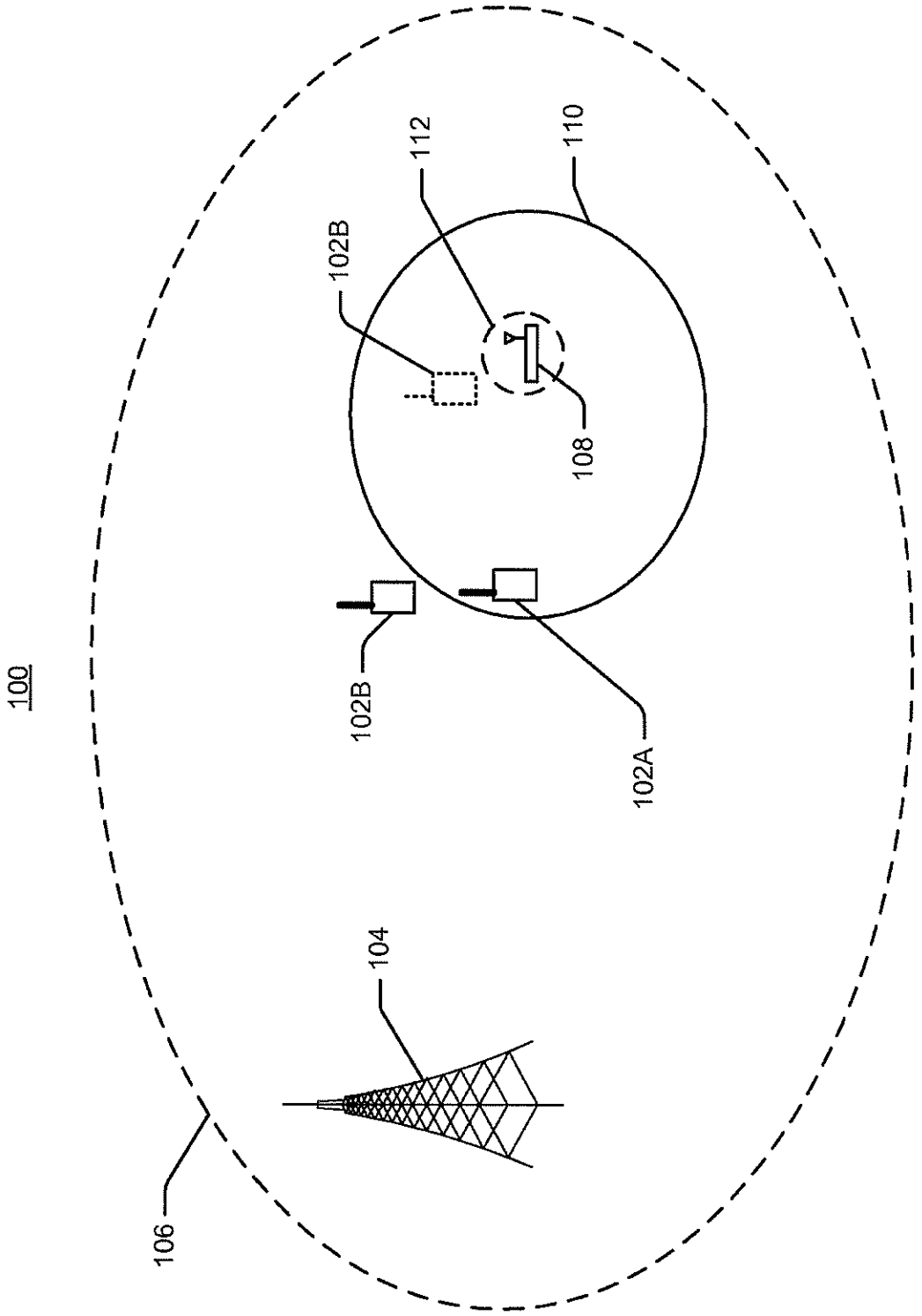


FIG. 1

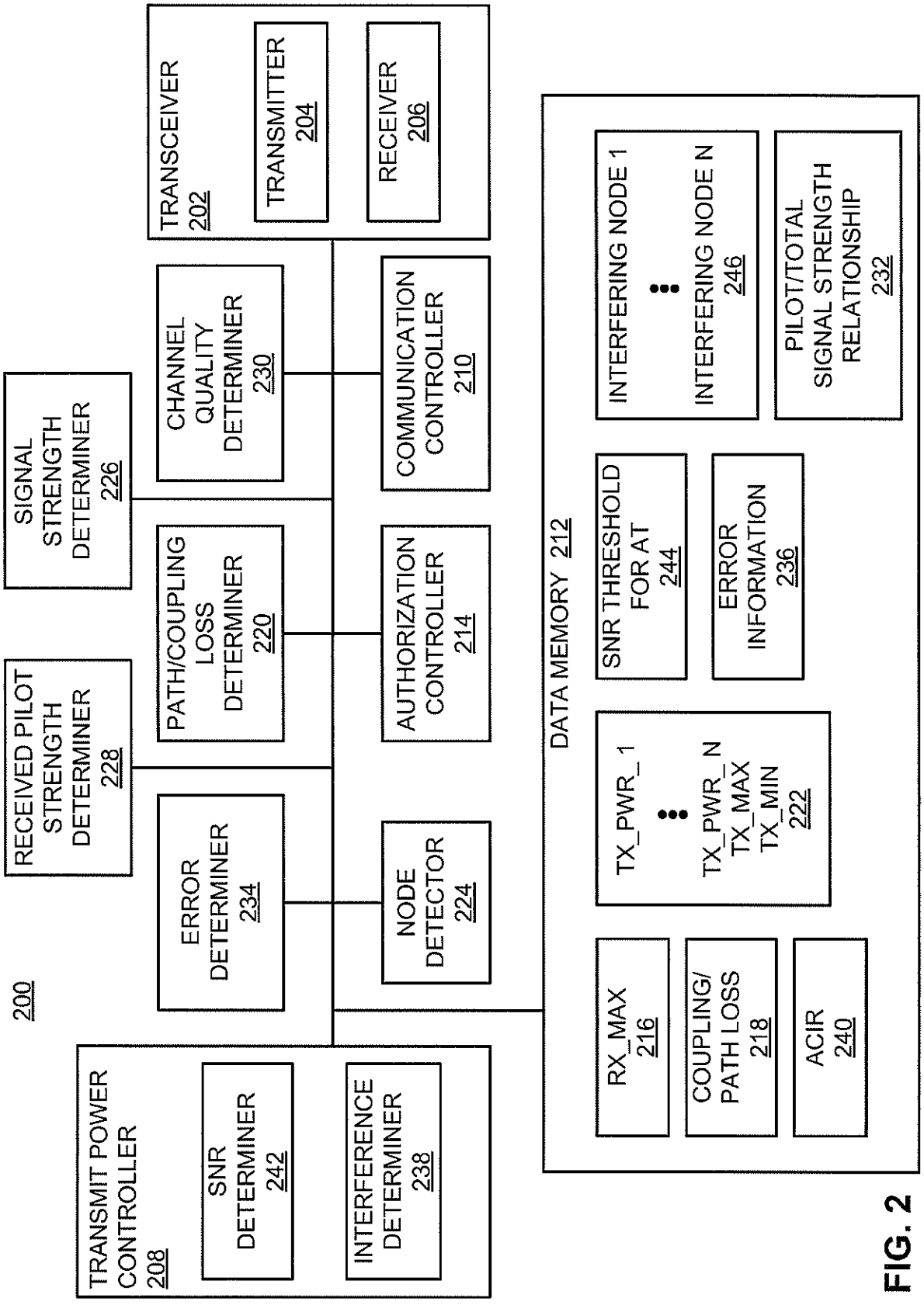

200
TRANSCEIVER 202
TRANSMITTER 204
RECEIVER 206
SIGNAL STRENGTH DETERMINER 226
CHANNEL QUALITY DETERMINER 230
COMMUNICATION CONTROLLER 210
RECEIVED PILOT STRENGTH DETERMINER 228
PATH/COUPLING LOSS DETERMINER 220
AUTHORIZATION CONTROLLER 214
ERROR DETERMINER 234
NODE DETECTOR 224
TRANSMIT POWER CONTROLLER 208
SNR DETERMINER 242
INTERFERENCE DETERMINER 238
DATA MEMORY 212
INTERFERING NODE 1
INTERFERING NODE N 246
PILOT/TOTAL SIGNAL STRENGTH RELATIONSHIP 232
SNR THRESHOLD FOR AT 244
ERROR INFORMATION 236
TX_PWR_1
TX_PWR_N
TX_MAX
TX_MIN 222
RX_MAX 216
COUPLING/ PATH LOSS 218
ACIR 240

