IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.	:	RE47720
Reexam Control No.	:	90/019,702
Confirmation No.	:	8522
Filed	:	October 14, 2024
TC/A.U	:	3992
Examiner	:	Heneghan, Matthew E.
Docket No.	:	USTAP030D.RE
Customer No.	:	134688
Title	:	SPECTRUM-ADAPTIVE NETWORKING

Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner of Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO ACCEPT INFORMATION DISCLOSURE STATEMENT AFTER ISSUANCE OF NOTICE OF INTENT TO ISSUE *EX PARTE* REEXAMINATION CERTIFICATE (NIRC)

Dear Sir:

Pursuant to 37 C.F.R. § 1.182, Patent Owner hereby petitions to accept the Information Disclosure Statement after the Notice of Intent to Issue *Ex Parte* Reexamination Certificate, mailed on July 15, 2025.

Patent Owner received a Notice of Filing Date Accorded to Petition of *inter partes* review proceeding IPR2025-01166 on July 7, 2025, just a week prior to receiving the NIRC. Patent Owner has analyzed the Petition and associated references of IPR2025-01166 and does not believe them to be material to patentability such that they would affect the examiner's

37 CFR §1.8
CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted via the Office electronic filing system, EFS-Web, addressed to Mail Stop Ex Parte Reexam, Central Reexamination Unit, Commissioner of Patents, United States Patent and Trademark Office, PO Box 1450, Alexandria, Virginia 22313-1450 on the date indicated below.

/Jennifer Picini/ August 22, 2025
Jennifer Picini Date

patentability assessment of RE47,720, Reexam Control No. 90/019,702, but submits the attached IDS out of an abundance of caution.

The Commissioner is hereby authorized to charge the $450 petition fee, any deficiency of fees submitted herewith, or credit any overpayment, to Deposit Account No. 601918. If the Examiner believes that a phone interview would be helpful, the Examiner is kindly requested to contact Patent Owner's undersigned attorney.

Date: August 22, 2025

Respectfully submitted,

By: /Andrew Sherman/

Andrew Sherman
Reg. No. 74042
Customer No. 134688
DEVLIN LAW FIRM LLC
1526 Gilpin Ave.
Wilmington, DE 19806
Telephone: (302) 449-9010
Email: asherman@devlinlawfirm.com

Attorney for Patent Owner USTA Technology, LLC

LISTING OF CLAIMS

This listing of claims will replace all prior versions and listings of claims:

1. A method for managing interference in a radio communications network, comprising the steps of:

receiving an aggregated radio signal at a first node in the radio communications network on a plurality of frequencies;

determining a power level for the aggregated radio signal for each frequency in the plurality frequencies;

subtracting the power level for each the frequency from a power limit to produce a power differential for the each frequency; and

instructing a second node in the radio communications network to avoid using a transmission frequency corresponding to a non-positive power differential in the plurality of power differentials to transmit to the first node.

2. The method of claim 1, further comprising the steps of: receiving a transmission from the second node in the radio communications network; and discarding any portion of the transmission carried on the transmission frequency.

3. The method of claim 2, wherein the discarding step comprises applying a filter to the transmission.

4. The method of claim 1, wherein the step of determining a power level is carried out by:

acquiring a plurality of instantaneous power level measurements for each the frequency; and

calculating an average power level based on the plurality of instantaneous power level measurements.

5. The method of claim 1, wherein the step of determining a power level is carried out by:

acquiring a plurality of instantaneous power level measurements for the each frequency; and

calculating a median power level based on the plurality of instantaneous power level measurements.

6. The method of claim 1, further comprising the step of: sending to the second node a request to adjust a transmission power level on a frequency corresponding to a positive power differential in the plurality of power differentials.

7. The method of claim 1, further comprising the step of: instructing a plurality of other nodes in the radio communications network to avoid using the transmission frequency to transmit information to the first node.

8. The method of claim 7, further comprising the steps of:

receiving a transmission from one of the plurality of other nodes; and

discarding any portion of the second transmission carried on a frequency corresponding to a non-positive power differential in the plurality of power differentials.

