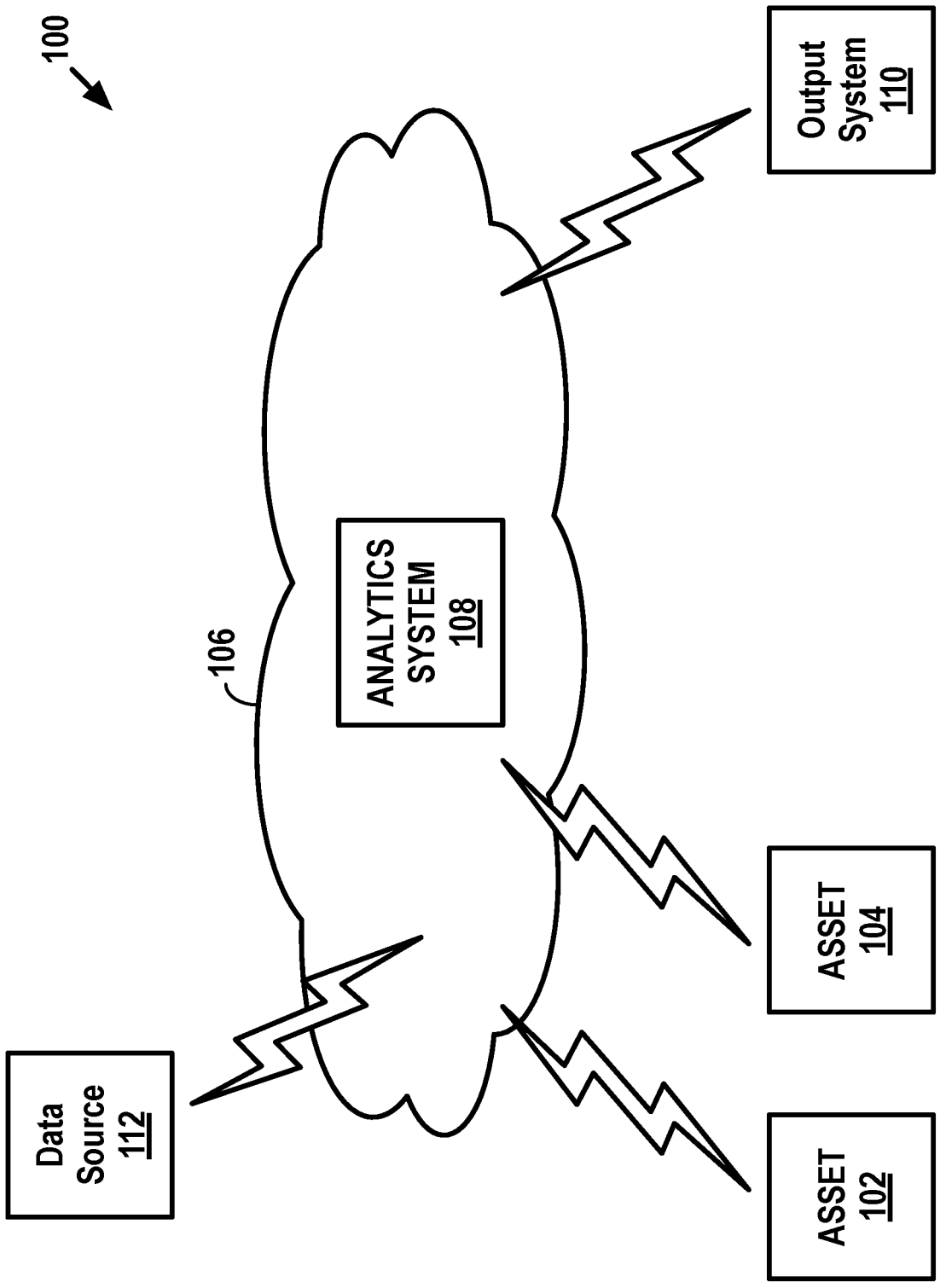

100
Output System 110
ANALYTICS SYSTEM 108
106
Data Source 112
ASSET 104
ASSET 102

FIGURE 1

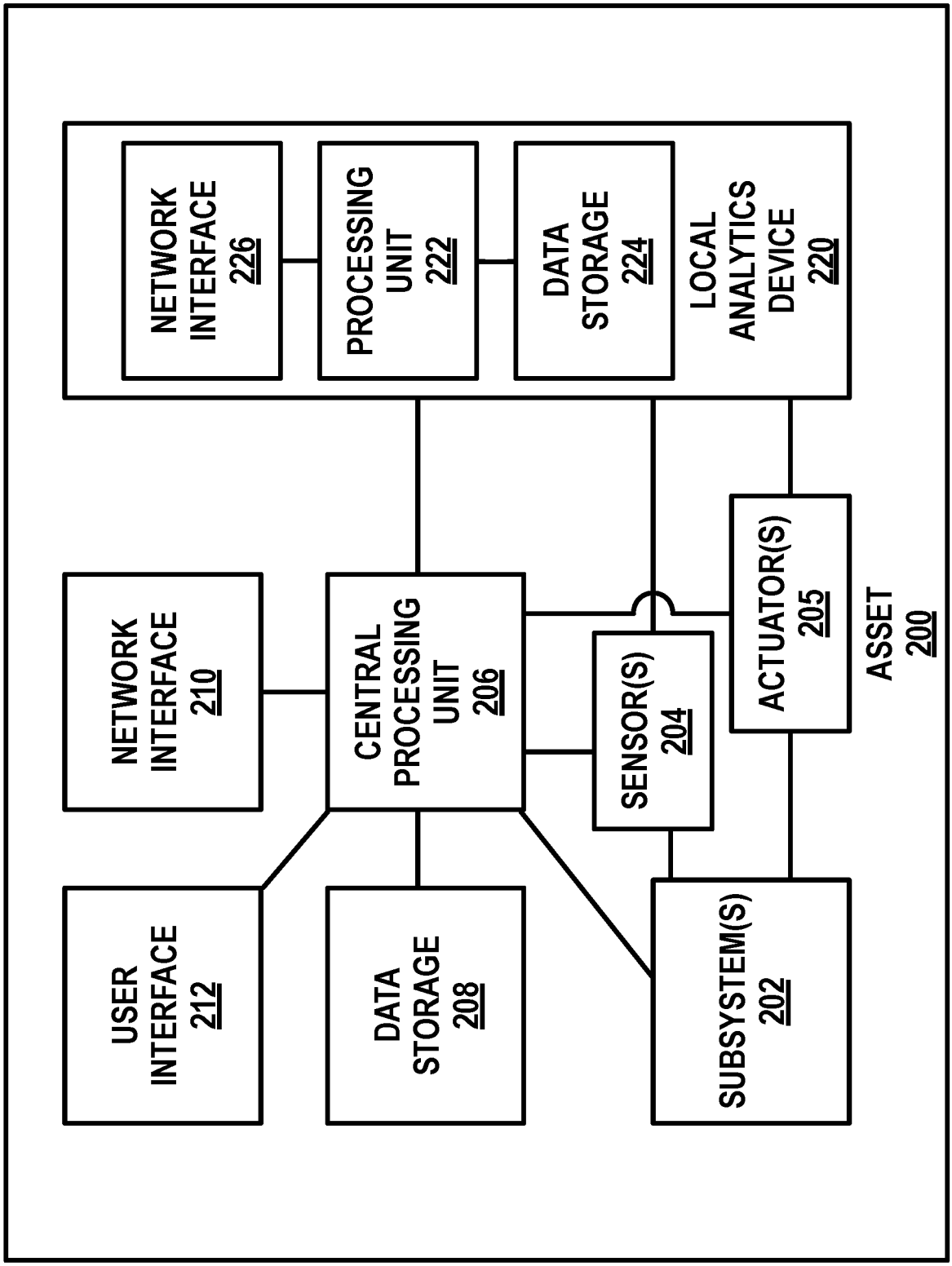

ASSET
200
LOCAL
ANALYTICS
DEVICE
220
NETWORK
INTERFACE
226
PROCESSING
UNIT
222
DATA
STORAGE
224
NETWORK
INTERFACE
210
CENTRAL
PROCESSING
