in memory of the wireless device.

48. The wireless device of claim 47, wherein the one or more processors are further operative to select one of the one or more available wireless networks for communication using the wireless network broadcast information stored in the memory.

49. The wireless device of claim 47, wherein the wireless network broadcast information comprises cellular network broadcast information associated with a plurality of cellular networks.

50. The wireless device of claim 47, wherein the generic container message includes a data field for identifying a technology standard or standard organization associated with a first wireless network.

51. The wireless device of claim 47, wherein the one or more processors are further operative to:

monitor for broadcast information from the wireless local area network; and

receive a network interworking indicator which is regularly broadcasted.

52. The wireless device of claim 47, wherein the one or more processors are further operative to:

monitor for broadcast information from the wireless local area network; and

receive a network interworking indicator which is indicative of whether the wireless network broadcast information is available for receipt from the wireless local area network.

53. The wireless device of claim 47, wherein the one or more processors are further operative to:

monitor for broadcast information of the wireless local area network;

receive a network interworking indicator which is regularly broadcasted;

identifying that the network interworking indicator is indicative that the wireless network broadcast information is available from the wireless local area network; and

wherein causing the probe request to be sent is based on identifying that the network interworking indicator is indicative that the wireless network broadcast information is available from the wireless local area network.

CLAIMS:

1. A method for providing network information to a wireless device (300, 302) in a wireless local area network (304), the method comprising:

receiving a message from the wireless device for requesting the network information which is associated with and identifies one or more networks (306, 308, 310), at least one of the networks being a type of network from a group of different types of network comprising a time division-based network, a frequency division-based network, and a cellular network,

providing the network information in a generic container message (702) for transmission to the wireless device (300, 302), wherein the generic container message (702) varies in content and format according to different communication protocols associated with the different types of networks in the group of different types, the generic container message defined to include:

a container field (712) for providing the network information associated with the different types of networks and which is formatted in accordance with at least one of: a technology, a standards organization, or a protocol.

2. The method of claim 1, wherein the generic container message (702) is further defined to include:

a second container field for providing second network information associated with a second network and which is formatted in accordance with at least one of: a second technology, a second standards organization, or a second protocol.

3. The method of claim 2, wherein the at least one of the technology, the standards organization, or the protocol indicated in the container field (712) is different from the at least one of the second technology, the second standards organization, or the second protocol indicated in the second container field.

4. The method of claim 2, wherein the second container field is further defined to include a network identification comprising a System Identification SID which identifies the second network.

5. The method of claim 2, wherein the network is a first cellular network and the second network is a second cellular network.

6. The method of claim 1, wherein the generic container message (702) is further defined to include:

a length field (708) for identifying a variable data length of the network information provided in the container field (712).

7. The method of claim 1, wherein the container field (712) is further defined to identify at least one of the different types of networks.

8. The method of claim 1, wherein the generic container message (702) is further defined to include a tag field (704) which identifies the generic container message (702) as a generic container message.

9. The method of claim 1, wherein, when the standards organization is specified in the generic container message (702), the container field (712) is further defined to include a network identification formatted in accordance with the standards organization.

10. The method of claim 1, wherein the container field (712) is further defined to include cellular network information associated with one or more cellular networks.

11. The method of claim 1, wherein the container field (712) is further defined to include a network identification comprising a Mobile Network Code, MNC, and Mobile Country Code, MCC, pair which identifies the network.

12. The method of claim 1, wherein the container field (712) is defined to indicate ones of the different types of networks which comprise cellular networks.

13. A wireless local area network (WLAN) (304) which is configured to:

receive a message from a wireless device (300, 302) for requesting network information which is associated with and identifies one or more networks (306, 308, 310), at least one of the networks being a type of network from a group of different types of network comprising a time division-based network, a frequency division-based network, and a cellular network, and

provide the network information in a generic container message (702) or transmission to the wireless device (300, 302) in response to receiving the message, the generic container message varying in content and format according to different

communication protocols associated with the different types of networks in the group of different types, the generic container message defined to include:

a container field (712) for providing the network information associated with the different types of networks and which is formatted in accordance with at least one of: a technology, a standards organization, or a protocol.

14. The WLAN of claim 13, wherein the generic container message (702) is further defined to include: a second container field for providing second network information associated with a second network and which is formatted in accordance with at least one of: a second technology, a second standards organization, or a second protocol.

15. The WLAN of claim 14, wherein the at least one of the technology, the standards organization, or the protocol indicated in the container field (712) is different from the at least one of the second technology, the second standards organization, or the second protocol indicated in the second container field.

16. The WLAN of claim 14, wherein the second container field is further defined to include a network identification comprising a System Identification, SID, which identifies the second network.

17. The WLAN of claim 14, wherein the container field (712) and the second container field are defined to indicate ones of the different types of networks which comprise cellular networks.

18. The WLAN of claim 13, wherein the generic container message (702) is further defined to include: a length field (708) for identifying a variable data length of the network information provided in the container field (712).

19. The WLAN of claim 13, wherein the container field (712) is further defined to identify at least one of the different types of networks.

20. The WLAN of claim 13, wherein the generic container message (702) is further defined to include a tag field (704) which identifies the generic container message (702) as a generic container message.

21. The WLAN of claim 13, wherein, when the standards organization is specified in the generic container message, the container field (712) is further defined to include a network identification formatted in accordance with the standards organization.

22. The WLAN of claim 13, wherein the container field (712) is defined to indicate ones of the different types of networks which comprise cellular networks.

23. The WLAN of claim 13, wherein the container field (712) is further defined to include a network identification comprising a Mobile Network Code, MNC, and Mobile Country Code, MCC, pair which uniquely identifies the network.