CLAIMS

1. A network management system comprising:

a receiver configured to receive, from a plurality of base stations, data indicative of network quality at the base station;

a processor configured to generate a recommendation based on the received data; and

a transmitter configured to transmit instructions to at least one of the plurality of base stations based on the recommendation.

2. The system of Claim 1, wherein the data indicative of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

3. The system of Claim 1, wherein the processor is configured to generate a recommendation to mitigate interference by power control or channel orthogonalization.

4. The system of Claim 1, wherein the transmitter is configured to transmit instructions to at least two of the plurality of base stations.

5. The system of Claim 4, wherein the processor is configured to generate a recommendation to initiate communications between at least two of the plurality of base stations.

6. The system of Claim 4, wherein the processor is configured to generate a recommendation to redistribute traffic between at least two of the plurality of base stations.

7. A method of managing a network, the method comprising:

receiving, from a plurality of base stations, data indicative of network quality at the base station;

generating a recommendation based on the received data; and

transmitting instructions to at least one of the plurality of base stations based on the recommendation.

8. The method of Claim 7, wherein the data indicative of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

9. The method of Claim 7, wherein transmitting instructions comprises transmitting instructions to redistribute traffic between at least two of the plurality of base stations.

10. The method of Claim 7 further comprising:

generating a request for information; and

transmitting the request to at least one of the plurality of base station.

11. The method of Claim 10, wherein the request for information is associated with a geographic location.

12. A network management system comprising:

means for receiving, from a plurality of base stations, data indicative of network quality at the base station;

means for generating a recommendation based on the received data; and

means for transmitting instructions to at least one of the plurality of base stations based on the recommendation.

13. The system of Claim 12, wherein the recommendation is a recommendation to initiate communications between at least two of the plurality of base stations.

14. The system of Claim 12, wherein the recommendation is a recommendation to redistribute traffic between at least two of the plurality of base stations.

15. The system of Claim 14, wherein the system transmits instruction to at least two of the plurality of base stations.

16. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to receive, from a plurality of base stations, data indicative of network quality at the base station;

code for causing at least one computer to generate a recommendation based on the received data; and

code for causing at least one computer to transmit instructions to at least one of the plurality of base stations based on the recommendation.

17. The computer program product of Claim 16, wherein the recommendation is a recommendation to initiate communications between at least two of the plurality of base stations.

18. The computer program product of Claim 16, wherein the recommendation is a recommendation to redistribute traffic between at least two of the plurality of base stations.

19. A network management system comprising:

a receiver configured to receive, from a plurality of base stations, data indicative of network quality at the base station;

a processor configured to generate a network map based on the received data; and

a display configured to display the network map.

20. The system of Claim 19, wherein the data indicative of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

21. The system of Claim 19, wherein the receiver is further configured to receive information indicative of a time associated with the network quality at the base station.

22. The system of Claim 19, further comprising a transmitter configured to transmit a request for information to at least one of the plurality of base stations.

23. The system of Claim 22, wherein the system comprises an input for indicating a particular area and the transmitter transmits a request for information to at least one of the plurality of base stations located in the particular area.

24. The system of Claim 22, wherein the system comprises an input for indicating a requested data type and the transmitter transmits a request for information indicating the requested data type.

25. The system of Claim 19, wherein the network map is time-dependent.

26. A method of managing a network, the method comprising:

receiving, from a plurality of base stations, data indicative of network quality at the base station;

generating a network map based on the received data; and

displaying the network map.

27. The method of Claim 26, wherein the data indicative of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

28. The method of Claim 26, further comprising:

generating a request for information; and

transmitting the request to at least one of the plurality of base stations.

29. The method of Claim 28, wherein the request is generated and transmitted automatically.

30. A network management system comprising:

means for receiving, from a plurality of base stations, data indicative of network quality at the base station;

means for generating a network map based on the received data; and

means for displaying the network map.

