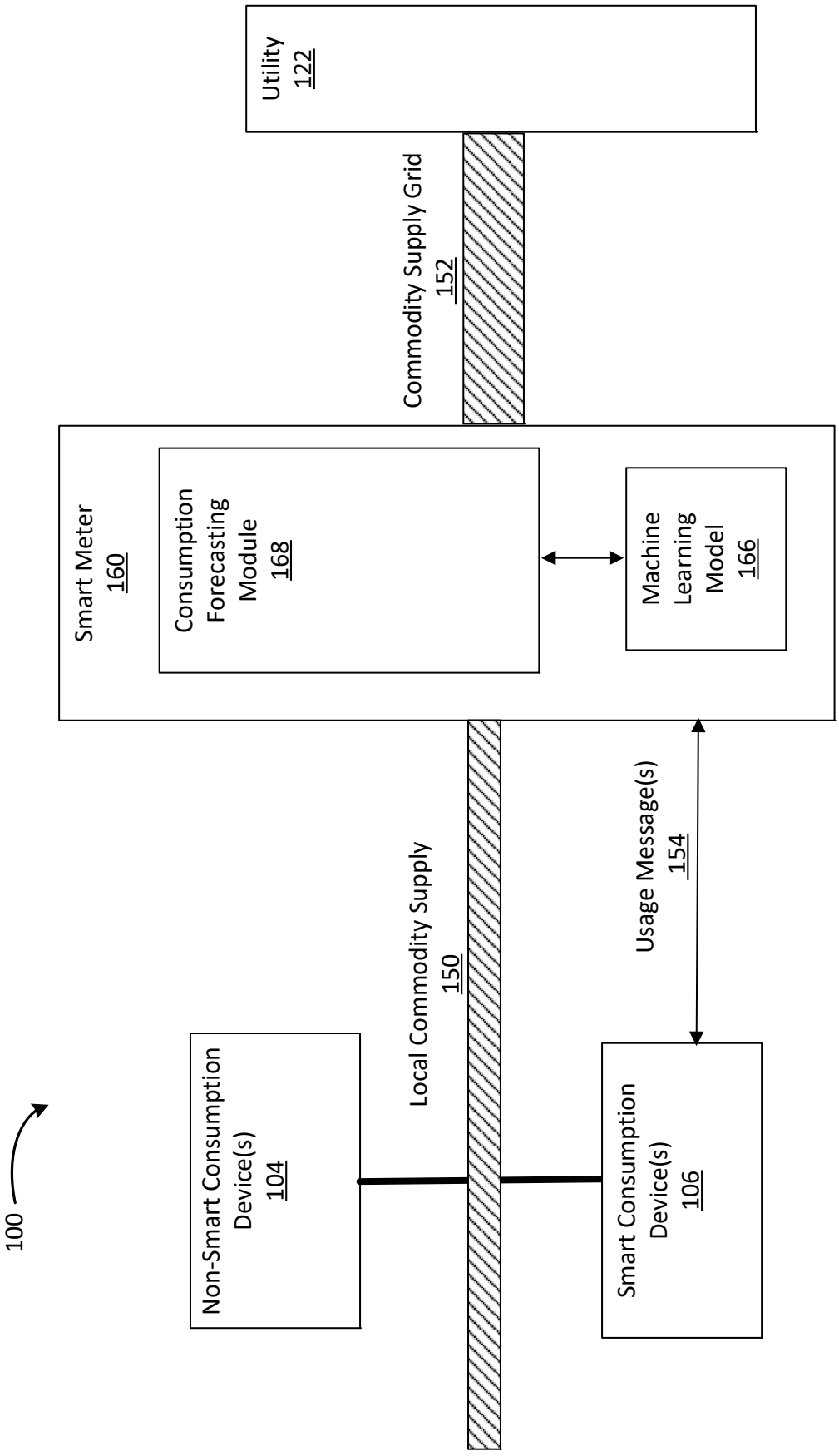
100
Utility
122
Commodity Supply Grid
152
Smart Meter
160
Consumption
Forecasting
Module
168
Machine
Learning
Model
166
Usage Message(s)
154
Local Commodity Supply
150
Non-Smart Consumption
Device(s)
104
Smart Consumption
Device(s)
106