FIG. 2

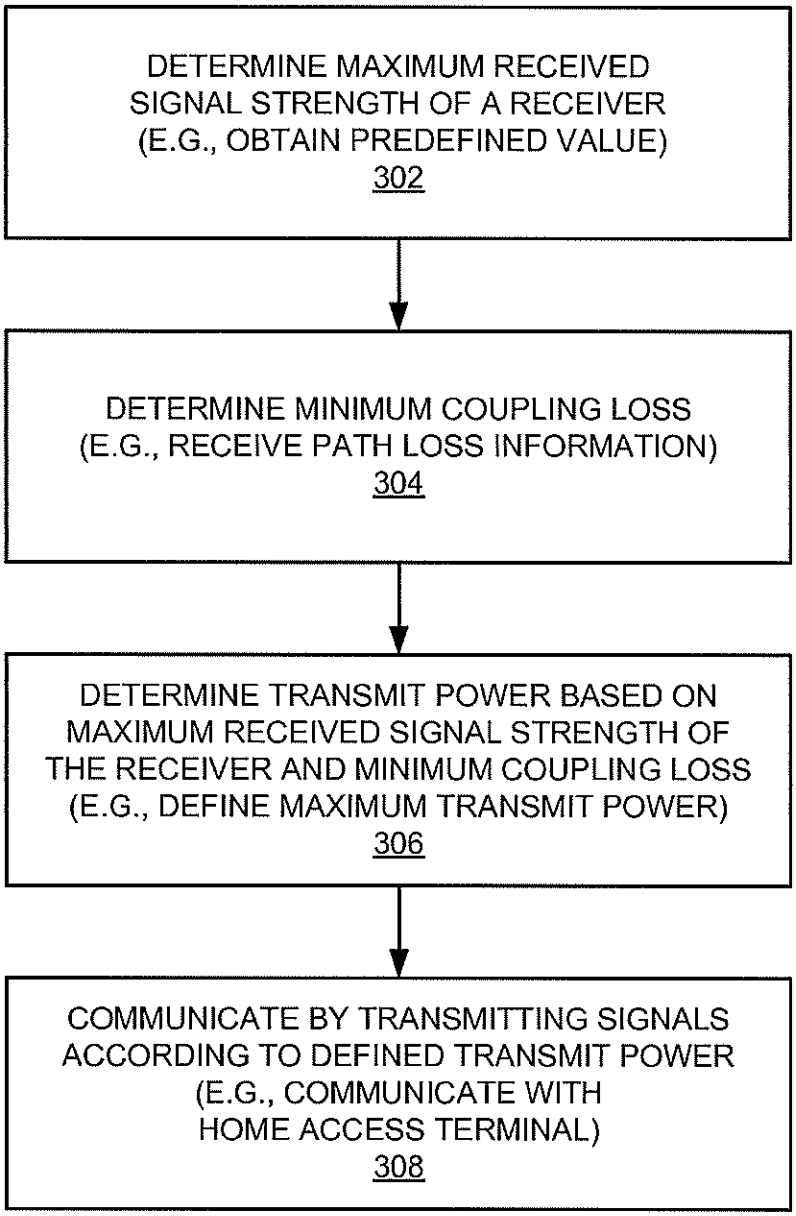

DETERMINE MAXIMUM RECEIVED SIGNAL STRENGTH OF A RECEIVER (E.G., OBTAIN PREDEFINED VALUE)
302
DETERMINE MINIMUM COUPLING LOSS (E.G., RECEIVE PATH LOSS INFORMATION)
304
DETERMINE TRANSMIT POWER BASED ON MAXIMUM RECEIVED SIGNAL STRENGTH OF THE RECEIVER AND MINIMUM COUPLING LOSS (E.G., DEFINE MAXIMUM TRANSMIT POWER)
306
COMMUNICATE BY TRANSMITTING SIGNALS ACCORDING TO DEFINED TRANSMIT POWER (E.G., COMMUNICATE WITH HOME ACCESS TERMINAL)
308

FIG. 3

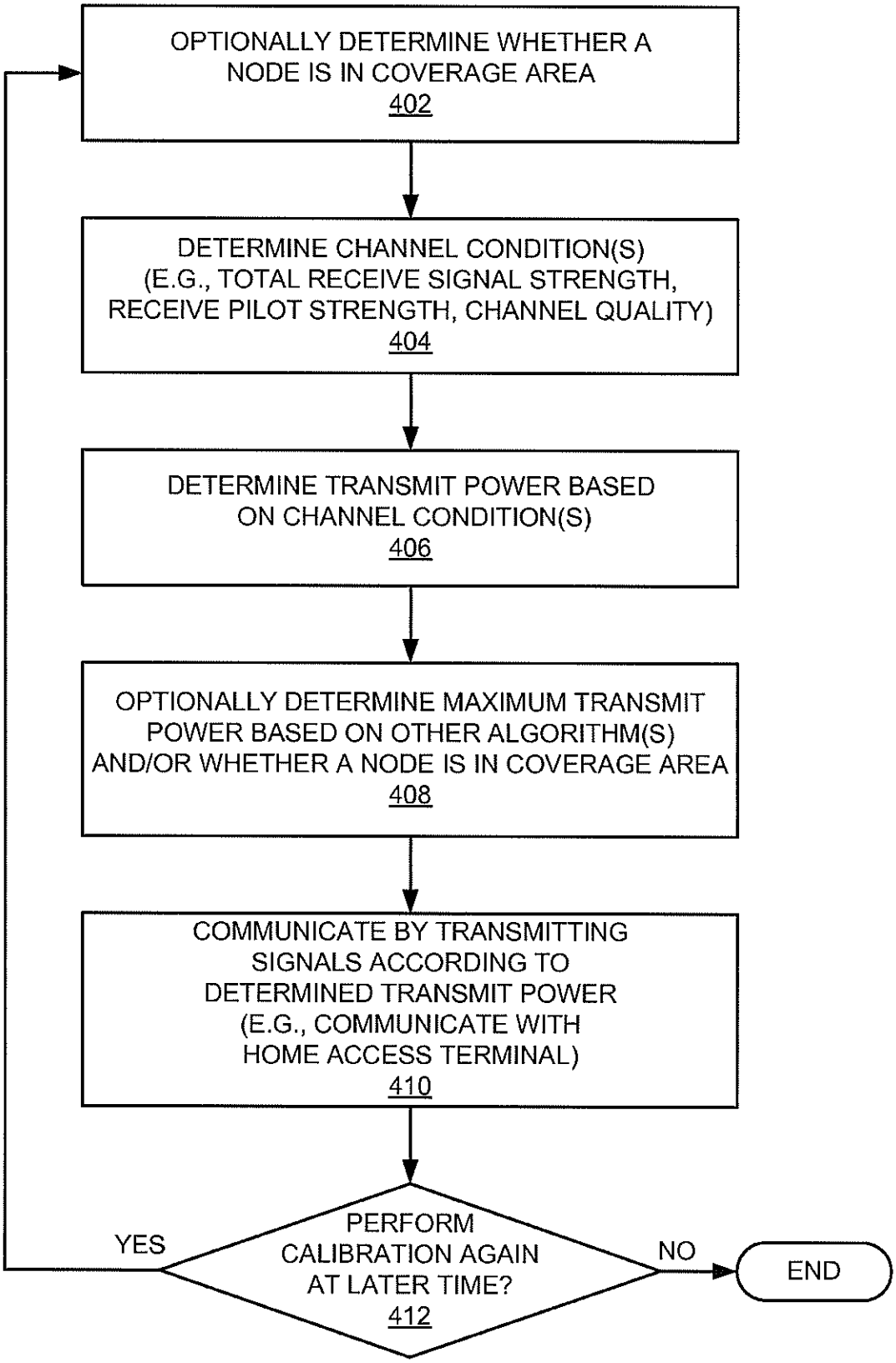

OPTIONALLY DETERMINE WHETHER A NODE IS IN COVERAGE AREA
402
DETERMINE CHANNEL CONDITION(S) (E.G., TOTAL RECEIVE SIGNAL STRENGTH, RECEIVE PILOT STRENGTH, CHANNEL QUALITY)
404
DETERMINE TRANSMIT POWER BASED ON CHANNEL CONDITION(S)
406
OPTIONALLY DETERMINE MAXIMUM TRANSMIT POWER BASED ON OTHER ALGORITHM(S) AND/OR WHETHER A NODE IS IN COVERAGE AREA
408
COMMUNICATE BY TRANSMITTING SIGNALS ACCORDING TO DETERMINED TRANSMIT POWER (E.G., COMMUNICATE WITH HOME ACCESS TERMINAL)
410
PERFORM CALIBRATION AGAIN AT LATER TIME?
412
YES
NO
END