9. The method of claim 8, further comprising the step of: sending to the one of the plurality of other nodes a request to adjust a transmit power level on a frequency corresponding to a positive power differential in the plurality of power differentials.

10. The method of claim 1, further comprising the steps of:

determining an updated power level for the aggregated radio signal for each frequency in the plurality frequencies;

subtracting the updated power level for each the frequency from the power limit to produce a plurality of updated power differentials; and

instructing the second node to avoid transmitting to the first node on a frequency corresponding to a non-positive updated power differential in the plurality of updated power differentials.

11. The method of claim 1, further comprising the steps of:

generating an optimal waveform profile based on the plurality of power differentials; and reporting the optimal waveform profile to the second node.

12. The method of claim 11, wherein the reporting step is carried out using a common network configuration channel.

13. The method of claim 11, further comprising the step of compressing the optimal waveform profile prior to performing the reporting step.

14. The method of claim 11, wherein the optimal waveform profile specifies a waveform pattern.

15. The method of claim 14, wherein the waveform pattern defines a transmission signal having a power spectral density that varies over time.

16. The method of claim 14, further comprising the steps of:

generating a second optimal waveform profile based on the plurality of power differentials; and

reporting the second optimal waveform profile to a third node in the radio communications network; wherein the second optimal waveform profile specifies a second waveform pattern that is orthogonal to the waveform pattern.

17. The method of claim 1, wherein the plurality of frequencies comprises all of the frequencies in a radio frequency band.

18. The method of claim 1, further comprising the steps of: associating a unique pattern with the second node; and determining whether the transmission contains the unique pattern.

19. A method for managing interference in a radio communications network, comprising the steps of:

receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node;

filtering a transmission signal to remove power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

transmitting the filtered transmission signal to the second node;

separately from the receipt of the instruction, receiving a compressed first feedback from the second node that is based on a received power and one or more frequencies of a first signal transmitted from the first node to the second node;

separately from the receipt of the instruction, receiving a compressed second feedback from a third node that is based on a received power and one or more frequencies of a second signal transmitted from the first node to the third node;

decompressing the compressed first feedback resulting in a decompressed first feedback;

decompressing the compressed second feedback resulting in a decompressed second feedback;

generating one or more data structures based on the decompressed first feedback and the decompressed second feedback;

wherein the filtered transmission signal is a filtered first transmission signal that is transmitted using a first frequency and an 802.11-based orthogonal frequency-division multiplexing (OFDM) protocol via at least one antenna of a plurality of antennas, using a first power that is based on at least one of the one or more data structures; and further comprising:

transmitting, using a second frequency and the 802.11-based OFDM protocol, a filtered second transmission signal, simultaneously with the filtered first transmission signal, to the third node, using a second power that is based on at least one of the one or more data structures.

20. A method for managing interference in a radio communications network, comprising the steps of:

receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node;

filtering a transmission signal to remove power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

transmitting the filtered transmission signal to the second node;

receiving an optimal waveform profile from the second node, the optimal waveform profile being based on a plurality of power measurements for the plurality of frequencies and a power limit; and

conforming the transmission signal to the optimal waveform profile prior to performing the transmitting step.

21. The method of claim 20, further comprising the step of decompressing the optimal waveform profile prior to performing the conforming step.

22. The method of claim 19, wherein the instruction includes a first instruction, and further comprising:

receiving at the first node in the radio communications network a second instruction transmitted from the third node to avoid using a different plurality of frequencies to transmit to the third node; and

filtering a second transmission signal to remove power from the second transmission signal at each frequency in the different plurality of frequencies to be avoided, resulting in the filtered second transmission signal.

23. The method of claim 19, wherein the first power and the second power are the same.

24. The method of claim 19, wherein the first power and the second power are different.

25. The method of claim 19, wherein an update of the compressed first feedback is repeatedly received at time periods of less than one second, and the first power is repeatedly updated based on an updated decompressed first feedback at time periods of less than one second; and an update of the compressed second feedback is repeatedly received at time periods of less than one second, and the second power is repeatedly updated based on an updated decompressed second feedback at time periods of less than one second.