FIG. 1

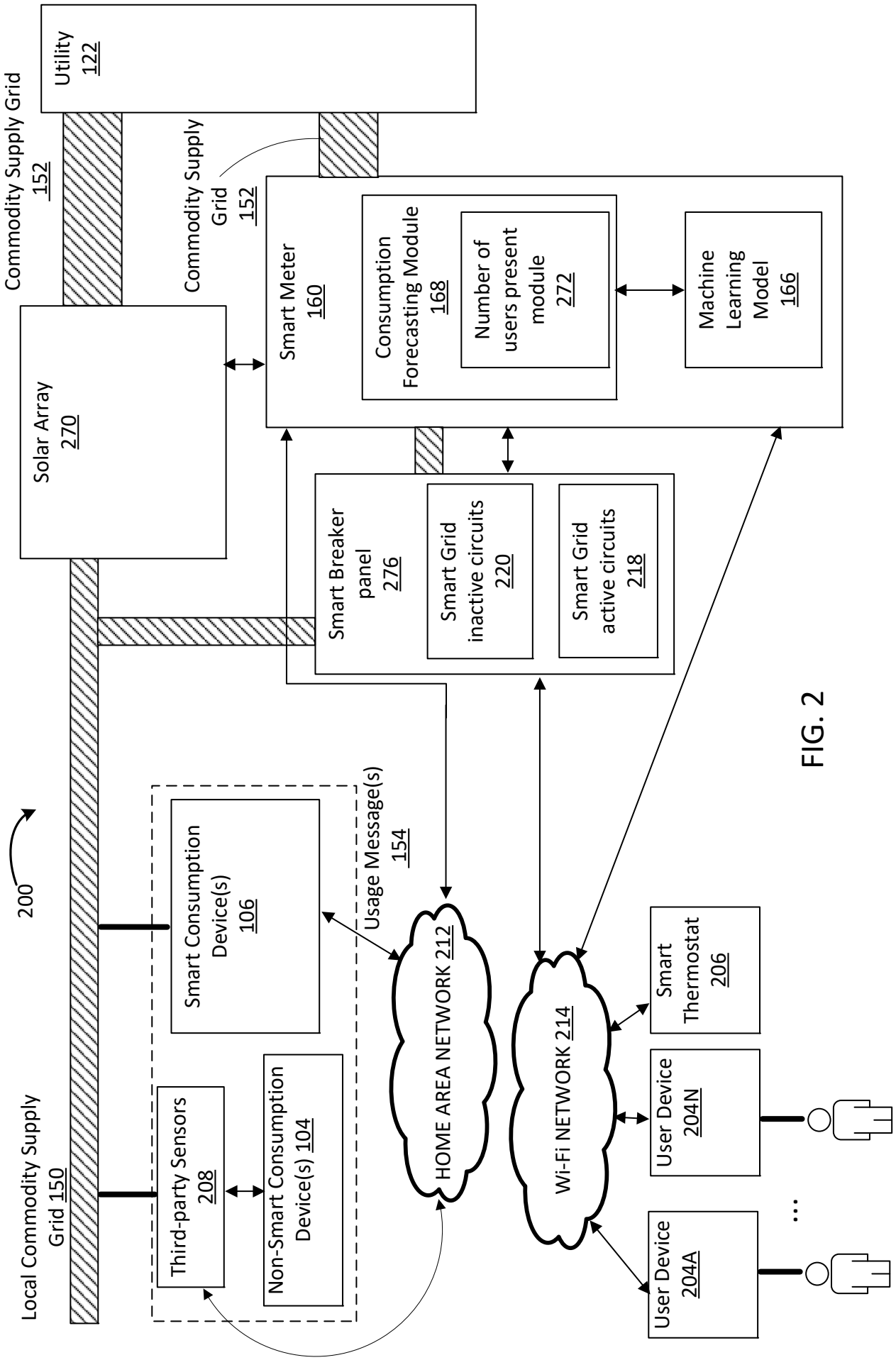
Utility 122
Commodity Supply Grid 152
Commodity Supply Grid 152
Smart Meter 160
Consumption Forecasting Module 168
Number of users present module 272
Machine Learning Model 166
Solar Array 270
Smart Breaker panel 276
Smart Grid inactive circuits 220
Smart Grid active circuits 218
200
Usage Message(s) 154
Smart Consumption Device(s) 106
HOME AREA NETWORK 212
Wi-Fi NETWORK 214
Smart Thermostat 206
User Device 204N
User Device 204A
Third-party Sensors 208
Non-Smart Consumption Device(s) 104
Local Commodity Supply Grid 150