FIG. 4

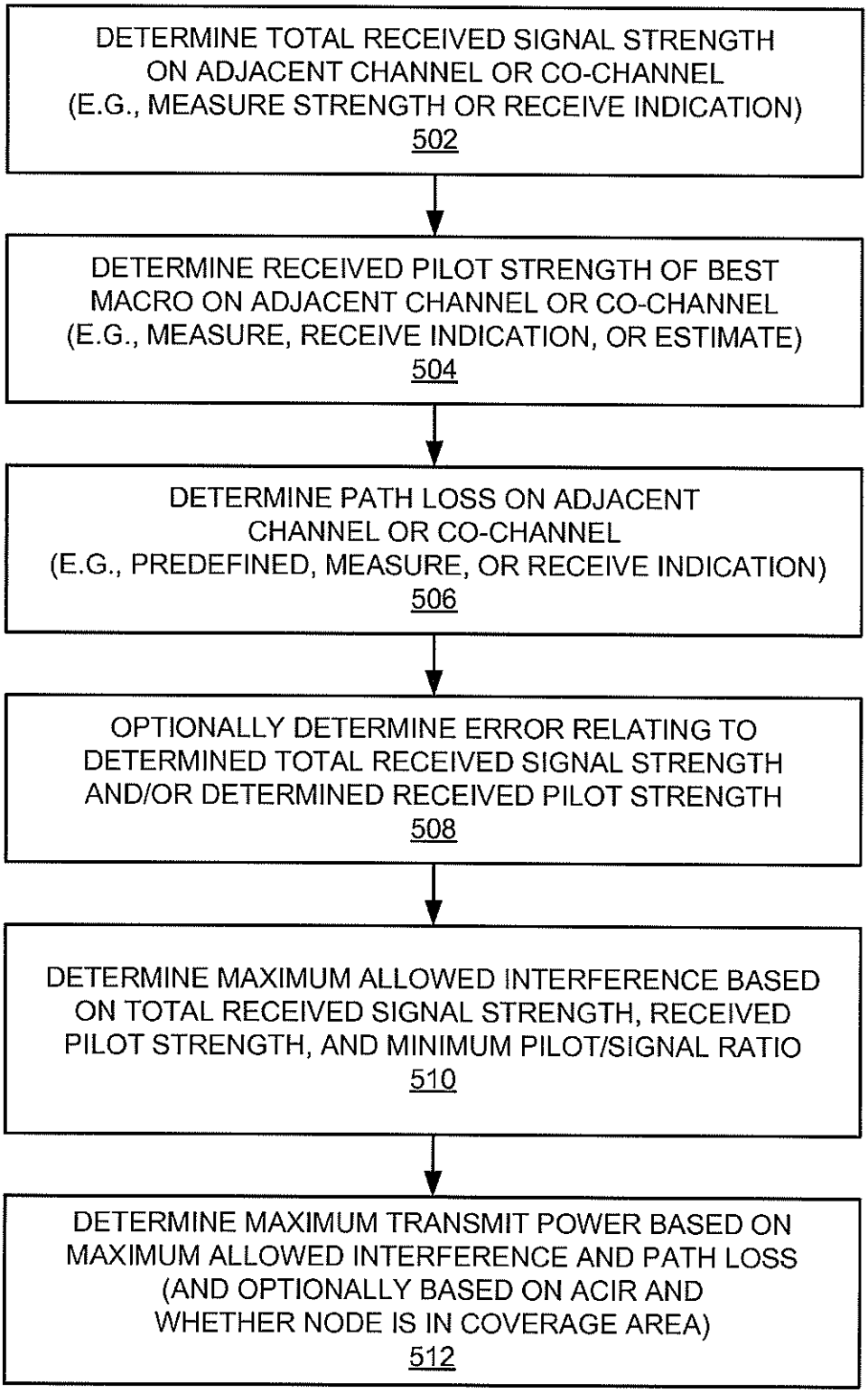

DETERMINE TOTAL RECEIVED SIGNAL STRENGTH ON ADJACENT CHANNEL OR CO-CHANNEL (E.G., MEASURE STRENGTH OR RECEIVE INDICATION) 502
DETERMINE RECEIVED PILOT STRENGTH OF BEST MACRO ON ADJACENT CHANNEL OR CO-CHANNEL (E.G., MEASURE, RECEIVE INDICATION, OR ESTIMATE) 504
DETERMINE PATH LOSS ON ADJACENT CHANNEL OR CO-CHANNEL (E.G., PREDEFINED, MEASURE, OR RECEIVE INDICATION) 506
OPTIONALLY DETERMINE ERROR RELATING TO DETERMINED TOTAL RECEIVED SIGNAL STRENGTH AND/OR DETERMINED RECEIVED PILOT STRENGTH 508
DETERMINE MAXIMUM ALLOWED INTERFERENCE BASED ON TOTAL RECEIVED SIGNAL STRENGTH, RECEIVED PILOT STRENGTH, AND MINIMUM PILOT/SIGNAL RATIO 510
DETERMINE MAXIMUM TRANSMIT POWER BASED ON MAXIMUM ALLOWED INTERFERENCE AND PATH LOSS (AND OPTIONALLY BASED ON ACIR AND WHETHER NODE IS IN COVERAGE AREA) 512

FIG. 5

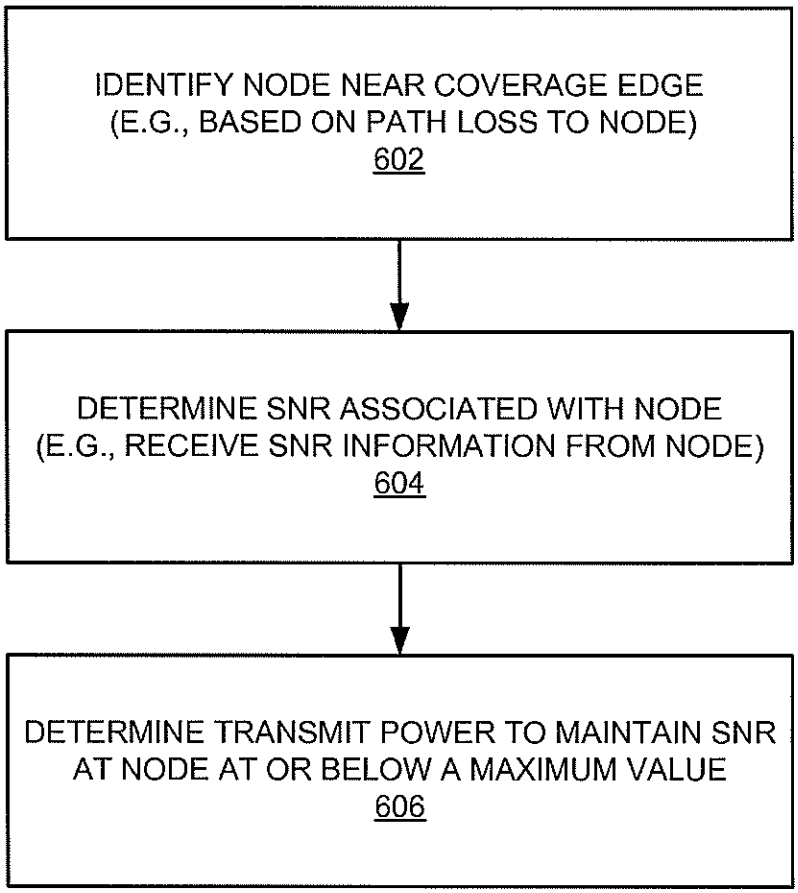

IDENTIFY NODE NEAR COVERAGE EDGE
(E.G., BASED ON PATH LOSS TO NODE)
602
DETERMINE SNR ASSOCIATED WITH NODE
(E.G., RECEIVE SNR INFORMATION FROM NODE)
604
DETERMINE TRANSMIT POWER TO MAINTAIN SNR
AT NODE AT OR BELOW A MAXIMUM VALUE
606