UNIT
206
SENSOR(S)
204
ACTUATOR(S)
205
USER
INTERFACE
212
DATA
STORAGE
208
SUBSYSTEM(S)
202

FIGURE 2

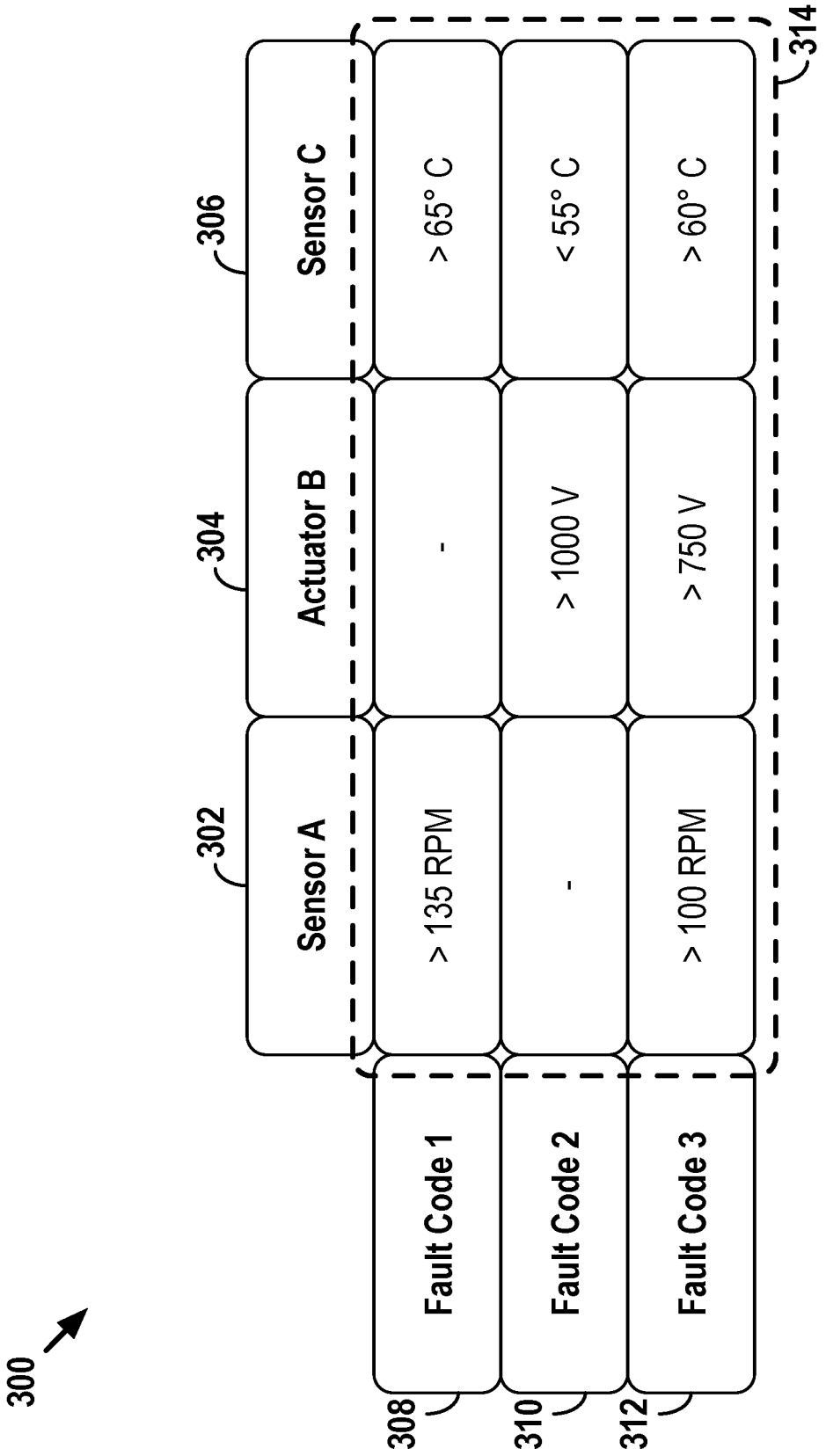

300
302
304
306
308
310
312
314
Sensor A
Actuator B
Sensor C
> 135 RPM
-
> 65° C
-
> 1000 V
< 55° C
> 100 RPM
> 750 V
> 60° C
Fault Code 1
Fault Code 2
Fault Code 3