FIG. 2

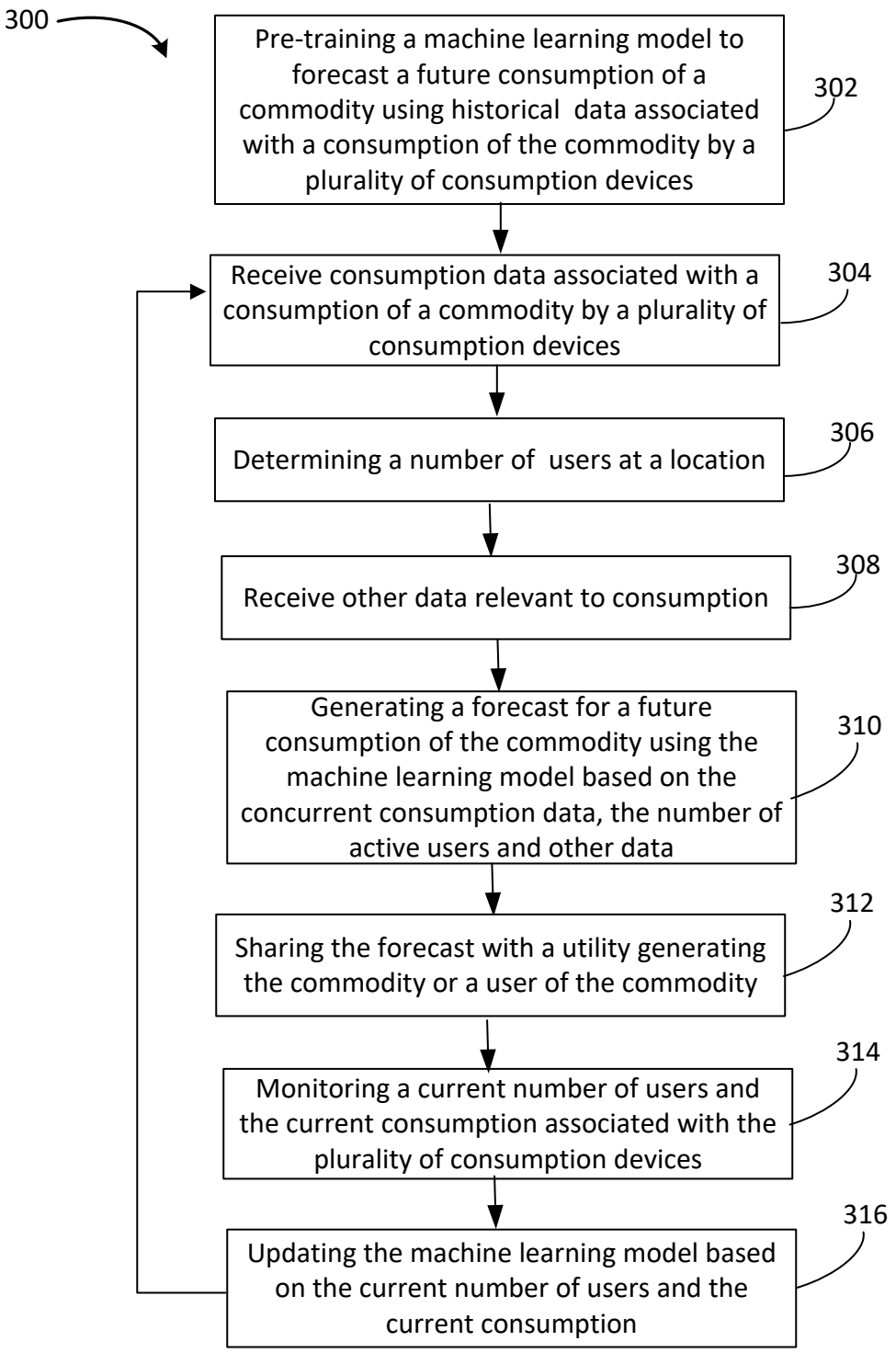
300
Pre-training a machine learning model to forecast a future consumption of a commodity using historical data associated with a consumption of the commodity by a plurality of consumption devices
302
Receive consumption data associated with a consumption of a commodity by a plurality of consumption devices
304
Determining a number of users at a location
306
Receive other data relevant to consumption
308
Generating a forecast for a future consumption of the commodity using the machine learning model based on the concurrent consumption data, the number of active users and other data
310
Sharing the forecast with a utility generating the commodity or a user of the commodity
312
Monitoring a current number of users and the current consumption associated with the plurality of consumption devices
314
Updating the machine learning model based on the current number of users and the current consumption
316