FIG. 6

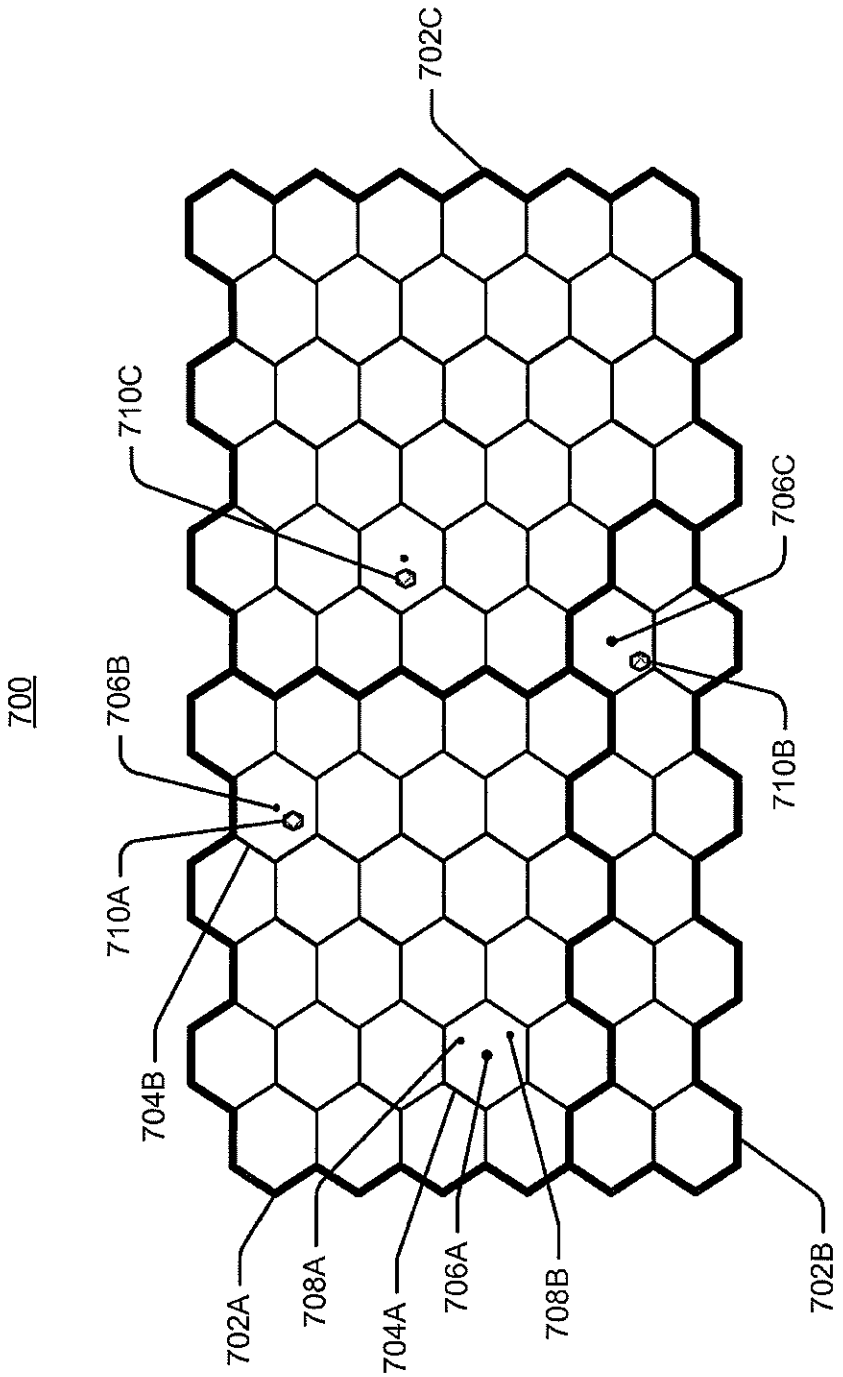

700
702C
710C
706C
706B
710B
710A
704B
702A
708A
704A
706A
708B
702B

FIG. 7

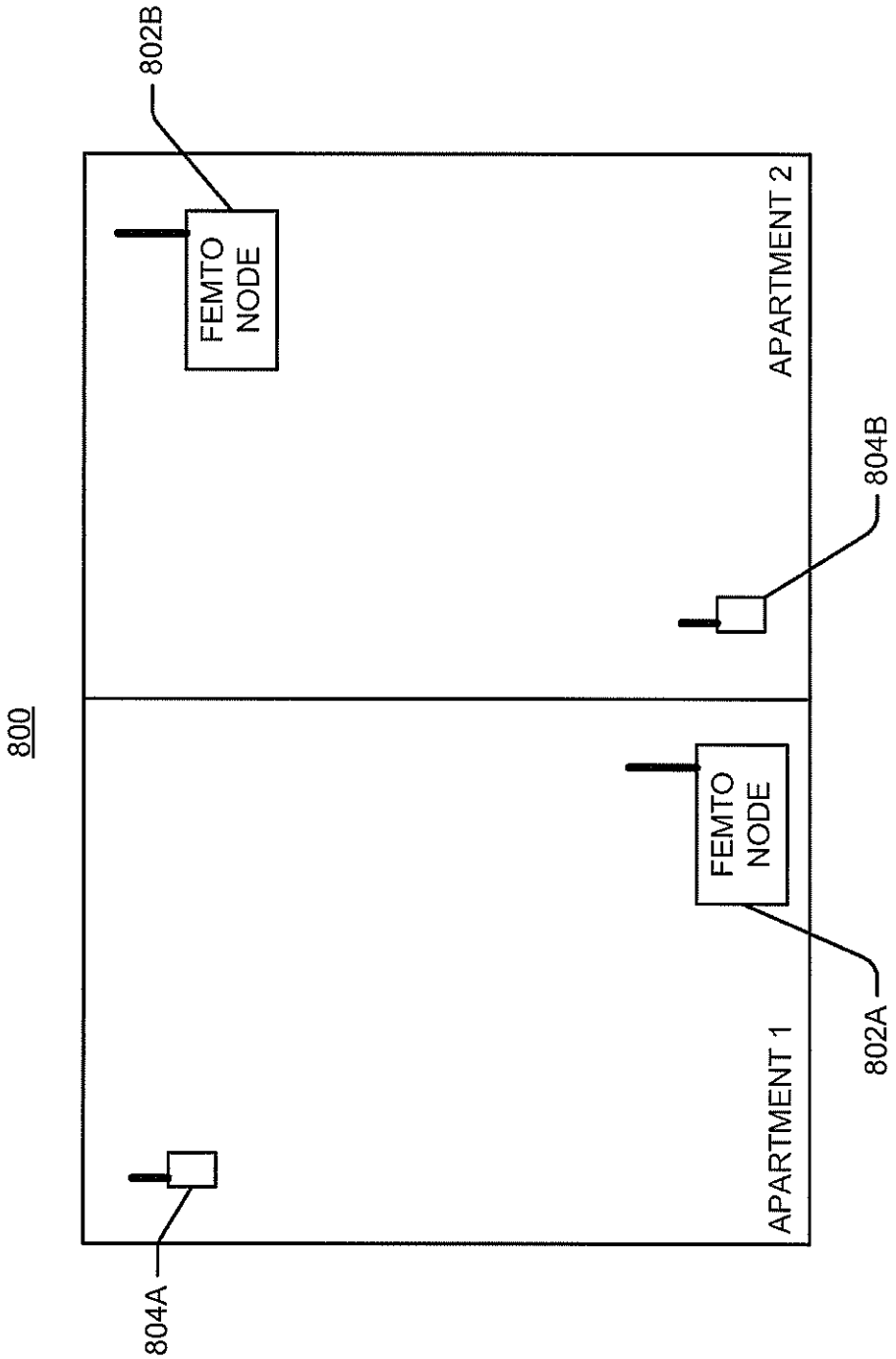

800
APARTMENT 1
APARTMENT 2
FEMTO NODE
FEMTO NODE
802A
802B
804A
804B

FIG. 8

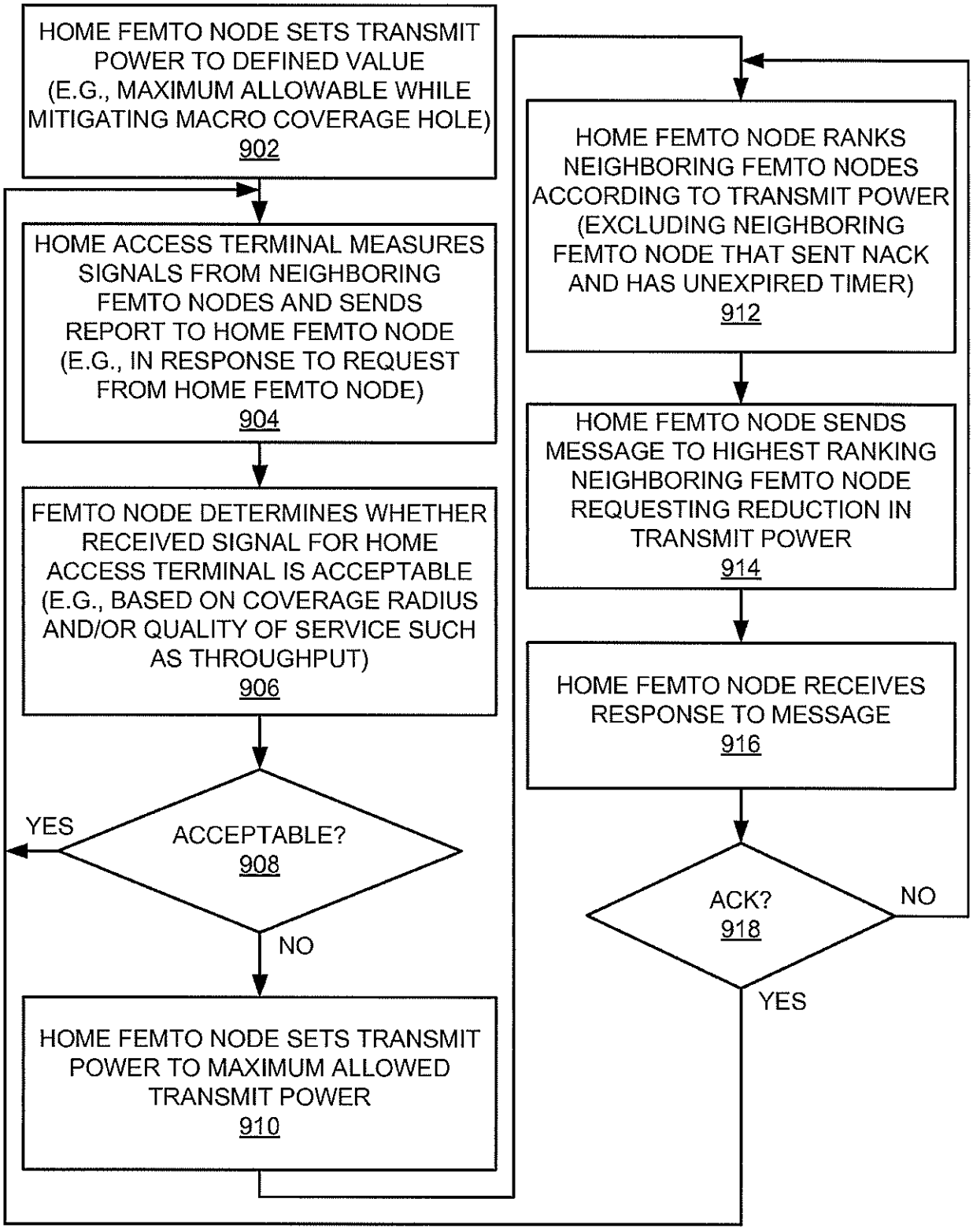

HOME FEMTO NODE SETS TRANSMIT POWER TO DEFINED VALUE (E.G., MAXIMUM ALLOWABLE WHILE MITIGATING MACRO COVERAGE HOLE)
902
HOME ACCESS TERMINAL MEASURES SIGNALS FROM NEIGHBORING FEMTO NODES AND SENDS REPORT TO HOME FEMTO NODE (E.G., IN RESPONSE TO REQUEST FROM HOME FEMTO NODE)
904
FEMTO NODE DETERMINES WHETHER RECEIVED SIGNAL FOR HOME ACCESS TERMINAL IS ACCEPTABLE (E.G., BASED ON COVERAGE RADIUS AND/OR QUALITY OF SERVICE SUCH AS THROUGHPUT)
906
ACCEPTABLE?
908
YES
NO
HOME FEMTO NODE SETS TRANSMIT POWER TO MAXIMUM ALLOWED TRANSMIT POWER
910
HOME FEMTO NODE RANKS NEIGHBORING FEMTO NODES ACCORDING TO TRANSMIT POWER (EXCLUDING NEIGHBORING FEMTO NODE THAT SENT NACK AND HAS UNEXPIRED TIMER)
912
HOME FEMTO NODE SENDS MESSAGE TO HIGHEST RANKING NEIGHBORING FEMTO NODE REQUESTING REDUCTION IN TRANSMIT POWER
914
HOME FEMTO NODE RECEIVES RESPONSE TO MESSAGE
916
ACK?
918
NO
YES