FIGURE 3

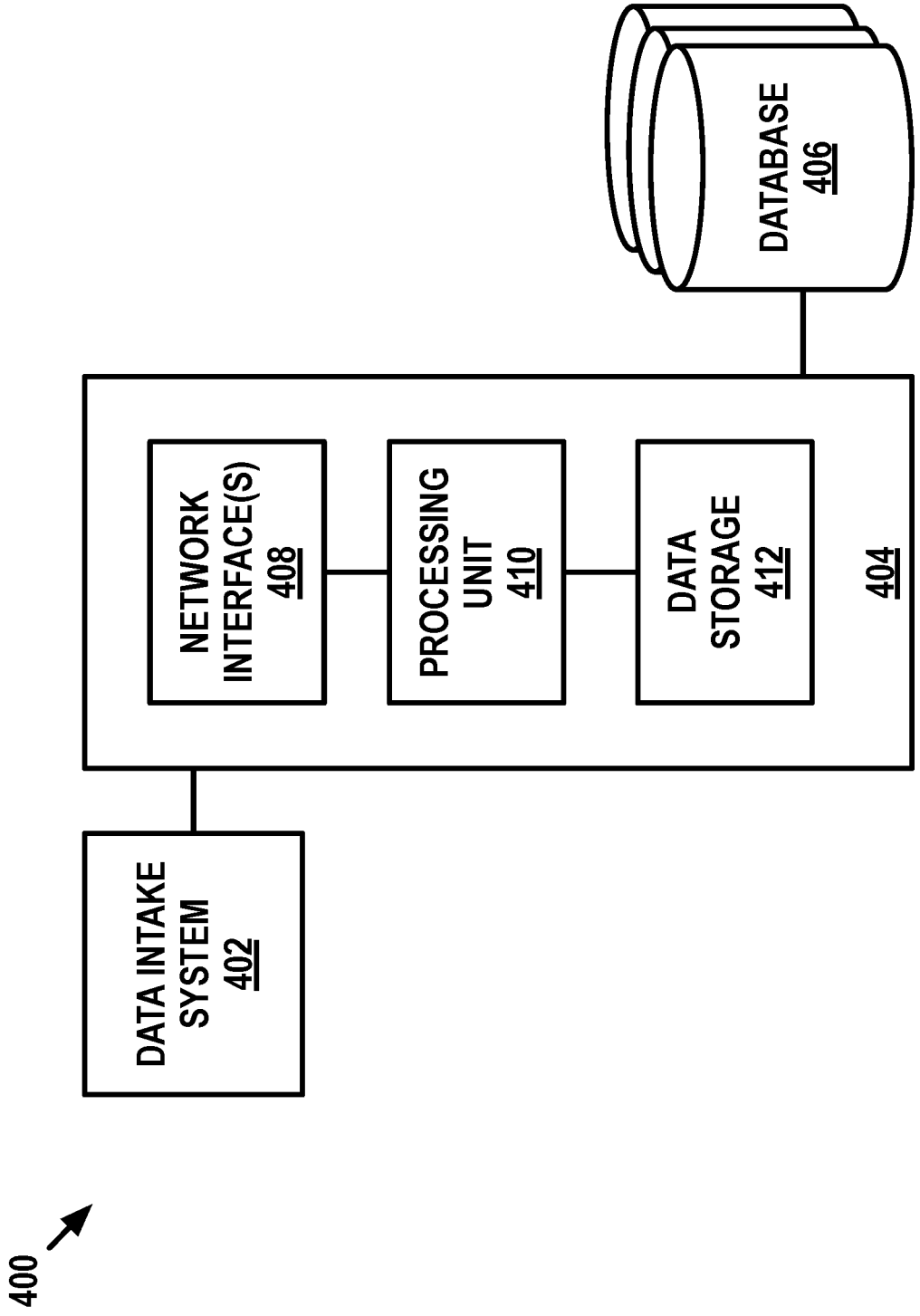

400
DATA INTAKE SYSTEM 402
404
NETWORK INTERFACE(S) 408
PROCESSING UNIT 410
DATA STORAGE 412
DATABASE 406

FIGURE 4

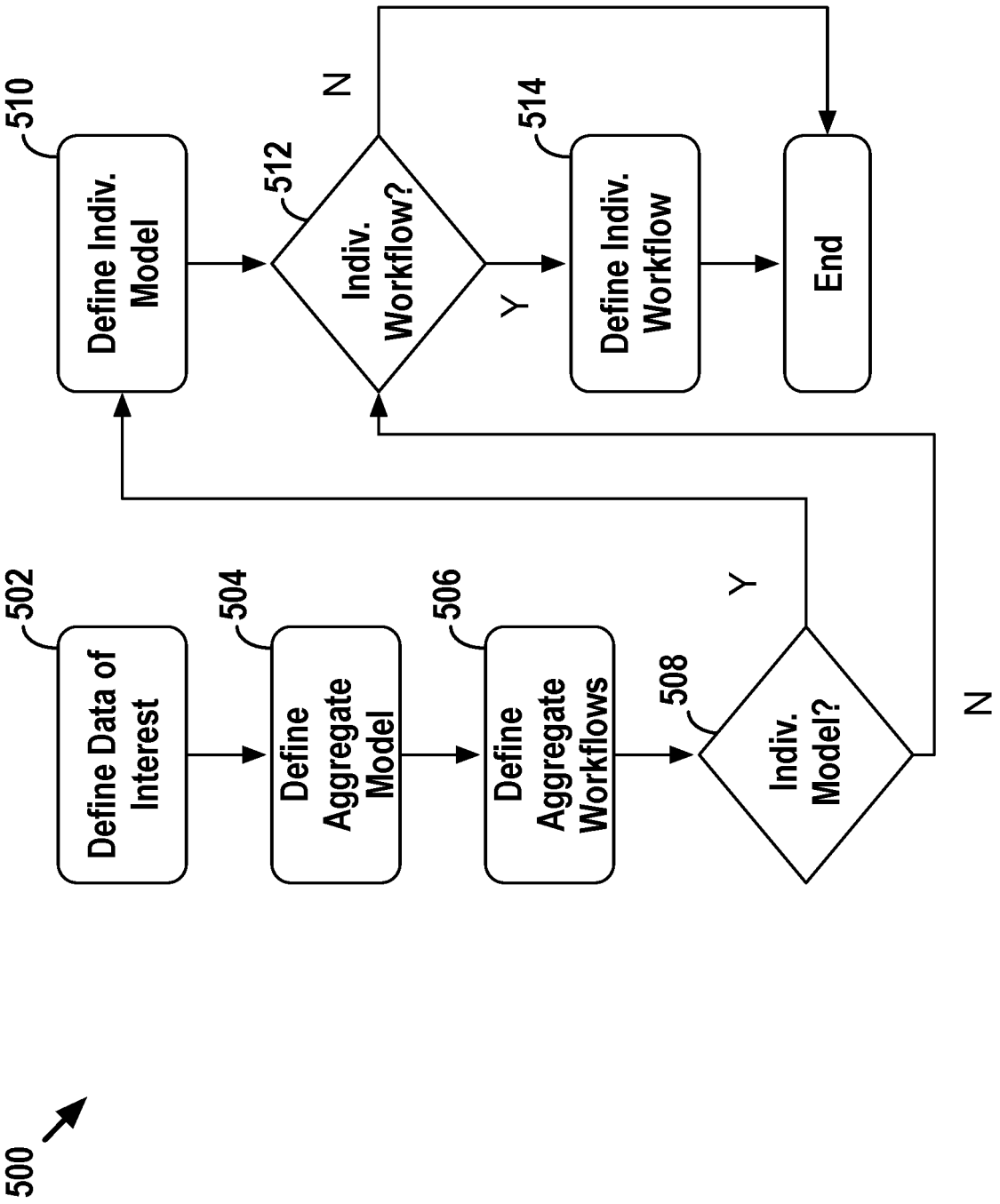

500
502
Define Data of Interest
504
Define Aggregate Model
506
Define Aggregate Workflows
508
Indiv. Model?
Y
N
510
Define Indiv. Model
512
Indiv. Workflow?
N
Y
514
Define Indiv. Workflow
End