FIG. 3A

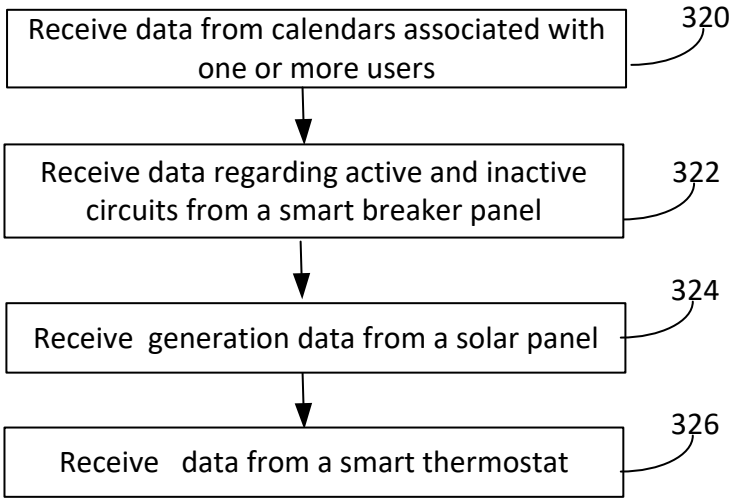
Receive data from calendars associated with one or more users
320
Receive data regarding active and inactive circuits from a smart breaker panel
322
Receive generation data from a solar panel
324
Receive data from a smart thermostat
326