FIG. 9

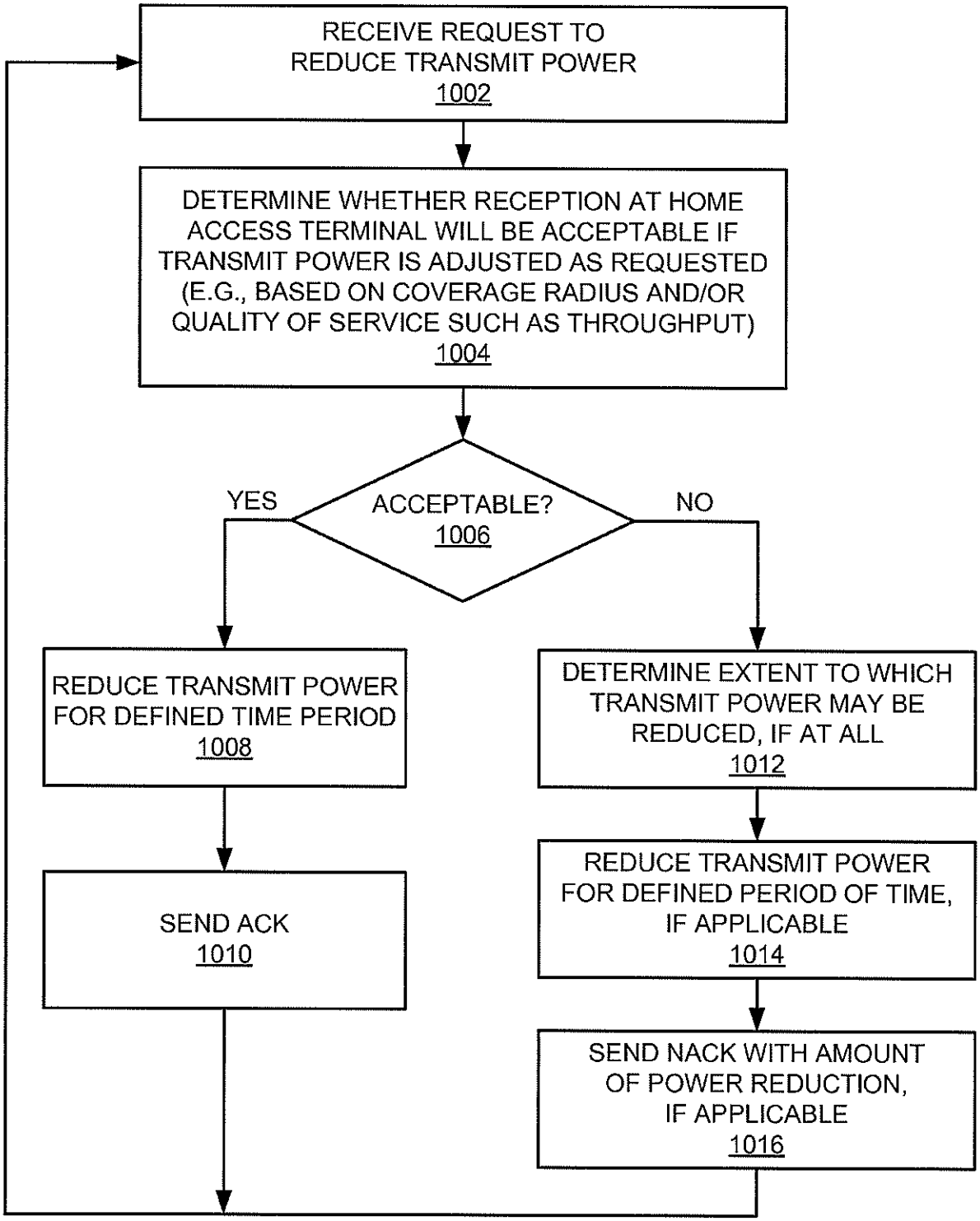

RECEIVE REQUEST TO REDUCE TRANSMIT POWER
1002
DETERMINE WHETHER RECEPTION AT HOME ACCESS TERMINAL WILL BE ACCEPTABLE IF TRANSMIT POWER IS ADJUSTED AS REQUESTED (E.G., BASED ON COVERAGE RADIUS AND/OR QUALITY OF SERVICE SUCH AS THROUGHPUT)
1004
ACCEPTABLE?
1006
YES
NO
REDUCE TRANSMIT POWER FOR DEFINED TIME PERIOD
1008
SEND ACK
1010
DETERMINE EXTENT TO WHICH TRANSMIT POWER MAY BE REDUCED, IF AT ALL
1012
REDUCE TRANSMIT POWER FOR DEFINED PERIOD OF TIME, IF APPLICABLE
1014
SEND NACK WITH AMOUNT OF POWER REDUCTION, IF APPLICABLE
1016

FIG. 10

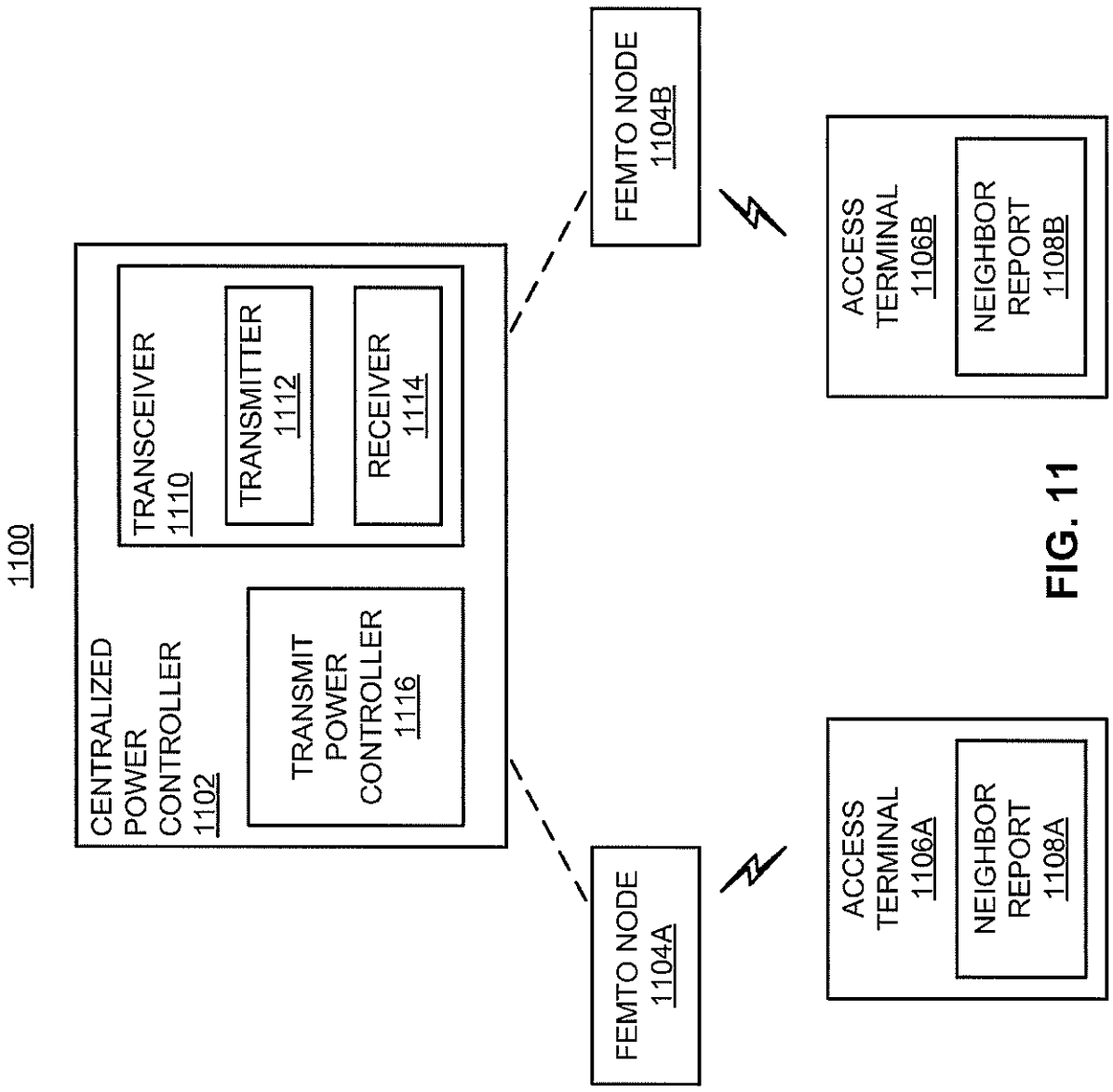

1100
CENTRALIZED POWER CONTROLLER 1102
TRANSCEIVER 1110
TRANSMITTER 1112
RECEIVER 1114
TRANSMIT POWER CONTROLLER 1116
FEMTO NODE 1104A
FEMTO NODE 1104B
ACCESS TERMINAL 1106A
NEIGHBOR REPORT 1108A
ACCESS TERMINAL 1106B
NEIGHBOR REPORT 1108B