26. The method of claim 19, wherein the filtered first transmission signal and the filtered second transmission signal are transmitted via the same transceiver.

27. The method of claim 19, wherein the filtered first transmission signal and the filtered second transmission signal are transmitted via different transceivers.

28. The method of claim 19, wherein the instruction is received utilizing a dedicated channel.

29. The method of claim 19, wherein the instruction is received via an antenna configured for omnidirectional communication.

30. The method of claim 19, wherein the compressed first feedback and the compressed second feedback are received utilizing a dedicated channel.

31. The method of claim 19, wherein the compressed first feedback and the compressed second feedback are received via an antenna configured for omnidirectional communication.

32. The method of claim 19, wherein the decompressed first feedback and the decompressed second feedback are used to increase spatial separation among transmissions.

33. The method of claim 19, wherein the decompressed first feedback and the decompressed second feedback are used to increase spatial separation among transmissions at the same frequency.

34. The method of claim 19, and further comprising:

receiving a compressed third feedback from a fourth node that characterizes receipt of a third signal sent from the first node to the fourth node, the fourth node being a legacy node;

decompressing the compressed third feedback resulting in a decompressed third feedback;

transmitting, using a third frequency and another 802.11-based OFDM protocol, the third transmission signal to the fourth node using a transceiver separate from one or more other transceivers used to transmit the filtered first transmission signal and the filtered second transmission signal, and further using a third power that is based on the decompressed third feedback.

35. The method of claim 34, wherein the third transmission signal is transmitted simultaneously with the filtered first transmission signal and the filtered second transmission signal via at least one different antenna of the plurality of antennas.

36. The method of claim 19, wherein the compressed first feedback is based on a received power at a plurality of frequencies via which the first signal is received.

37. The method of claim 19, wherein the instruction is received prior to the receipt of the compressed first feedback.

38. The method of claim 19, wherein the filtered second transmission signal is transmitted simultaneously with the filtered first transmission signal via the same plurality of antennas.

39. The method of claim 19, wherein the first frequency is selected as a function of the compressed first feedback, and the second frequency is selected as a function of the compressed second feedback.

40. The method of claim 19, wherein the instruction includes a 802.11 clear to send (CTS) instruction.

41. The method of claim 19, wherein the instruction includes a 802.11 request to send (RTS) instruction.

42. The method of claim 19, wherein the filtered second transmission signal is transmitted simultaneously with the filtered first transmission signal via at least one different antenna of the plurality of antennas.

43. The method of claim 19, wherein the filtered second transmission signal is transmitted simultaneously with the filtered first transmission signal using the at least one antenna of the plurality of antennas.

44. The method of claim 19, wherein at least one of:

the first signal includes a data signal; the first signal includes an aggregate signal;

the compressed first feedback is configured to ensure that transmissions from all neighbors of the first node are received at a same power level;

the compressed first feedback is configured to at least one of: minimize a transmit power on reliable links, maximize an ability to achieve spatial separation among transmissions on a same frequency, minimize network self-interference, improve low probability of intercept (LPI), or lower probability of detection (LPD);

the compressed first feedback and the compressed second feedback are received simultaneously;

at least one of the compressed first feedback or the compressed second feedback is received separately from the receipt of the instruction, by being received before the instruction is received;

at least one of the compressed first feedback or the compressed second feedback is received separately from the receipt of the instruction, by being received after the instruction is received;

the one or more frequencies of the first signal includes a frequency band;

the one or more frequencies of the second signal includes a frequency band;

the one or more frequencies of the first signal includes a first frequency band, and the one or more frequencies of the second signal includes a second frequency band;

a single data structure is generated based on the decompressed first feedback and the decompressed second feedback;

a first data structure is generated based on the decompressed first feedback, and a second data structure is generated based on the decompressed second feedback;