FIG. 3B

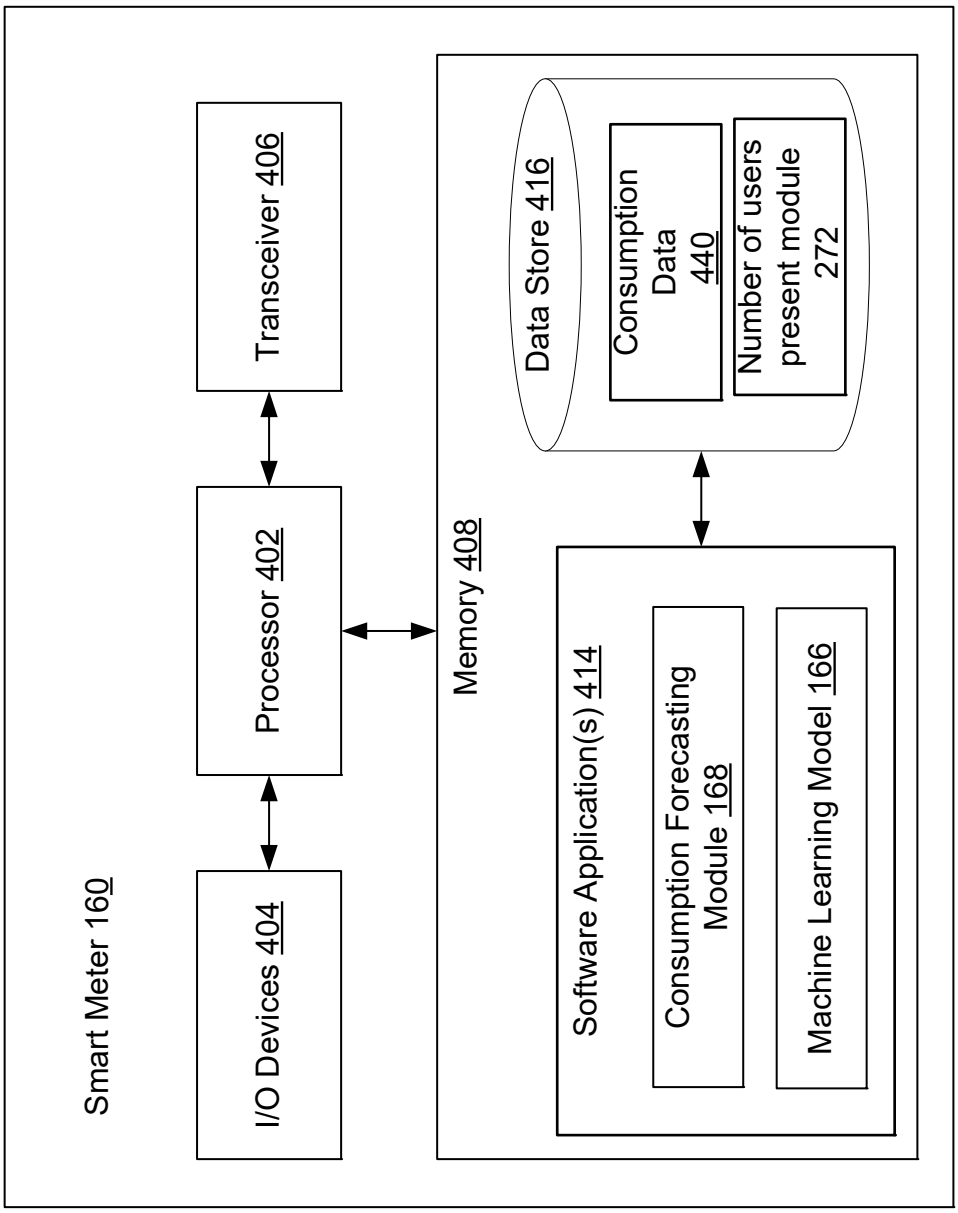
Smart Meter 160
I/O Devices 404
Processor 402
Transceiver 406
Memory 408
Software Application(s) 414
Consumption Forecasting Module 168
Machine Learning Model 166
Data Store 416
Consumption Data 440
Number of users present module 272