FIG. 11

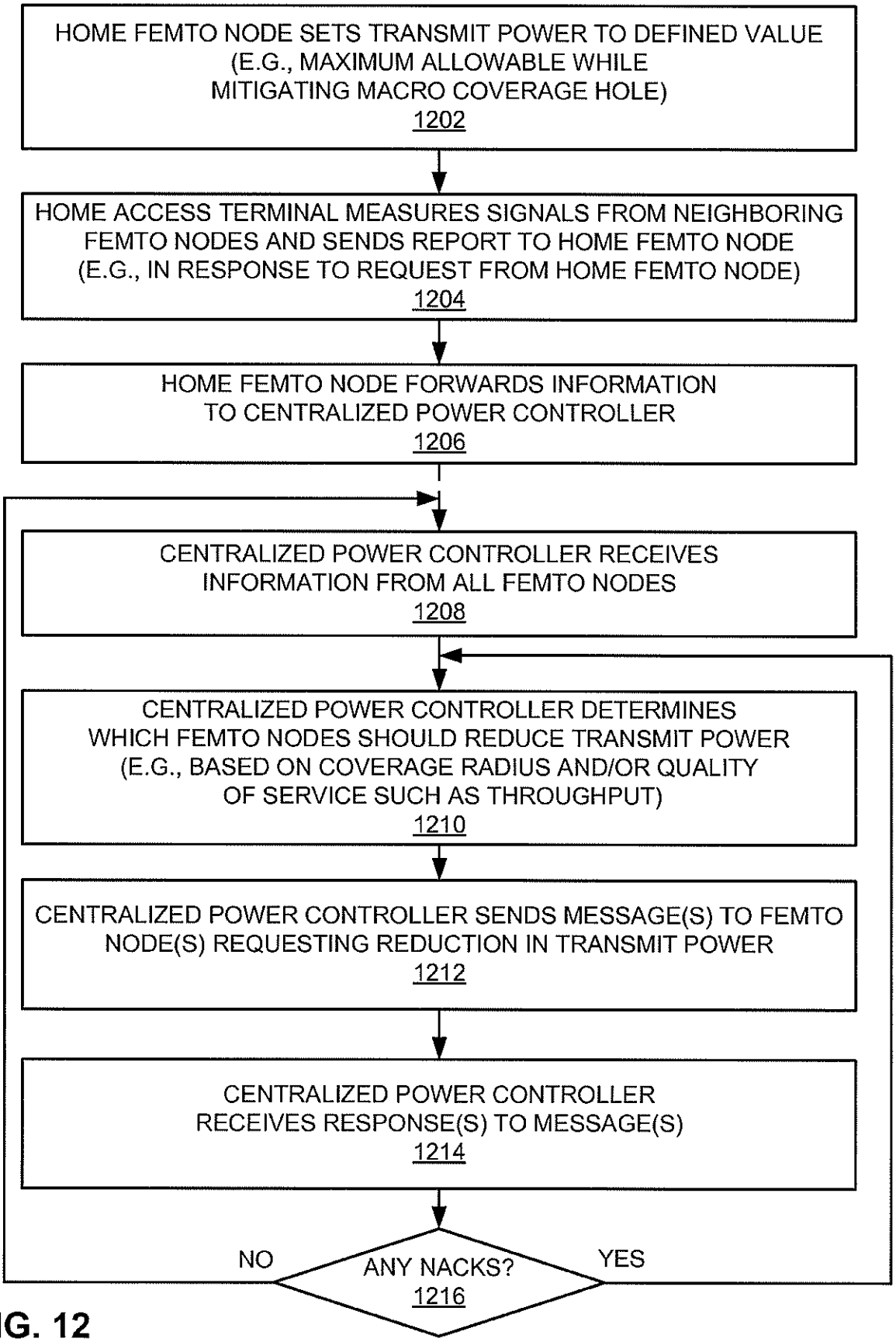

HOME FEMTO NODE SETS TRANSMIT POWER TO DEFINED VALUE (E.G., MAXIMUM ALLOWABLE WHILE MITIGATING MACRO COVERAGE HOLE)
1202
HOME ACCESS TERMINAL MEASURES SIGNALS FROM NEIGHBORING FEMTO NODES AND SENDS REPORT TO HOME FEMTO NODE (E.G., IN RESPONSE TO REQUEST FROM HOME FEMTO NODE)
1204
HOME FEMTO NODE FORWARDS INFORMATION TO CENTRALIZED POWER CONTROLLER
1206
CENTRALIZED POWER CONTROLLER RECEIVES INFORMATION FROM ALL FEMTO NODES
1208
CENTRALIZED POWER CONTROLLER DETERMINES WHICH FEMTO NODES SHOULD REDUCE TRANSMIT POWER (E.G., BASED ON COVERAGE RADIUS AND/OR QUALITY OF SERVICE SUCH AS THROUGHPUT)
1210
CENTRALIZED POWER CONTROLLER SENDS MESSAGE(S) TO FEMTO NODE(S) REQUESTING REDUCTION IN TRANSMIT POWER
1212
CENTRALIZED POWER CONTROLLER RECEIVES RESPONSE(S) TO MESSAGE(S)
1214
ANY NACKS?
1216
NO
YES

FIG. 12

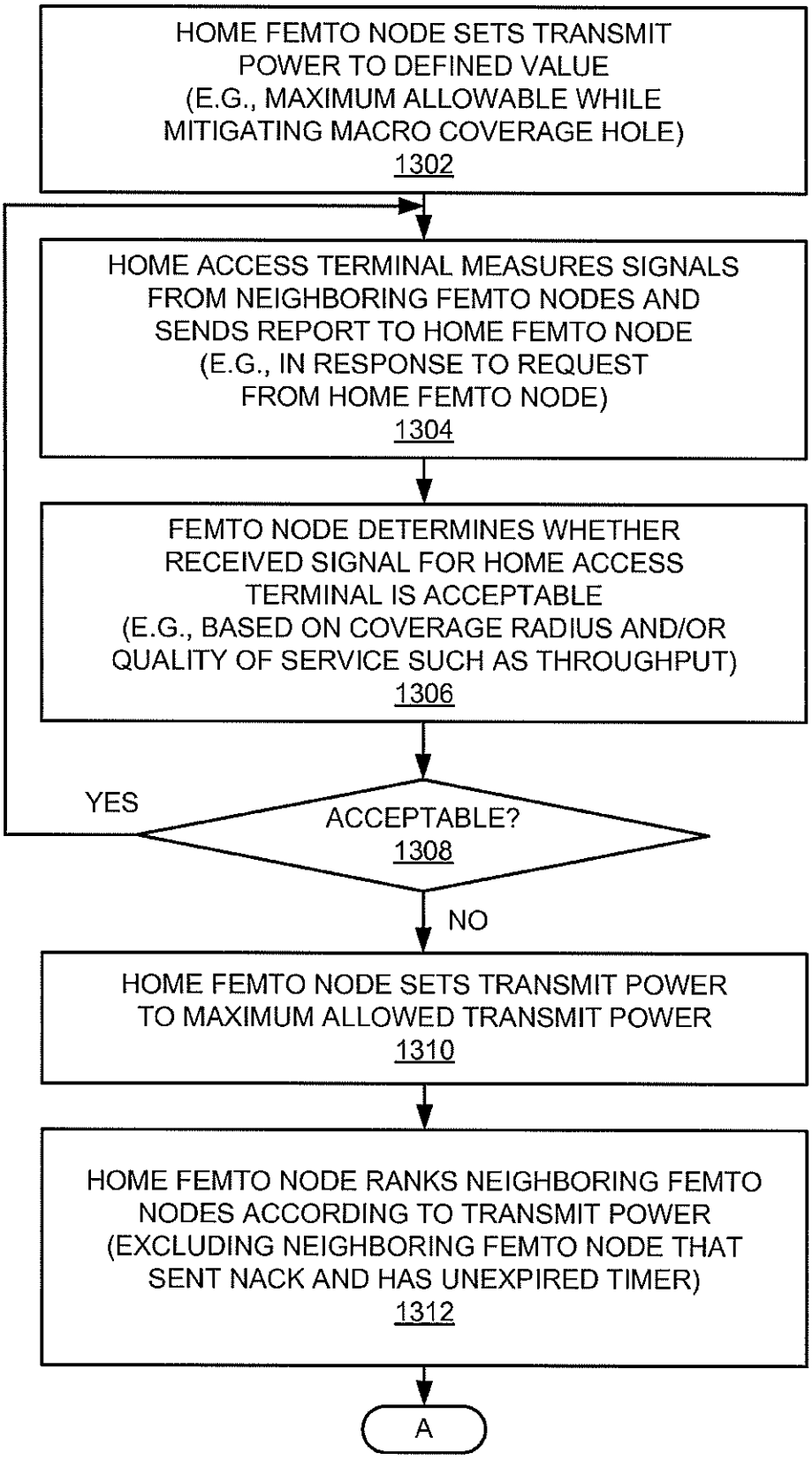

HOME FEMTO NODE SETS TRANSMIT POWER TO DEFINED VALUE (E.G., MAXIMUM ALLOWABLE WHILE MITIGATING MACRO COVERAGE HOLE)
1302
HOME ACCESS TERMINAL MEASURES SIGNALS FROM NEIGHBORING FEMTO NODES AND SENDS REPORT TO HOME FEMTO NODE (E.G., IN RESPONSE TO REQUEST FROM HOME FEMTO NODE)
1304
FEMTO NODE DETERMINES WHETHER RECEIVED SIGNAL FOR HOME ACCESS TERMINAL IS ACCEPTABLE (E.G., BASED ON COVERAGE RADIUS AND/OR QUALITY OF SERVICE SUCH AS THROUGHPUT)
1306
YES
ACCEPTABLE?
1308
NO
HOME FEMTO NODE SETS TRANSMIT POWER TO MAXIMUM ALLOWED TRANSMIT POWER
1310
HOME FEMTO NODE RANKS NEIGHBORING FEMTO NODES ACCORDING TO TRANSMIT POWER (EXCLUDING NEIGHBORING FEMTO NODE THAT SENT NACK AND HAS UNEXPIRED TIMER)
1312
A