a first data structure is generated based on the decompressed first feedback, where the first power is based on the first data structure, and a second data structure is generated based on the decompressed second feedback, where the second power is based on the second data structure;

the first power and the second power differ in terms of power level;

the steps are performed in the order listed;

the radio communications network includes an 802.11 network;

the radio communications network includes an 802.11a network; the radio communications network includes an 802.11g network;

the at least one antenna includes multiple antennas;

the at least one antenna includes at least one omnidirectional antenna;

the at least one antenna includes at least one directional antenna;

the first frequency includes a first frequency band;

the second frequency includes a second frequency band;

the first frequency is part of a first frequency band;

the second frequency is part of a second frequency band;

the first frequency includes a first frequency band, and the second frequency includes a second frequency band, where the first frequency band and the second frequency band do not overlap;

interference in the radio communications network is managed;

the first node is a mobile node and the second node is a non-mobile node;

the second node is a mobile node and the first node is a non-mobile node; the instruction sets forth the plurality of frequencies to avoid using;

the instruction specifies the plurality of frequencies to avoid using;

a purpose of the instruction is to avoid using the plurality of frequencies;

a purpose of the instruction is to avoid using the plurality of frequencies, where the purpose is accomplished by specifying the plurality of frequencies to avoid using;

a purpose of the instruction is to avoid using the plurality of frequencies, where the purpose is accomplished by specifying one or more frequencies to use;

a purpose of the instruction is to avoid using the plurality of frequencies, where the purpose is accomplished by specifying one or more frequencies to use, the one or more frequencies not including the plurality of frequencies;

the instruction to avoid the plurality of frequencies sets forth one or more frequencies to use;

the instruction to avoid the plurality of frequencies specifies one or more frequencies to use;

the instruction to avoid the plurality of frequencies assigns one or more frequencies to use;

the instruction to avoid the plurality of frequencies does not specify the plurality of frequencies;

the instruction to avoid the plurality of frequencies sets forth one or more frequencies to use, thereby resulting in the avoidance of using the plurality of frequencies;

a purpose of the filtering is to remove the power from the transmission signal at each frequency in the plurality of frequencies to be avoided, where the purpose is accomplished by specifying one or more frequencies to which the power is to be applied;

a purpose of the filtering is to remove the power from the transmission signal at each frequency in the plurality of frequencies to be avoided, where the purpose is accomplished by specifying the plurality of frequencies to be avoided;

the filtering suppresses or otherwise minimizes waves or oscillations at each frequency in the plurality of frequencies to be avoided;

the filtering suppresses or otherwise minimizes waves or oscillations at each frequency in the plurality of frequencies to be avoided, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the filtering removes all power from the transmission signal;

the filtering removes some power from the transmission signal;

the filtering discards one or more portions of the transmission signal at each of the plurality of frequencies;

the filtering utilizes transmit excision;

the filtering utilizes compression;

the filtering identifies certain one or more frequencies in connection with which power is applied, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by an adjustment in relation to power previously used in connection with the transmission signal;

the removal of power from the transmission signal at each frequency in the plurality of frequencies is accomplished by adjusting a processing of the transmission signal so that power that was previously used in connection with the transmission signal at each frequency in the

plurality of frequencies to be avoided, is no longer used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by setting a waveform profile that results in no power being applied in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by pre-processing the transmission signal, before any power is applied, so that power, which would otherwise be applied in connection with the transmission signal at each frequency in the plurality of frequencies, is not applied in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by pre-processing the transmission signal, before any power is applied, so that no power is applied in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the transmission signal is generated so as to not include power at each frequency in the plurality of frequencies to be avoided;

the transmission signal is generated so as to not include power at each frequency in the plurality of frequencies to be avoided, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the transmission signal is pre-processed so as to not include power at each frequency in the plurality of frequencies to be avoided, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the filtering is performed using an output filter;

the filtering is performed using an optimal matched filter;

the filtering is performed using a band selection filter; the filtering is performed using a median filter; or

the filtering is performed using a nonlinear filter.