FIGURE 5

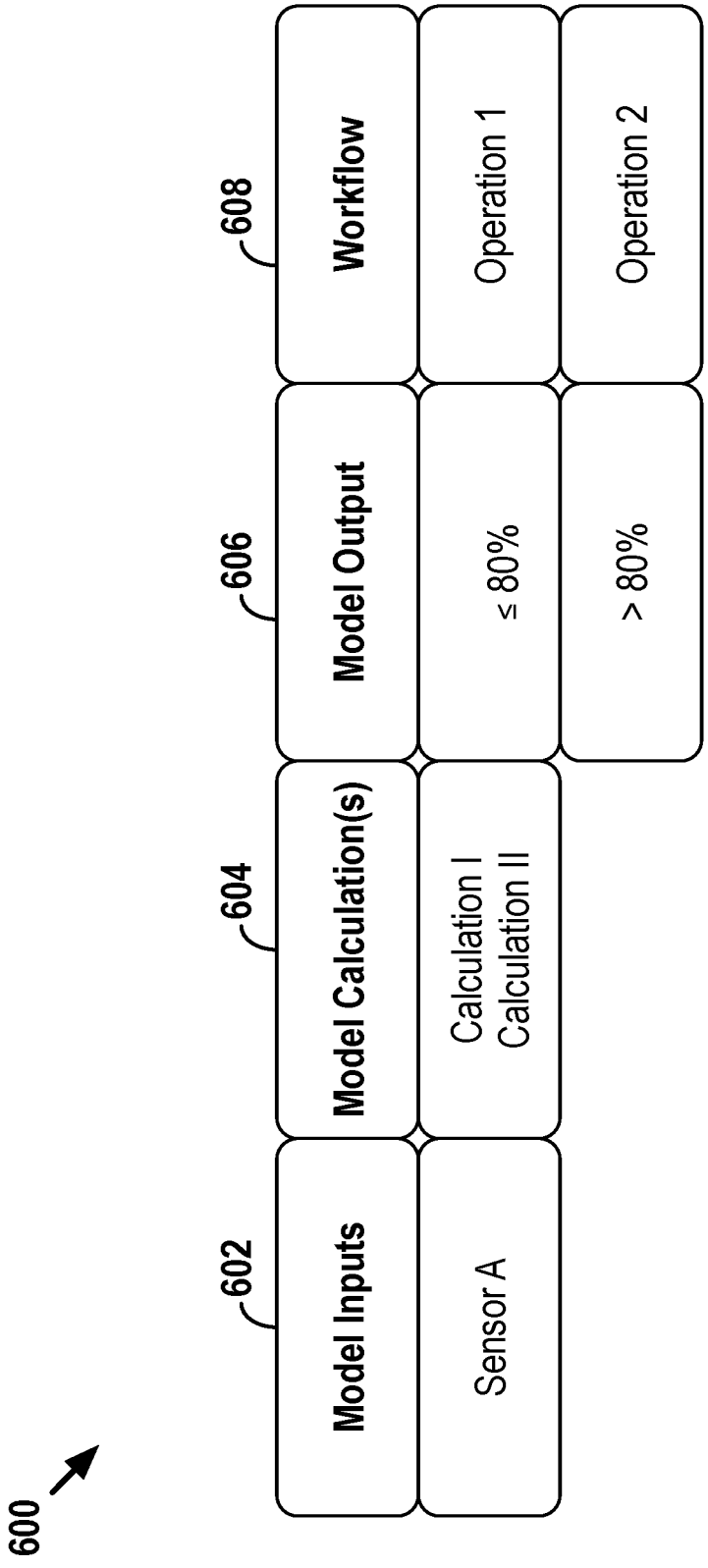

600
602
Model Inputs
Sensor A
604
Model Calculation(s)
Calculation I
Calculation II
606
Model Output
≤ 80%
> 80%
608
Workflow
Operation 1
Operation 2