FIG. 13A

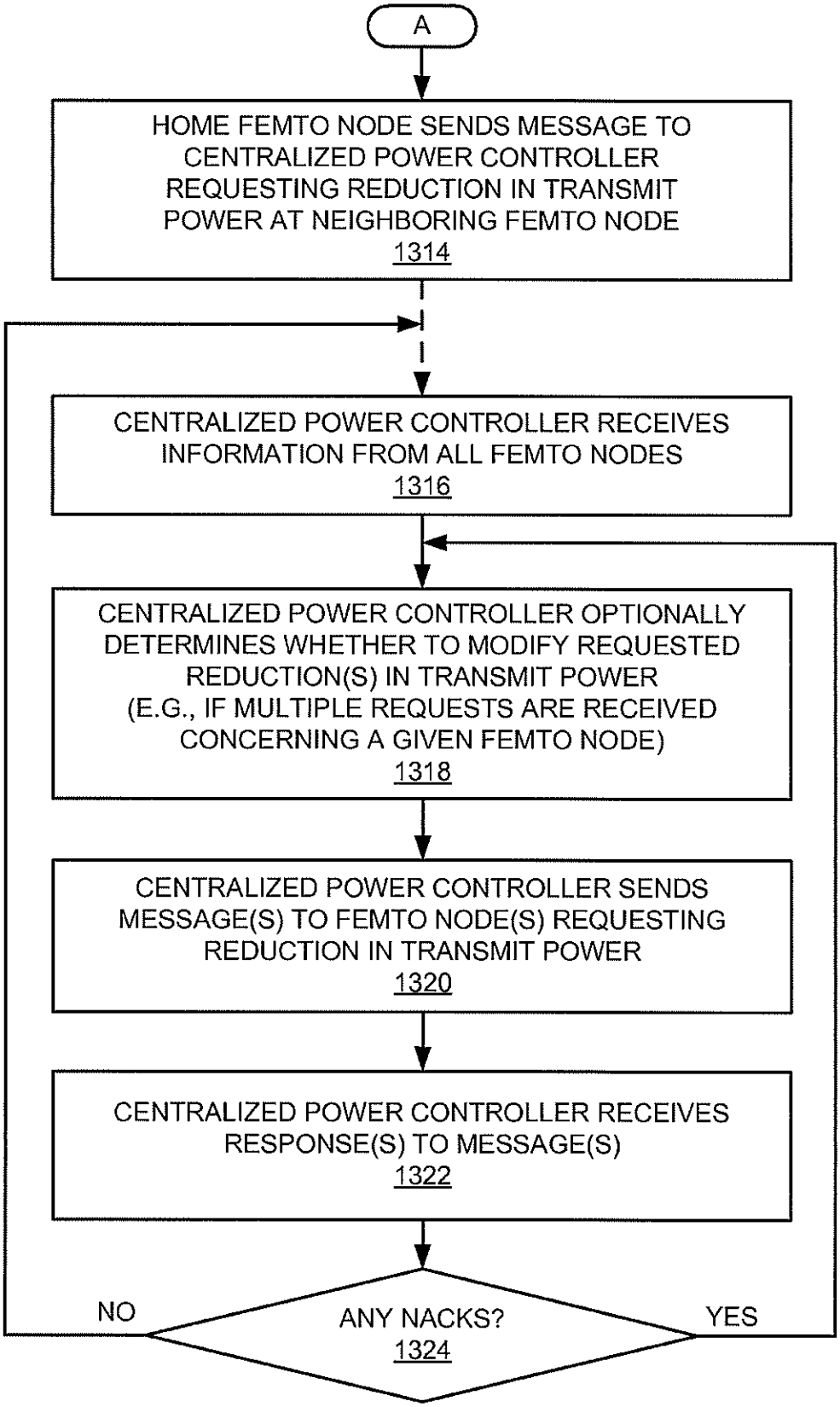

A
HOME FEMTO NODE SENDS MESSAGE TO CENTRALIZED POWER CONTROLLER REQUESTING REDUCTION IN TRANSMIT POWER AT NEIGHBORING FEMTO NODE
1314
CENTRALIZED POWER CONTROLLER RECEIVES INFORMATION FROM ALL FEMTO NODES
1316
CENTRALIZED POWER CONTROLLER OPTIONALLY DETERMINES WHETHER TO MODIFY REQUESTED REDUCTION(S) IN TRANSMIT POWER (E.G., IF MULTIPLE REQUESTS ARE RECEIVED CONCERNING A GIVEN FEMTO NODE)
1318
CENTRALIZED POWER CONTROLLER SENDS MESSAGE(S) TO FEMTO NODE(S) REQUESTING REDUCTION IN TRANSMIT POWER
1320
CENTRALIZED POWER CONTROLLER RECEIVES RESPONSE(S) TO MESSAGE(S)
1322
ANY NACKS?
1324
NO
YES

FIG. 13B

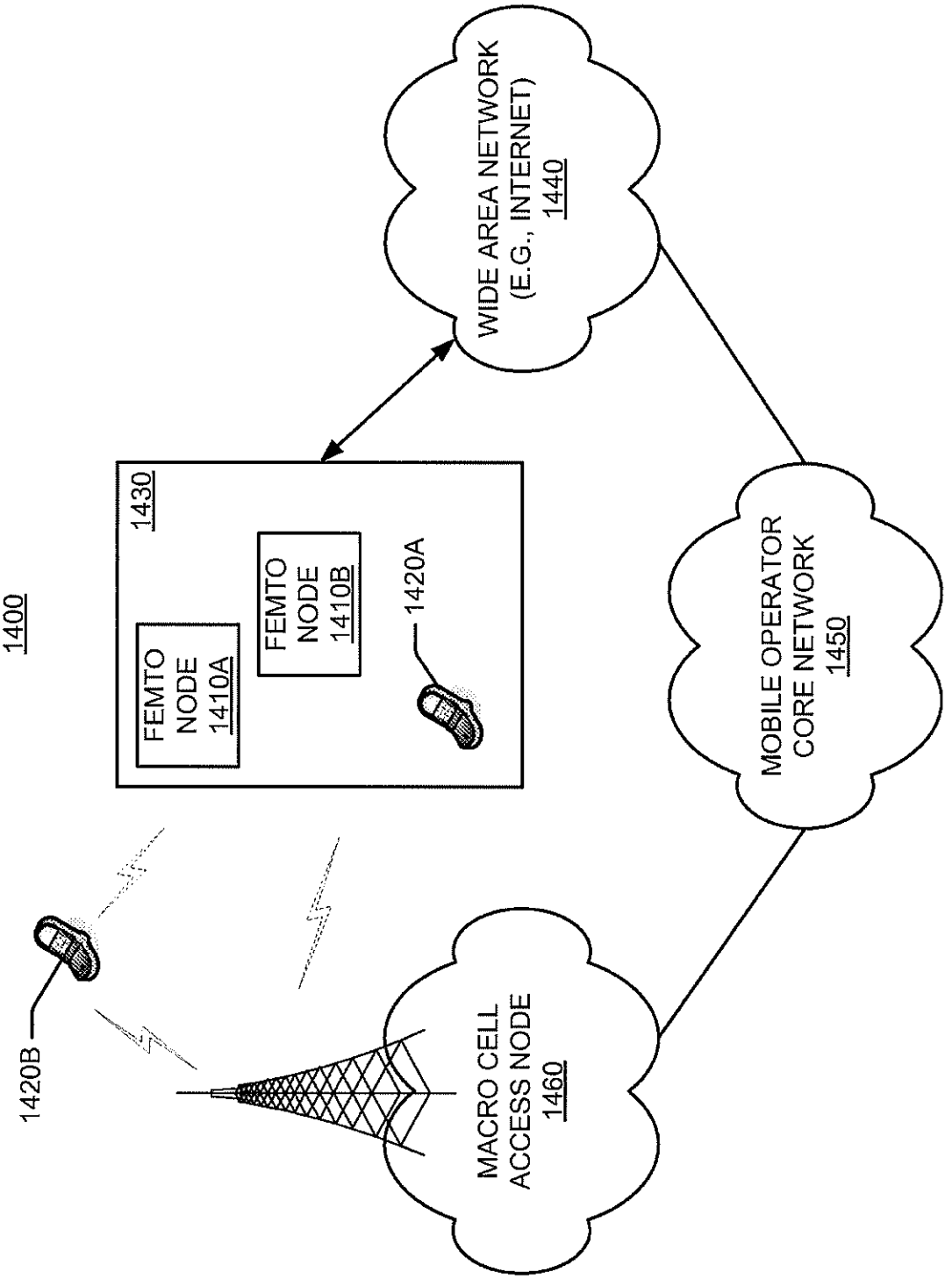

1400
WIDE AREA NETWORK
(E.G., INTERNET)
1440
1430
FEMTO
NODE
1410A
FEMTO
NODE
1410B
1420A
MOBILE OPERATOR
CORE NETWORK
1450
1420B
MACRO CELL
ACCESS NODE
1460

FIG. 14

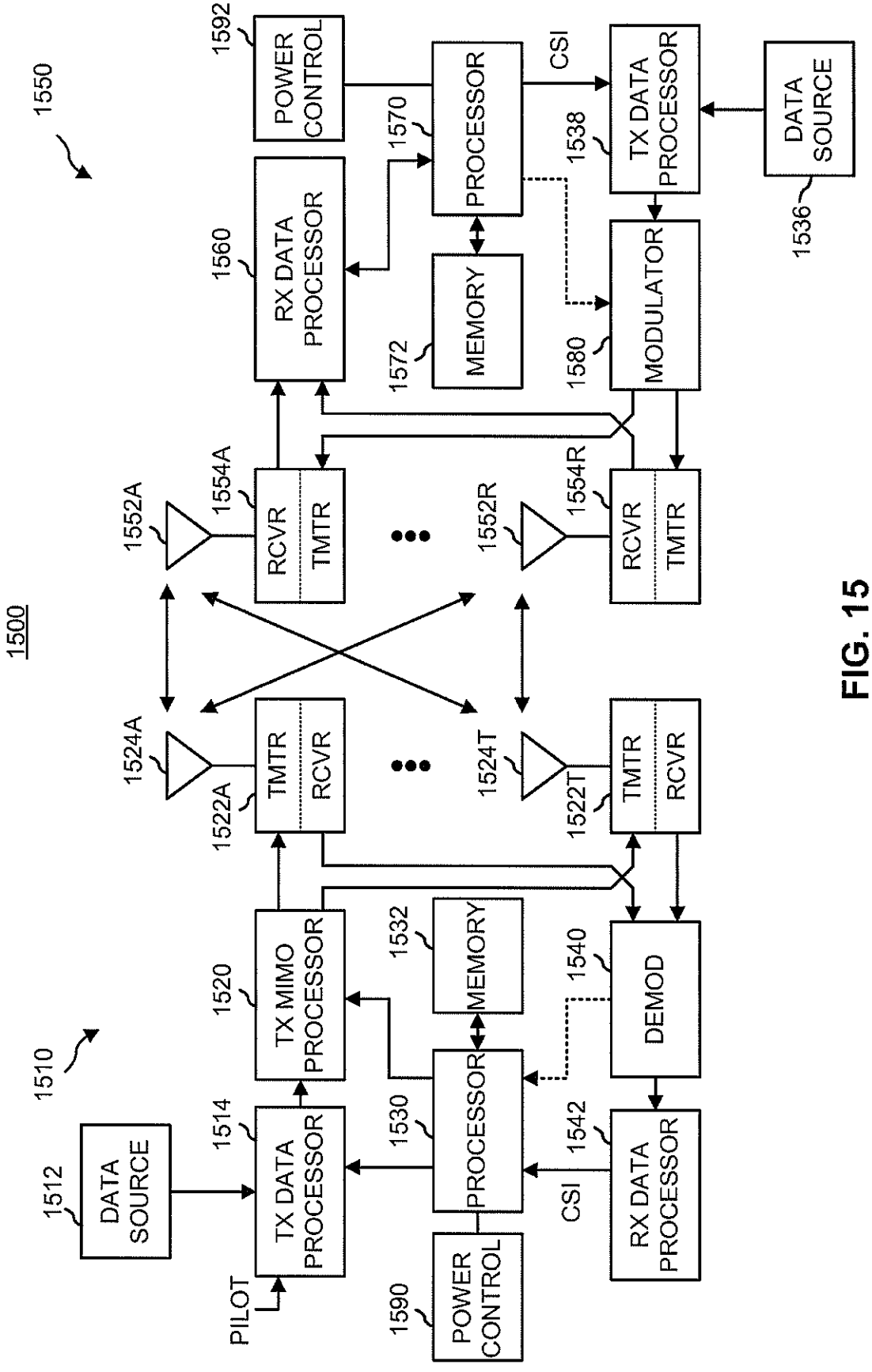

1500
1510
1512
DATA SOURCE
1514
TX DATA PROCESSOR
PILOT
1520
TX MIMO PROCESSOR
1522A
TMTR
RCVR
1524A
1524T
1522T
1530
PROCESSOR
1532
MEMORY
1540
DEMOD
CSI
1542
RX DATA PROCESSOR
1590
POWER CONTROL
1550
1552A
1554A
RCVR
TMTR
1552R
1554R
1560
RX DATA PROCESSOR
1570
PROCESSOR
1572
MEMORY
1580
MODULATOR
1592
POWER CONTROL
CSI
1538
TX DATA PROCESSOR
1536
DATA SOURCE