45. The method of claim 19, wherein the removal of power from the transmission signal at

each frequency in the plurality of frequencies to be avoided is accomplished by adjusting a processing of the transmission signal so that certain power that was previously used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided before the instruction is received, is no longer used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided in accordance with the instruction.

46. The method of claim 19, wherein the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by adjusting a processing of the transmission signal so that certain power that was previously used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided before the instruction is received, is no longer used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided in accordance with the instruction, which specifies at least one frequency to use so as to avoid using the plurality of frequencies to be avoided in order to transmit to the second node.

47. The method of claim 19, wherein network forwarding decisions are guided using instantaneous information from a media access control (MAC) layer.

48. The method of claim 47, wherein the network forwarding decisions are guided to eliminate a dominant end-to-end latency effect of channel access delay at at least one hop.

49. The method of claim 19, wherein frequency channels are reused in order to increase spatial reuse across multiple basic service sets.

50. The method of claim 19, wherein RTS/CTS signaling is extended such that frequency channels are reused in order to increase spatial reuse across multiple basic service sets.

51. The method of claim 19, wherein RTS/CTS signaling is extended such that frequency channels are reused in order to increase spatial reuse across multiple basic service sets, to accommodate legacy access points.

52. A method for managing interference in a radio communications network, comprising the steps of:

receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node;

filtering a transmission signal to remove power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

transmitting the filtered transmission signal to the second node;

wherein the instruction includes a first instruction and the filtered transmission signal includes a filtered first transmission signal that is transmitted to the second node using a first power via an 802.11-based orthogonal frequency-division multiplexing (OFDM) protocol, and further comprising:

receiving at the first node in the radio communications network a second instruction transmitted from a third node in the radio communications network to avoid using a different plurality of frequencies to transmit to the third node;

filtering a second transmission signal to remove power from the second transmission signal at each frequency in the different plurality of frequencies to be avoided; and

transmitting, using a second power via the 802.11-based OFDM protocol and simultaneously with the filtered first transmission signal, the filtered second transmission signal to the third node.

53. A method for managing interference in a radio communications network, comprising the steps of:

receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node;

filtering a transmission signal to remove power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

transmitting the filtered transmission signal to the second node;

receiving a compressed first feedback from the second node that characterizes receipt of a first signal sent from the first node to the second node;

receiving a compressed second feedback from a third node that characterizes receipt of a second signal sent from the first node to the third node;

decompressing the compressed first feedback resulting in a decompressed first feedback; and

decompressing the compressed second feedback resulting in a decompressed second feedback;

wherein the filtered transmission signal is a filtered first transmission signal that is transmitted to the second node using an 802.11-based orthogonal frequency-division multiplexing (OFDM) protocol via at least one antenna of a plurality of antennas, using a first power that is based on the decompressed first feedback; and further comprising:

transmitting, using the 802.11-based OFDM protocol, a filtered second transmission signal, simultaneously with the filtered first transmission signal, to the third node using a second power that is based on the decompressed second feedback.

54. The method of claim 53, wherein the instruction includes a first instruction, and further comprising:

receiving at the first node in the radio communications network a second instruction transmitted from the third node to avoid using a different plurality of frequencies to transmit to the third node; and

filtering a second transmission signal to remove power from the second transmission signal at each frequency in the different plurality of frequencies to be avoided, resulting in the filtered second transmission signal.

55. The method of claim 53, wherein the first power and the second power are the same.

56. The method of claim 53, wherein the first power and the second power are different.

57. The method of claim 53, and further comprising:

generating a first data structure based on the decompressed first feedback, where the first power is based on the first data structure; and

generating a second data structure based on the decompressed second feedback, where the second power is based on the second data structure.

58. The method of claim 57, wherein the first data structure and the second data structure are different.

59. The method of claim 57, wherein the first data structure and the second data structure are orthogonal.

60. The method of claim 57, wherein the first data structure is unique to the second node, and the second data structure is unique to the third node.