FIGURE 6A

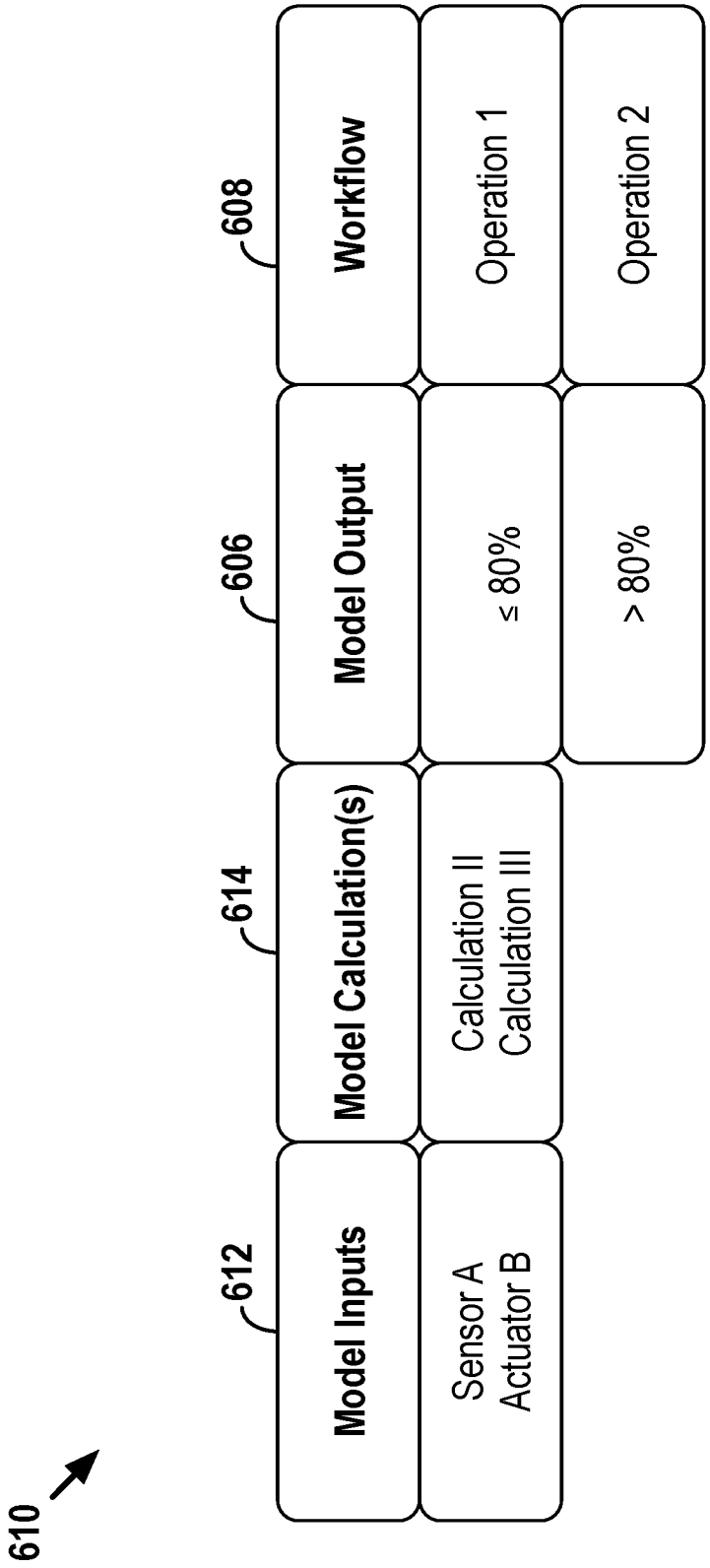

610
612
Model Inputs
Sensor A
Actuator B
614
Model Calculation(s)
Calculation II
Calculation III
606
Model Output
≤ 80%
> 80%
608
Workflow
Operation 1
Operation 2

FIGURE 6B

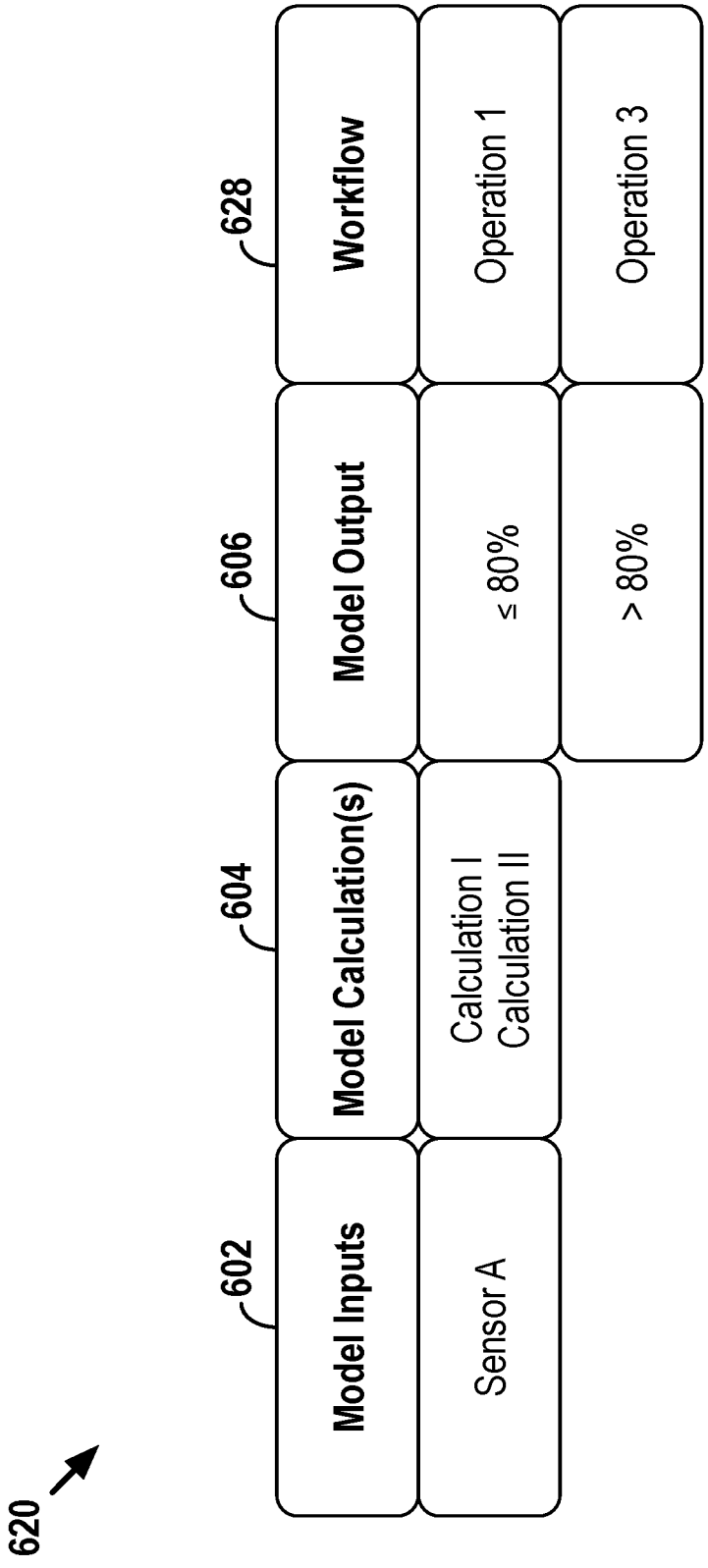

620
602
Model Inputs
Sensor A
604
Model Calculation(s)
Calculation I
Calculation II
606
Model Output
≤ 80%
> 80%
628
Workflow
Operation 1
Operation 3