FIG. 15

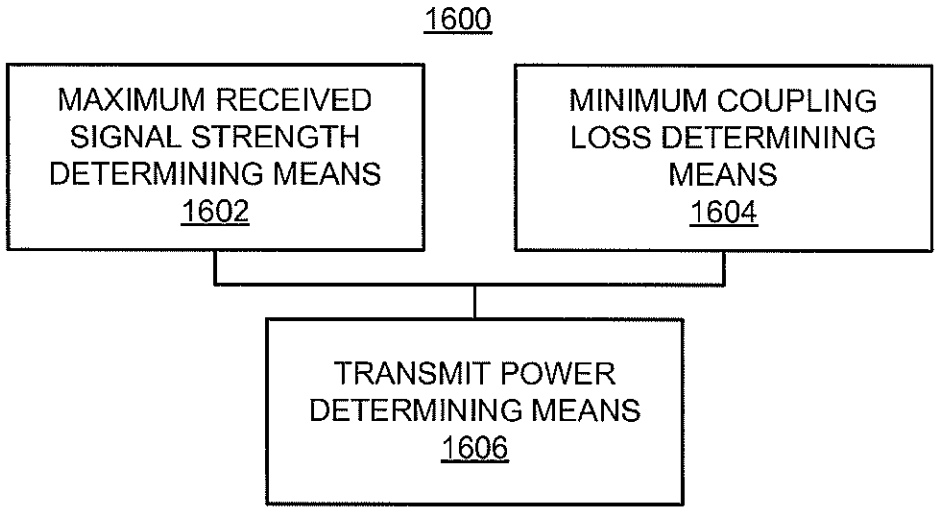

1600
MAXIMUM RECEIVED SIGNAL STRENGTH DETERMINING MEANS 1602
MINIMUM COUPLING LOSS DETERMINING MEANS 1604
TRANSMIT POWER DETERMINING MEANS 1606

FIG. 16

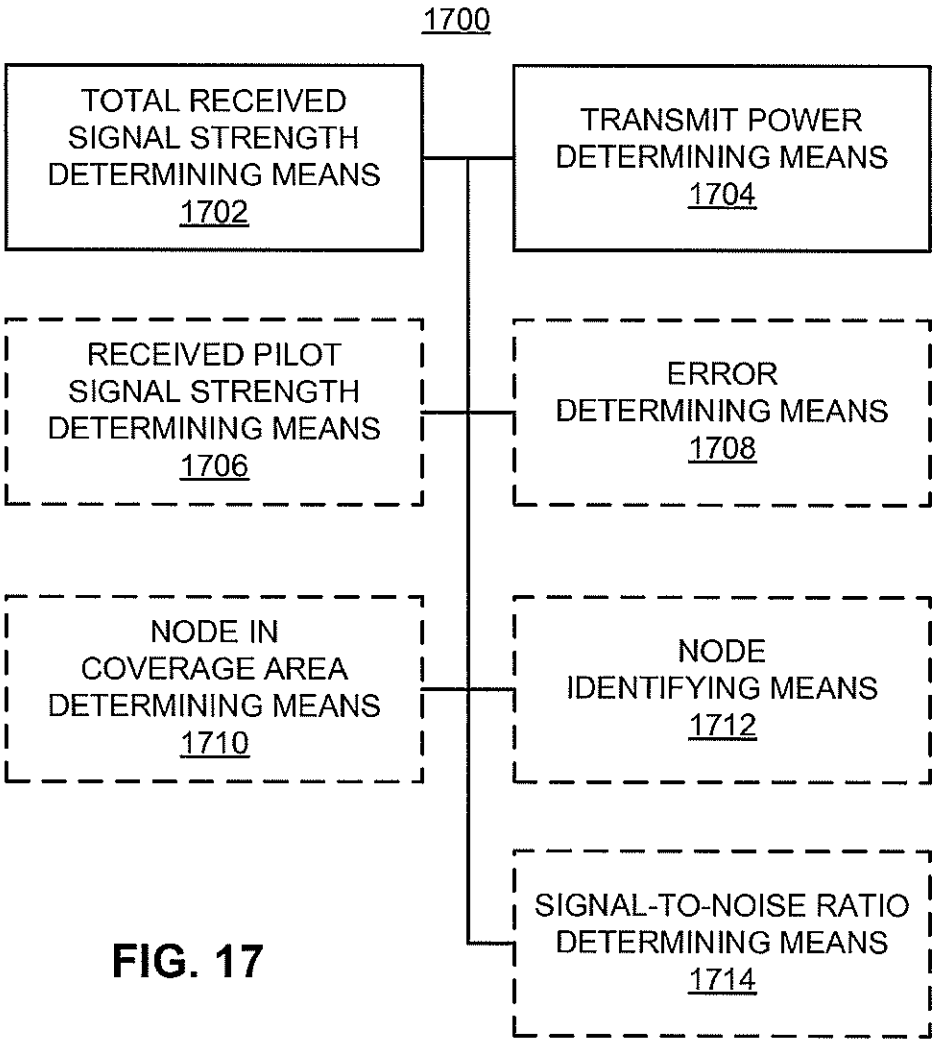

1700
TOTAL RECEIVED SIGNAL STRENGTH DETERMINING MEANS 1702
TRANSMIT POWER DETERMINING MEANS 1704
RECEIVED PILOT SIGNAL STRENGTH DETERMINING MEANS 1706
ERROR DETERMINING MEANS 1708
NODE IN COVERAGE AREA DETERMINING MEANS 1710
NODE IDENTIFYING MEANS 1712
SIGNAL-TO-NOISE RATIO DETERMINING MEANS 1714

FIG. 17

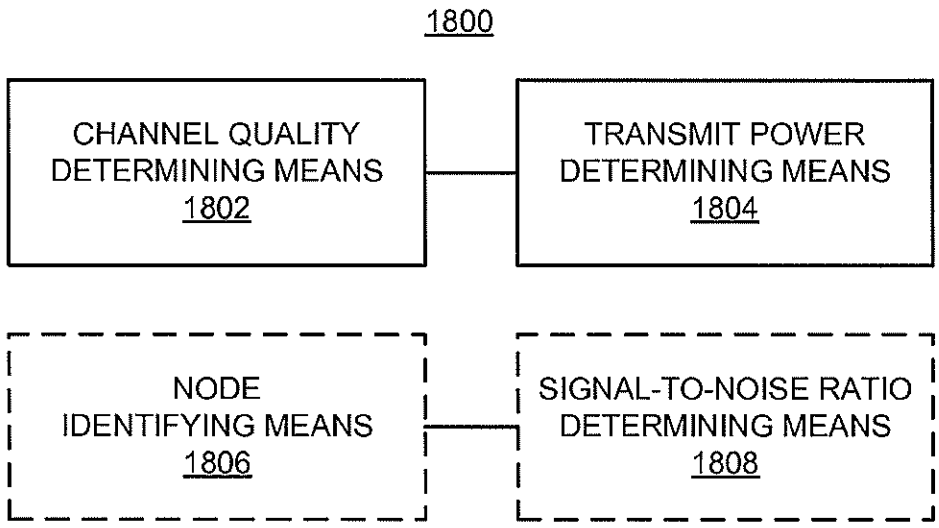

1800
CHANNEL QUALITY DETERMINING MEANS 1802
TRANSMIT POWER DETERMINING MEANS 1804
NODE IDENTIFYING MEANS 1806
SIGNAL-TO-NOISE RATIO DETERMINING MEANS 1808

FIG. 18

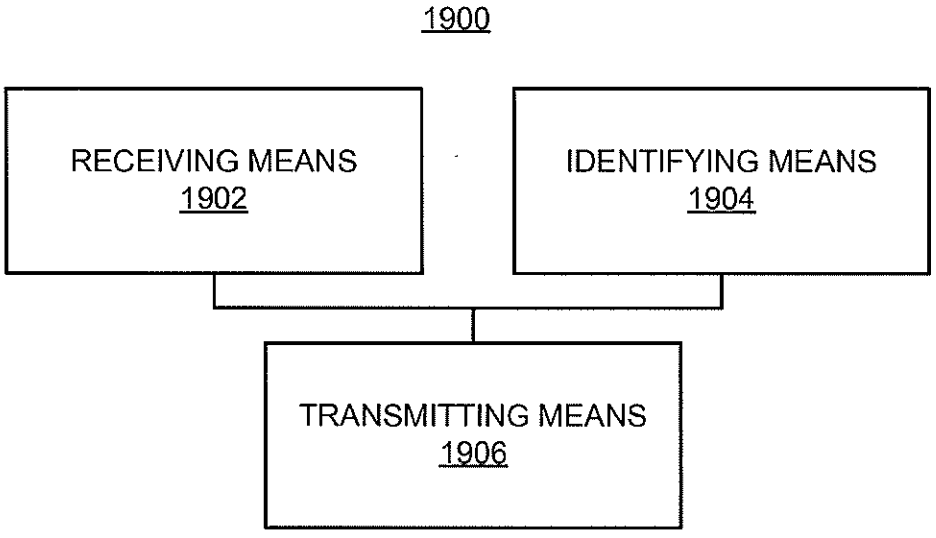

1900
RECEIVING MEANS 1902
IDENTIFYING MEANS 1904
TRANSMITTING MEANS 1906

FIG. 19