31. The system of Claim 30, wherein the network map is time-dependent.

32. The system of Claim 30, further comprising:

means for generating a request for information; and

means for transmitting the request to at least one of the plurality of base stations.

33. The system of Claim 32, wherein the request is generated and transmitted automatically.

34. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to receive, from a plurality of base stations, data indicative of network quality at the base station;

code for causing at least one computer to generate a network map based on the received data; and

code for causing at least one computer to display the network map.

35. The computer program product of Claim 34, wherein the network map is time-dependent.

36. The computer program product of Claim 34, wherein the computer readable medium further comprises:

code for causing at least one computer to generate a request for information; and

code for causing at least one computer to transmit the request to at least one of the plurality of base stations.

37. A network management system comprising:

a receiver configured to receive, from a plurality of base stations, data indicative of network quality at the base station;

a processor configured to generate a recommendation based on the received data; and

a display configured to display the recommendation.

38. The system of Claim 37, wherein the recommendation comprises a recommendation to deploy a transmitter at a particular location.

39. A method of managing a network, the method comprising:

receiving, from a plurality of base stations, data indicative of network quality at the base station;

generating a recommendation based on the received data; and

displaying the recommendation.

40. The method of Claim 39, wherein the recommendation is a recommendation to deploy a transmitter.

41. The method of Claim 39, wherein the recommendation is displayed via a graphical user interface.

42. A network management system comprising:

means for receiving, from a plurality of base stations, data indicative of network quality at the base station;

means for generating a recommendation based on the received data; and

means for displaying the recommendation.

43. The system of Claim 42, wherein the recommendation is a recommendation to deploy a transmitter.

44. The system of Claim 42, wherein the recommendation is a recommendation to redistribute traffic.

45. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to receive, from a plurality of base stations, data indicative of network quality at the base station;

code for causing at least one computer to generate a recommendation based on the received data; and

code for causing at least one computer to display the recommendation.

46. The computer program product of Claim 45, wherein the recommendation is a recommendation to deploy a transmitter.

47. The computer program product of Claim 45, wherein the code for causing at least one computer to display the recommendation comprises code for causing at least one computer to display the recommendation via a graphical user interface.

48. A base station comprising:

an air interface configured to receive wireless signals;

a processor configured to generate an indication of network quality based on the received wireless signals; and

a network interface configured to transmit the indication of network quality.

49. The base station of Claim 48, wherein the indication of network quality is an alert transmitted when a measured interference level is above a predetermined threshold for a predetermined period of time.

50. The base station of Claim 48, wherein the indication of network quality is a continuous measurement.

51. The base station of Claim 48, wherein the processor is configured to generate an indication of network quality in response to a trigger, the trigger based on at least one of a power class, a backhaul capacity, or an association.

52. The base station of Claim 48, wherein the network interface is configured to transmit the indication of network quality in response to a trigger, the trigger based on at least one of a power class, a backhaul capacity, or an association.

53. A method of transmitting network quality information, the method comprising:

receiving wireless signals;

generating an indication of network quality based on the received wireless signals; and

transmitting the indication of network quality.

54. The method of Claim 53, further comprising receiving a request for information, wherein transmitting the indication of network quality is performed in response to receiving the request.

55. The method of Claim 53, wherein the received wireless signals originate from one or more subscriber handsets.

56. The method of Claim 53, wherein the indication of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

57. A base station comprising:

means for receiving wireless signals;

means for generating an indication of network quality based on the received wireless signals; and

means for transmitting the indication of network quality.

58. The base station of Claim 57, wherein the received wireless signals originate from one or more subscriber handsets.

59. The base station of Claim 57, wherein the indication of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

60. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to receive wireless signals;

code for causing at least one computer to generate an indication of network quality based on the received wireless signals; and

code for causing at least one computer to transmit the indication of network quality.

61. The computer program product of Claim 60, wherein the received wireless signal originate from one or more subscriber handsets.

62. The computer program product of Claim 60, wherein the indication of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

63. A network management system comprising:

a receiver configured to receive, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

a processor configured to generate a network map based on the received data; and

a display device configured to display the network map.