FIGURE 6C

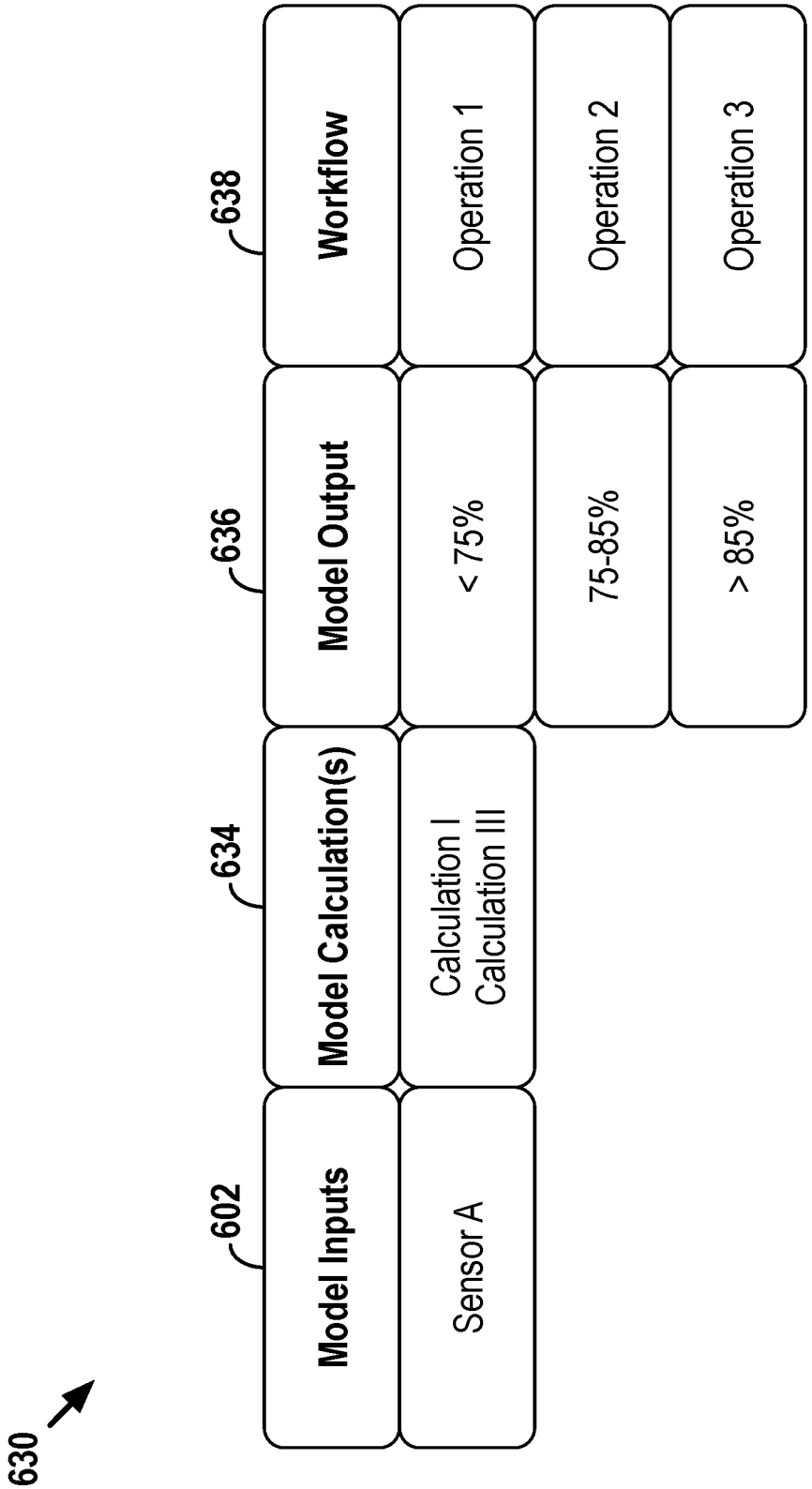

630
602
Model Inputs
Sensor A
634
Model Calculation(s)
Calculation I
Calculation III
636
Model Output
< 75%
75-85%
> 85%
638
Workflow
Operation 1
Operation 2
Operation 3

FIGURE 6D

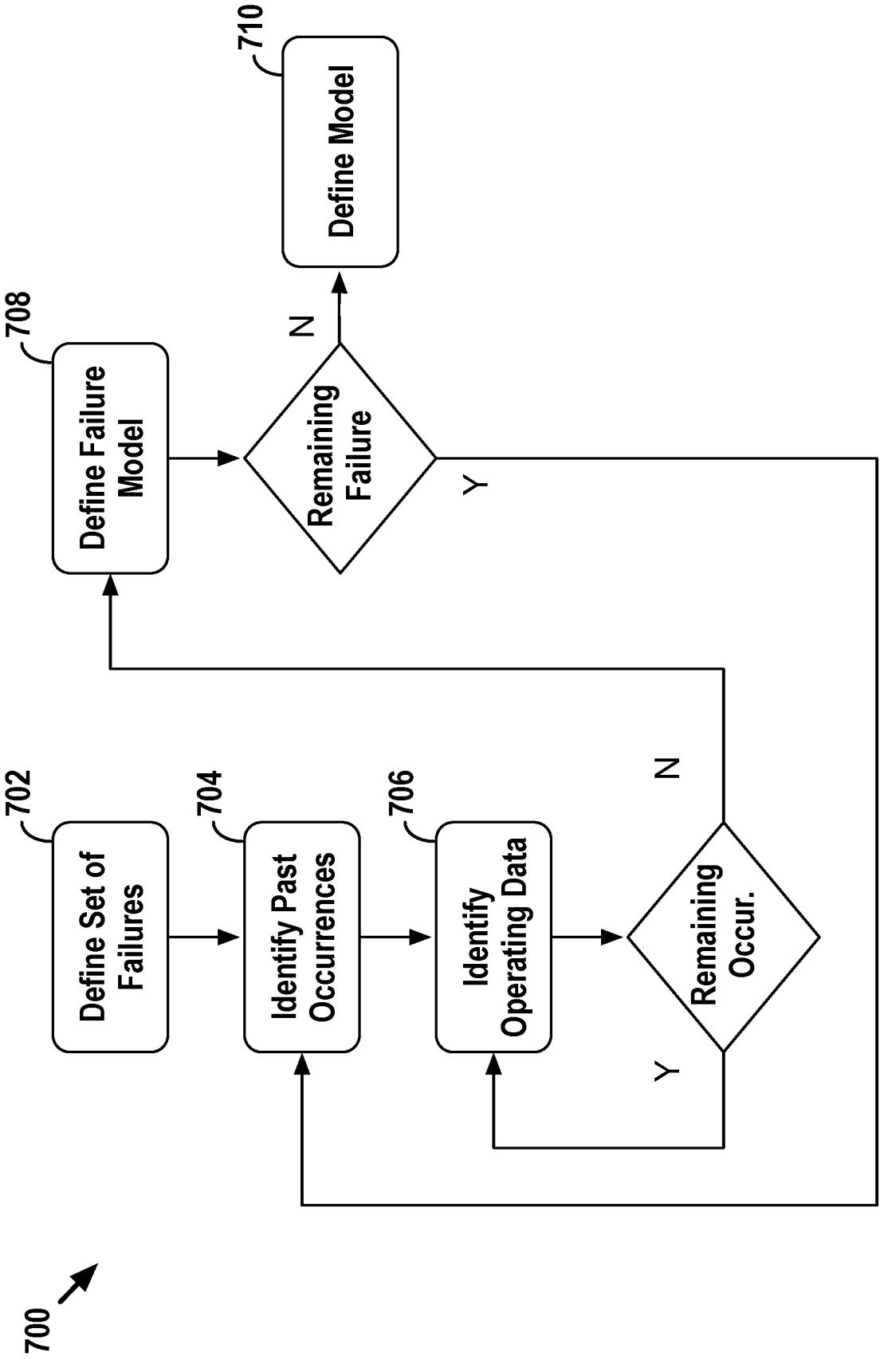

700
702
Define Set of Failures
704
Identify Past Occurrences
706
Identify Operating Data
Remaining Occur.
N
Y
708
Define Failure Model
Remaining Failure
N
Y
710
Define Model