61. The method of claim 57, wherein the first data structure is a first profile, and the second data structure is a second profile.

62. The method of claim 57, wherein the first data structure is a first optimal waveform profile.

63. The method of claim 53, and further comprising:

generating a single data structure based on the decompressed first feedback and the decompressed second feedback, where both the first power and the second power are based on the single data structure.

64. The method of claim 53, wherein the filtered second transmission signal is transmitted simultaneously with the filtered first transmission signal via the same plurality of antennas.

65. The method of claim 53, wherein the filtered second transmission signal is transmitted simultaneously with the filtered first transmission signal via at least one different antenna of the plurality of antennas.

66. The method of claim 53, wherein the filtered second transmission signal is transmitted simultaneously with the filtered first transmission signal via the at least one antenna of the plurality of antennas.

67. The method of claim 53, wherein an update of the compressed first feedback is repeatedly received, and the first power is repeatedly updated based on an updated decompressed first feedback; and an update of the compressed second feedback is repeatedly received, and the second power is repeatedly updated based on an updated decompressed second feedback.

68. The method of claim 53, wherein an update of the compressed first feedback is repeatedly received in real-time, and the first power is repeatedly updated in real-time based on an updated decompressed first feedback; and an update of the compressed second feedback is repeatedly received in real-time, and the second power is repeatedly updated in real-time based on an updated decompressed second feedback.

69. The method of claim 53, wherein an update of the compressed first feedback is repeatedly received at time periods of less than one second, and the first power is repeatedly updated based on an updated decompressed first feedback at time periods of less than one second; and an update of the compressed second feedback is repeatedly received at time periods of less than one second, and the second power is repeatedly updated based on an updated decompressed second feedback at time periods of less than one second.

70. The method of claim 53, wherein the filtered first transmission signal and the filtered second transmission signal are sent via the same transceiver.

71. The method of claim 53, wherein the filtered first transmission signal and the filtered second transmission signal are sent via different transceivers.

72. The method of claim 53, wherein the compressed first feedback and the compressed second feedback are received utilizing a dedicated channel.

73. The method of claim 53, wherein the compressed first feedback and the compressed second feedback are received via an antenna configured for omnidirectional communication.

74. The method of claim 53, wherein the decompressed first feedback and the decompressed second feedback are used to increase spatial separation among transmissions.

75. The method of claim 53, wherein the decompressed first feedback and the decompressed second feedback are used to increase spatial separation among transmissions at the same frequency.

76. The method of claim 53, and further comprising:

receiving a compressed third feedback from a fourth node that characterizes receipt of a third signal sent from the first node to the fourth node, the fourth node being a legacy node;

decompressing the compressed third feedback resulting in a decompressed third feedback;

transmitting, using a third frequency and another 802.11-based OFDM protocol, the third transmission signal to the fourth node using a third power that is based on the decompressed third feedback.

77. The method of claim 53, wherein the compressed first feedback is based on a received power and one or more frequencies via which the first signal is communicated.

78. The method of claim 53, wherein the compressed first feedback is based on a received power at a plurality of frequencies via which the first signal is communicated.

79. The method of claim 53, wherein the compressed first feedback is based on a series of power values as a function of frequency.

80. The method of claim 53, wherein the compressed first feedback includes a data structure that is based on a series of power values as a function of frequency.

81. The method of claim 53, wherein the instruction is received prior to the receipt of the compressed first feedback.

82. The method of claim 53, wherein the instruction is received separately with respect to the receipt of the compressed first feedback.

83. The method of claim 53, wherein at least three transmission signals are capable of being simultaneously transmitted to at least three different devices, using the same multiple antennas.

84. The method of claim 53, wherein at least three transmission signals are capable of being simultaneously transmitted to at least three different devices, using at least one different antenna.