64. The system of Claim 63, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence of network coverage, received signal strength, a dropped call, or an interference measurement.

65. The system of Claim 63, wherein the receiver is further configured to receive information indicative of a time associated with the position of the subscriber handsets and the network quality at the position.

66. The system of Claim 63, further comprising a transmitter configured to transmit a request for information to at least one of the plurality of subscriber handsets.

67. The system of Claim 66, wherein the system comprises an input for indicating a particular area and the transmitter transmits a request for information to at least one of the plurality of subscriber handsets located in the particular area.

68. The system of Claim 67, wherein the system comprises an input for indicating a requested data type and the transmitter transmits a request for information indicating the requested data type.

69. The system of Claim 63, wherein the network map is time-dependent.

70. The system of Claim 63, wherein the data is received via at least one of a base station or a network.

71. A method of managing a network, the method comprising:

receiving, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

generating a network map based on the received data; and

displaying the network map.

72. The method of Claim 71, further comprising:

generating a request for information; and

transmitting the request for information.

73. The method of Claim 71, wherein the data is received via one or more base stations.

74. A network management system comprising:

means for receiving, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

means for generating a network map based on the received data; and

means for displaying the network map.

75. The system of Claim 74, wherein the data is received via one or more base stations.

76. The system of Claim 74, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence of network coverage, received signal strength, a dropped call, or an interference measurement.

77. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to receive, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

code for causing at least one computer to generate a network map based on the received data; and

code for causing at least one computer to display the network map.

78. The computer program product of Claim 77, wherein the data is received via one or more base stations.

79. The computer program product of Claim 77, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence

of network coverage, received signal strength, a dropped call, or an interference measurement.

80. The computer program product of Claim 77, wherein the code for causing at least one computer to display the network map comprises code for causing at least one computer to display the network map via a graphical user interface.

81. A network management system comprising:

a receiver configured to receive, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

a processor configured to generate, based on the received data, a recommendation; and

a display configured to display the recommendation.

82. The system of Claim 81, wherein the recommendation comprises an alert indicative of a network inadequacy.

83. The system of Claim 81, wherein the recommendation comprises a recommendation to deploy a transmitter at a particular location.

84. The system of Claim 83, wherein the display is configured to display the particular location on a network map.

85. A method of network management, the method comprising:

receiving, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

generating, based on the received data, a recommendation; and

displaying the recommendation.

86. The method of Claim 85, wherein the recommendation is a recommendation to deploy a transmitter at a particular location.

87. The method of Claim 85, wherein displaying the recommendation comprising displaying the recommendation at a particular location on a network map.

88. The method of Claim 85, wherein the data is received via one or more base stations.

89. A network management system comprising:

means for receiving, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

means for generating, based on the received data, a recommendation; and

means for displaying the recommendation.

90. The system of Claim 89, wherein the recommendation is a recommendation to deploy a transmitter at a particular location.

91. The system of Claim 89, wherein displaying the recommendation comprising displaying the recommendation at a particular location on a network map.

92. The system of Claim 89, wherein the data is received via one or more base stations.

93. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to receive, from a plurality of subscriber handsets, data indicative of a position of the subscriber handset and data indicative of network quality at the position;

code for causing at least one computer to generate, based on the received data, a recommendation; and

code for causing at least one computer to display the recommendation.

94. The computer program product of Claim 93, wherein the recommendation is a recommendation to deploy a transmitter at a particular location.

95. The computer program product of Claim 93, wherein displaying the recommendation comprising displaying the recommendation at a particular location on a network map.

96. The computer program product of Claim 93, wherein the data is received via one or more base stations.

97. A subscriber handset comprising:

a positioning system configured to determine a position of the subscriber handset;

a processor configured to generate an indication of network quality at the position; and

a transmitter configured to transmit data indicative of the position and the network quality at the position.

98. The handset of Claim 97, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence of network coverage, received signal strength, a dropped call, or an interference measurement.