FIGURE 7

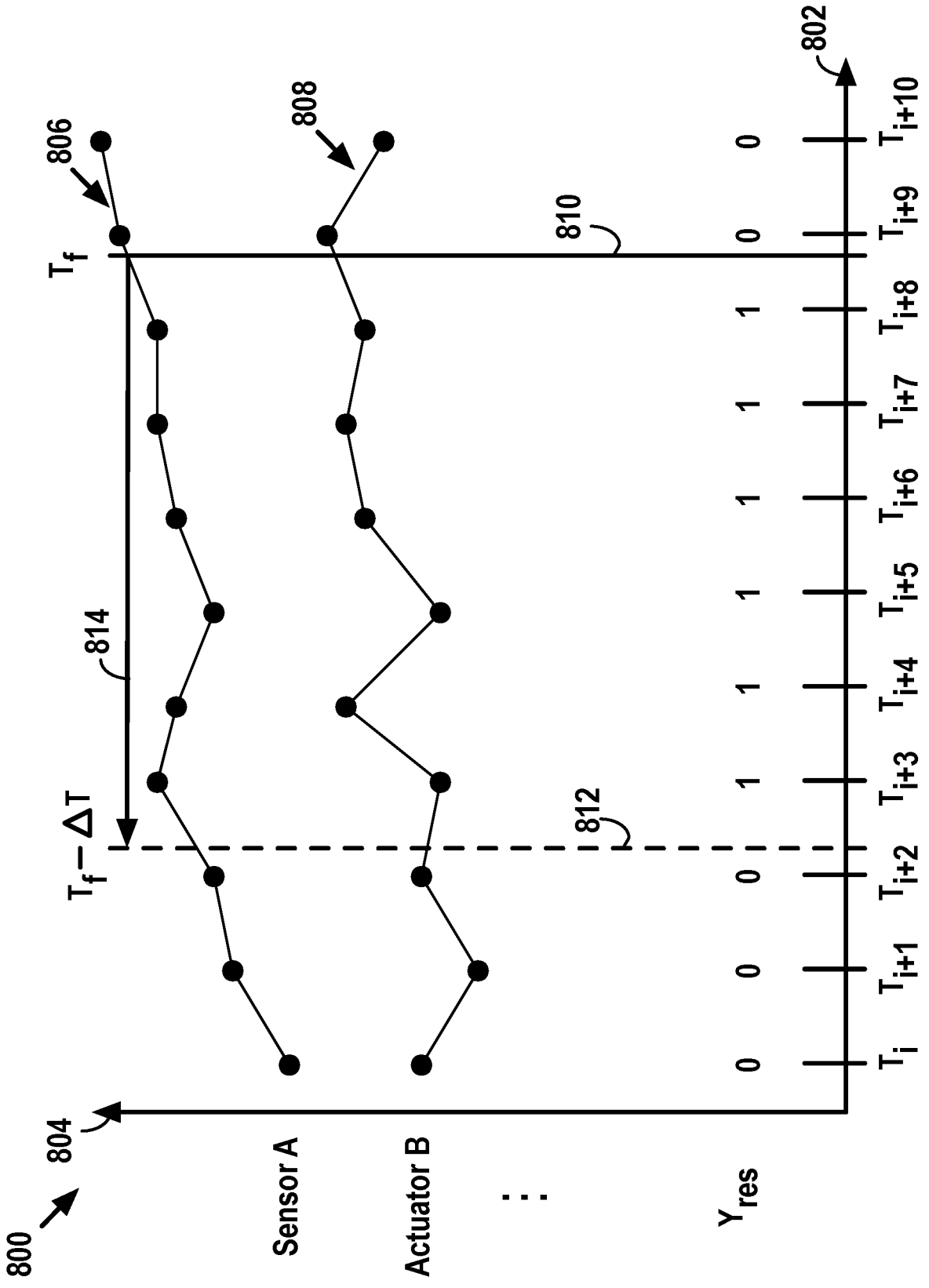

800
804
802
806
808
810
812
814
Sensor A
Actuator B
...
Y_{res}
T_f
$T_f - \Delta T$
T_i
T_{i+1}
T_{i+2}
T_{i+3}
T_{i+4}
T_{i+5}
T_{i+6}
T_{i+7}
T_{i+8}
T_{i+9}
T_{i+10}
0 0 0 1 1 1 1 1 0 0 0