85. The method of claim 53, wherein the instruction includes a request to send (RTS) instruction.

86. The method of claim 53, wherein the instruction includes a 802.11 clear to send (CTS) instruction.

87. The method of claim 53, wherein the filtered first transmission signal is transmitted using a frequency band that is selected based on the instruction and the filtered second transmission signal is transmitted using the frequency band that is selected based on another instruction received from the third node, where the filtered first transmission signal is transmitted using a first frequency in the frequency band and the filtered second transmission signal is transmitted using a second frequency in the frequency band.

88. The method of claim 53, wherein the filtered first transmission signal is transmitted using a first frequency and the filtered second transmission signal is transmitted using a second frequency.

89. The method of claim 53, wherein the filtered first transmission signal and the filtered second transmission signal are transmitted using the same one or more frequencies.

90. The method of claim 53, wherein the filtered first transmission signal and the filtered second transmission signal are transmitted using the same frequency band.

91. The method of claim 53, wherein the filtered first transmission signal is transmitted using a first frequency that is based on the instruction and the filtered second transmission signal is transmitted using a second frequency that is based on another instruction received from the third node.

92. The method of claim 53, wherein the filtered first transmission signal is transmitted using a frequency that is based on the instruction and the filtered second transmission signal is transmitted using the frequency that is based on another instruction received from the third node.

93. The method of claim 53, wherein the filtered first transmission signal is transmitted using a frequency band that is selected based on the instruction and the filtered second transmission signal is transmitted using the frequency band that is selected based on another instruction received from the third node.

94. The method of claim 53, wherein at least one of:

the first signal includes a data signal;

the first signal includes an aggregate signal;

the first signal includes a first data signal, and the second signal includes a second data signal;

the first and second signals are reflected in an aggregate signal;

the compressed first feedback is combined with the instruction;

the compressed first feedback is received with the instruction;

the compressed first feedback is configured to ensure that transmissions from all neighbors of the first node are received at a same power level;

the compressed first feedback is configured to at least one of: minimize a transmit power on reliable links, maximize an ability to achieve spatial separation among transmissions on a

Ex.1036 / IPR2025-00838 / Page 21 of 26
Intel Corporation and Lenovo (United States) Inc. v. USTA Technology, LLC

same frequency, minimize network self-interference, improve low probability of intercept (LPI), or lower probability of detection (LPD);

the compressed first feedback and the compressed second feedback are received simultaneously;

at least one of the compressed first feedback or the compressed second feedback is received before the instruction is received;

at least one of the compressed first feedback or the compressed second feedback is received after the instruction is received;

the steps are performed in the order listed;

the radio communications network includes an 802.11 network;

the radio communications network includes an 802.11a network;

the radio communications network includes an 802.11g network;

the at least one antenna includes multiple antennas; the at least one antenna includes at least one omnidirectional antenna;

the at least one antenna includes at least one directional antenna;

interference in the radio communications network is managed;

the first node is a mobile node and the second node is a non-mobile node;

the second node is a mobile node and the first node is a non-mobile node;

the instruction sets forth the plurality of frequencies to avoid using;

the instruction specifies the plurality of frequencies to avoid using;

a purpose of the instruction is to avoid using the plurality of frequencies;

a purpose of the instruction is to avoid using the plurality of frequencies, where the purpose is accomplished by specifying the plurality of frequencies to avoid using;

a purpose of the instruction is to avoid using the plurality of frequencies, where the purpose is accomplished by specifying one or more frequencies to use;

a purpose of the instruction is to avoid using the plurality of frequencies, where the purpose is accomplished by specifying one or more frequencies to use, the one or more frequencies not including the plurality of frequencies;

the instruction to avoid the plurality of frequencies sets forth one or more frequencies to use;

the instruction to avoid the plurality of frequencies specifies one or more frequencies to use;

the instruction to avoid the plurality of frequencies assigns one or more frequencies to use;

the instruction to avoid the plurality of frequencies does not specify the plurality of frequencies;

the instruction to avoid the plurality of frequencies sets forth one or more frequencies to use, thereby resulting in the avoidance of using the plurality of frequencies;