99. The handset of Claim 97, wherein the transmitter is further configured to transmit information indicative of a time associated with the position of the subscriber handset and the network quality at the position.

100. The handset of Claim 97, further comprising a receiver configured to receive a request for information, wherein the transmitted data is transmitted in response to receiving the request.

101. The handset of Claim 97, wherein the transmitter is configured to transmit the data based on the determined network quality.

102. A method of transmitting network quality information, the method comprising:

determining a position of the subscriber handset;

generating an indication of network quality at the position; and

transmitting data indicative of the position and the network quality at the position.

103. The method of Claim 103, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence of network coverage, received signal strength, a dropped call, or an interference measurement.

104. The method of Claim 103, further comprising transmitting information indicative of a time associated with the position of the subscriber handset and the network quality at the position.

105. A subscriber handset comprising:

means for determining a position of the subscriber handset;

means for generating an indication of network quality at the position; and

means for transmitting data indicative of the position and the network quality at the position.

106. The handset of Claim 107, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence of network coverage, received signal strength, a dropped call, or an interference measurement.

107. The handset of Claim 107, wherein the means for transmitting data further transmits information indicative of a time associated with the position of the subscriber handset and the network quality at the position.

108. A computer program product comprising:

a computer readable medium further comprising:

code for causing at least one computer to determine a position of the subscriber handset;

code for causing at least one computer to generate an indication of network quality at the position; and

code for causing at least one computer to transmit data indicative of the position and the network quality at the position.

109. The computer program product of Claim 111, wherein the data indicative of network quality comprises data indicative of at least one of: the presence or absence of network coverage, received signal strength, a dropped call, or an interference measurement.

110. The computer program product of Claim 111, wherein the code for causing at least one computer to transmit data further comprises code for causing at least one computer to transmit information indicative of a time associated with the position of the subscriber handset and the network quality at the position.

CLAIMS

1. A wireless cellular network management system comprising:

means adapted to receive, from a plurality of base stations, data indicative of network quality at the base station;

means adapted to generate a recommendation to initiate communications between at least two of the plurality of base stations based on the received data; and

means adapted to transmit instructions to at least two of the plurality of base stations based on the recommendation.

2. The system of Claim 1, wherein the data indicative of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

3. The system of Claim 1, wherein the generating means is configured to generate a recommendation to mitigate interference by power control or channel orthogonalization.

4. The system of Claim 1, wherein the generating means is configured to generate a recommendation to redistribute traffic between at least two of the plurality of base stations.

5. The system of Claim 1, further comprising:

means adapted to generate a network map based on the received data; and

means adapted to display the network map.

6. The system of Claim 1, further comprising:

means adapted to generate a recommendation based on the received data; and

means adapted to display the recommendation.

7. The system of Claim 1, further comprising:

means adapted to generate a request for information; and

means adapted to transmit the request to at least one of the plurality of base station.

8. The method of Claim 7, wherein the request for information is associated with a geographic location.

9. A method of managing a wireless cellular network, the method comprising:

receiving, from a plurality of base stations, data indicative of network quality at the base station;

generating a recommendation to initiate communications between at least two of the plurality of base stations based on the received data; and

transmitting instructions to at least two of the plurality of base stations based on the recommendation.

10. The method of Claim 9, wherein the data indicative of network quality comprises data indicative of at least one of: an interference measurement, a data load, or a packet loss rate.

11. The method of Claim 9, wherein the generated recommendation is generated to mitigate interference by power control or channel orthogonalization.

12. The method of Claim 9, wherein transmitting instructions comprises transmitting instructions to redistribute traffic between at least two of the plurality of base stations.

13. The method of Claim 9, further comprising:

generating a request for information; and

transmitting the request to at least one of the plurality of base station.

14. The method of Claim 13, wherein the request for information is associated with a geographic location.

15. A computer program product stored in a non-transitory computer readable medium for performing the method of any of Claims 9 to 14.