FIG. 4

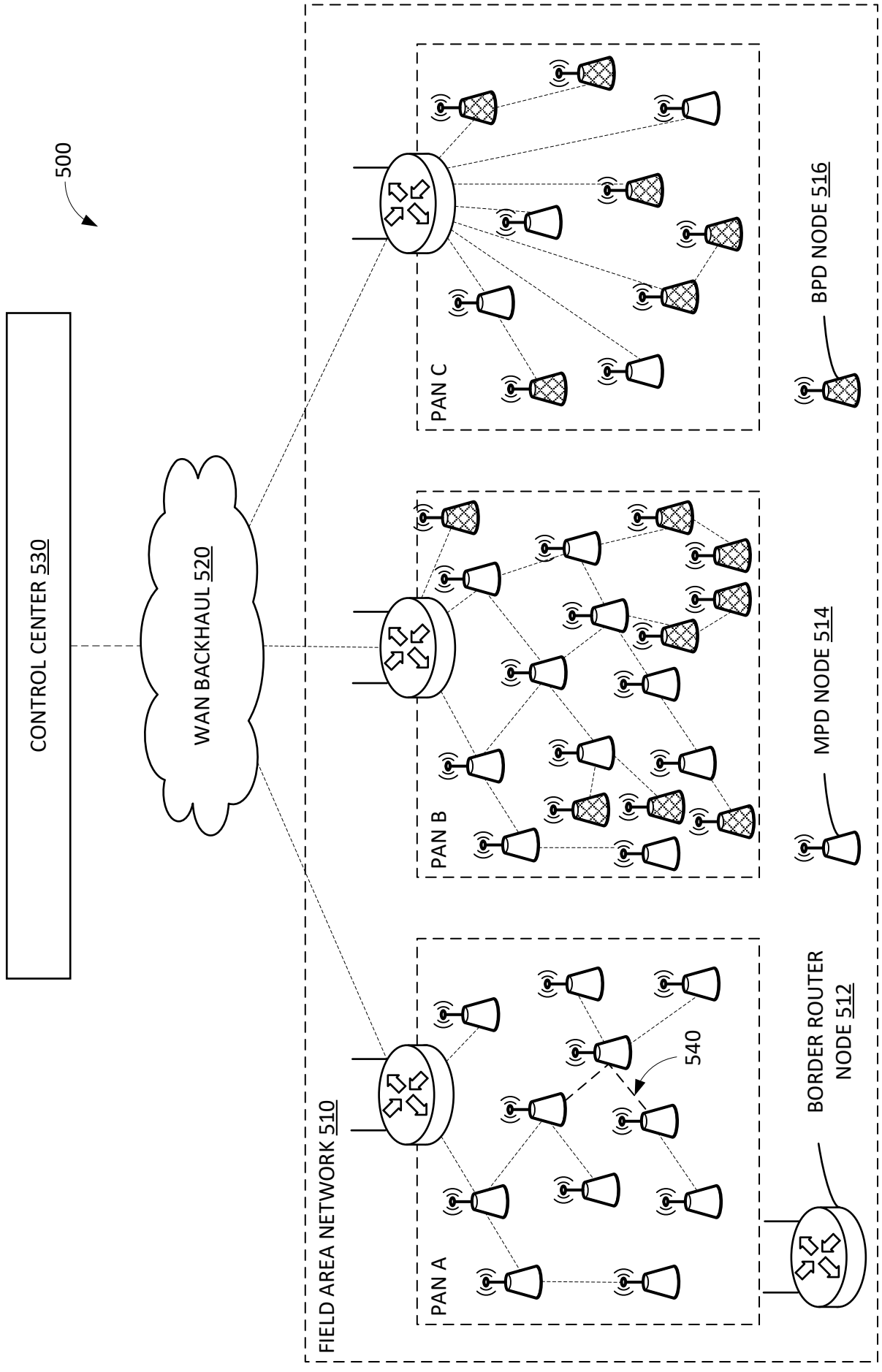
500
CONTROL CENTER 530
WAN BACKHAUL 520
FIELD AREA NETWORK 510
PAN A
PAN B
PAN C
540
BORDER ROUTER NODE 512
MPD NODE 514
BPD NODE 516

FIG. 5