a purpose of the filtering is to remove the power from the transmission signal at each frequency in the plurality of frequencies to be avoided, where the purpose is accomplished by specifying one or more frequencies to which the power is to be applied;

a purpose of the filtering is to remove the power from the transmission signal at each frequency in the plurality of frequencies to be avoided, where the purpose is accomplished by specifying the plurality of frequencies to be avoided;

the filtering suppresses or otherwise minimizes waves or oscillations at each frequency in the plurality of frequencies to be avoided;

the filtering suppresses or otherwise minimizes waves or oscillations at each frequency in the plurality of frequencies to be avoided, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the filtering removes all power from the transmission signal;

the filtering removes some power from the transmission signal;

the filtering discards one or more portions of the transmission signal at each of the plurality of frequencies;

the filtering utilizes transmit excision;

the filtering utilizes compression;

the filtering identifies certain one or more frequencies in connection with which power is applied, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by an adjustment in relation to power previously used in connection with the transmission signal;

the removal of power from the transmission signal at each frequency in the plurality of frequencies is accomplished by adjusting a processing of the transmission signal so that power that was previously used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided, is no longer used in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by setting a waveform profile that results in no power being applied in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by pre-processing the transmission signal, before any power is applied, so that power, which would otherwise be applied in connection with the transmission signal at each frequency in the plurality of frequencies, is not applied in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the removal of power from the transmission signal at each frequency in the plurality of frequencies to be avoided is accomplished by pre-processing the transmission signal, before any power is applied, so that no power is applied in connection with the transmission signal at each frequency in the plurality of frequencies to be avoided;

the transmission signal includes a plurality of packets;

the transmission signal includes a plurality of different transmissions;

the transmission signal includes a plurality of transmissions to the second node;

the transmission signal includes a plurality of differently-timed transmissions to the second node;

the transmission signal includes a plurality of transmission components to the second node, each with different power levels;

the transmission signal includes a plurality of transmission components to the second node, each with different power levels as a result of different instances of the filtering;

the transmission signal is generated so as to not include power at each frequency in the plurality of frequencies to be avoided;

the transmission signal is generated so as to not include power at each frequency in the plurality of frequencies to be avoided, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the transmission signal is pre-processed so as to not include power at each frequency in the plurality of frequencies to be avoided, thereby resulting in the removal of the power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

the filtering is performed using an output filter;

the filtering is performed using an optimal matched filter;

the filtering is performed using a band selection filter;

the filtering is performed using a median filter; or

the filtering is performed using a nonlinear filter.

95. A method for managing interference in a radio communications network, comprising the steps of:

receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node;

filtering a transmission signal to remove power from the transmission signal at each frequency in the plurality of frequencies to be avoided;

transmitting the filtered transmission signal to the second node;

separately from the receipt of the instruction, receiving a particular signal at the first node that is transmitted from the second node;

generating a feedback based on a received power and one or more frequencies via which the particular signal is received;

compressing the feedback; and

transmitting the compressed feedback from the first node to the second node, for use by the second node in determining a transmit power with which the second node transmits to the first node via at least one antenna of a plurality of antennas, while simultaneously transmitting to one or more other nodes;

wherein the filtered transmission signal is transmitted to the second node using an 802.11-based orthogonal frequency-division multiplexing (OFDM) protocol;

wherein an update of the compressed feedback is repeatedly generated, compressed, and transmitted at time periods of less than one second; so that the transmit power is repeatedly updated based thereupon at time periods of less than one second.

96. The method of claim 95, wherein the instruction includes a first instruction and the filtered transmission signal includes a filtered first transmission signal, and further comprising:

receiving at the first node in the radio communications network a second instruction transmitted from a third node in the radio communications network to avoid using a different plurality of frequencies to transmit to the third node;

filtering a second transmission signal to remove power from the second transmission signal at each frequency in the different plurality of frequencies to be avoided; and

transmitting the filtered second transmission signal to the third node.

Ex.1036 / IPR2025-00838 / Page 26 of 26
Intel Corporation and Lenovo (United States) Inc. v. USTA Technology, LLC