FIGURE 8

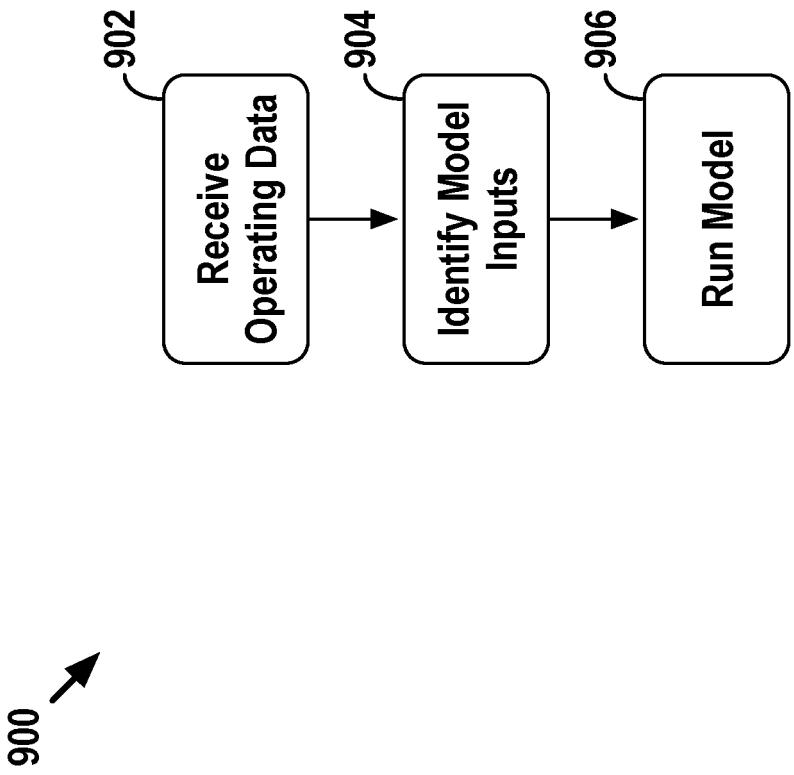

902
Receive Operating Data
904
Identify Model Inputs
906
Run Model
900

FIGURE 9

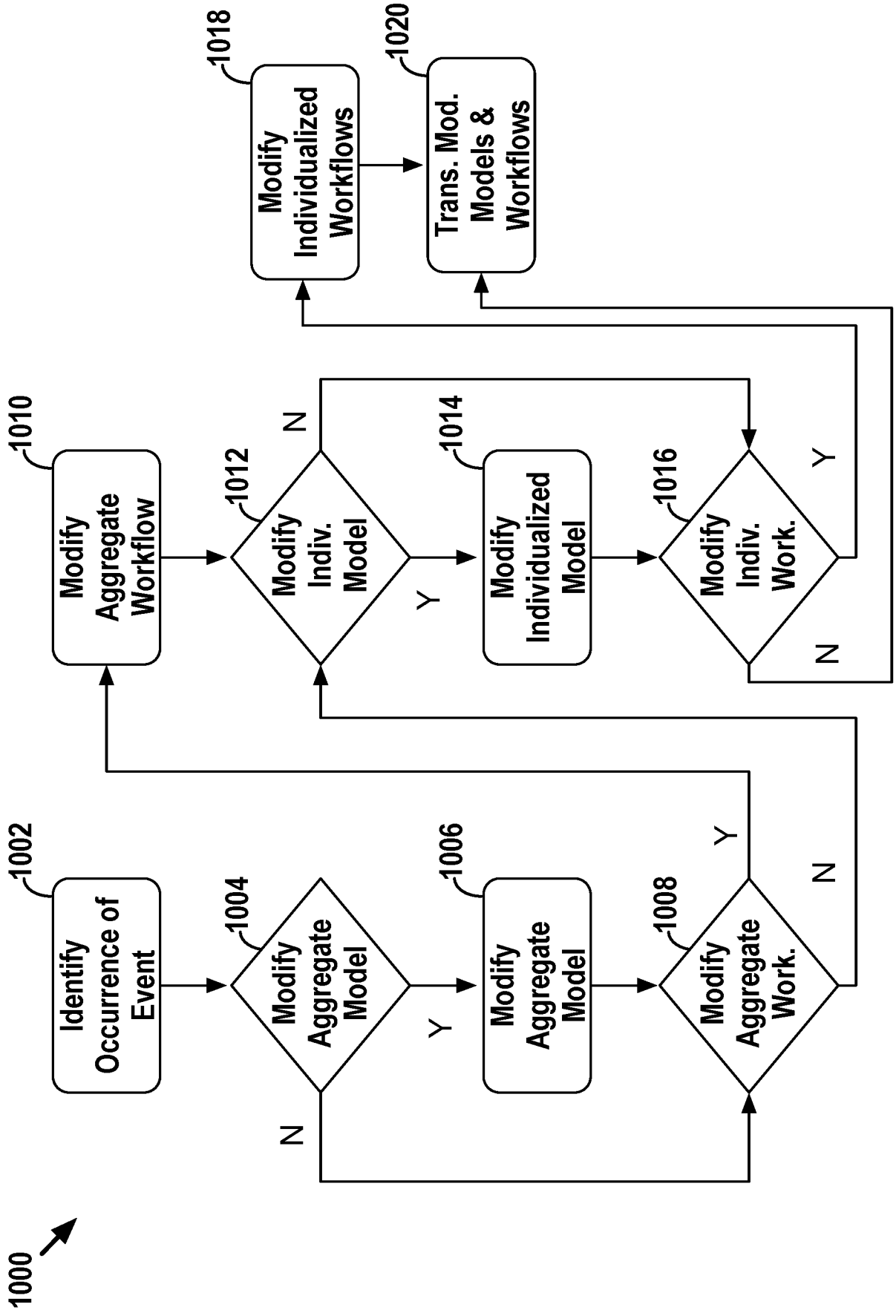

1000
1002
Identify Occurrence of Event
1004
Modify Aggregate Model
Y
N
1006
Modify Aggregate Model
1008
Modify Aggregate Work.
Y
N
1010
Modify Aggregate Workflow
1012
Modify Indiv. Model
Y
N
1014
Modify Individualized Model
1016
Modify Indiv. Work.
Y
N
1018
Modify Individualized Workflows
1020
Trans. Mod. Models & Workflows

FIGURE 10

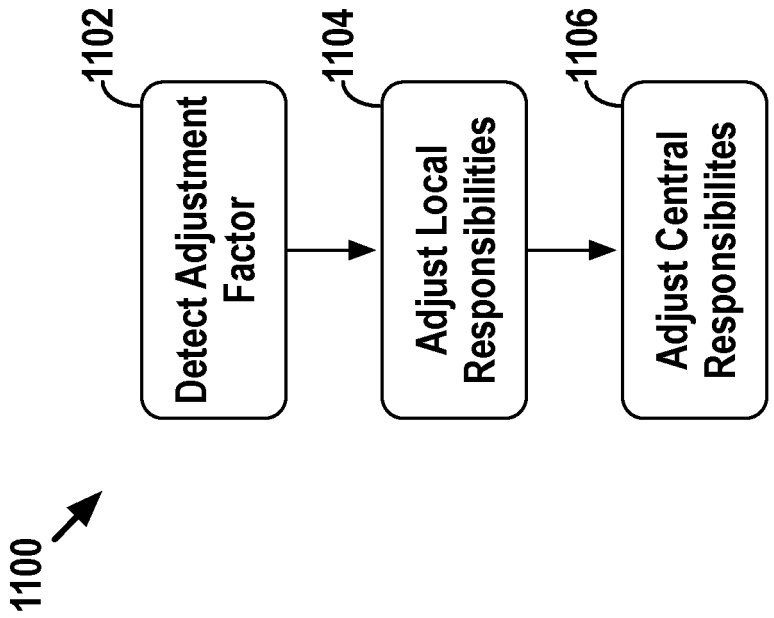

1100
1102
Detect Adjustment Factor
1104
Adjust Local Responsibilities
1106
Adjust Central Responsibilites

FIGURE 11

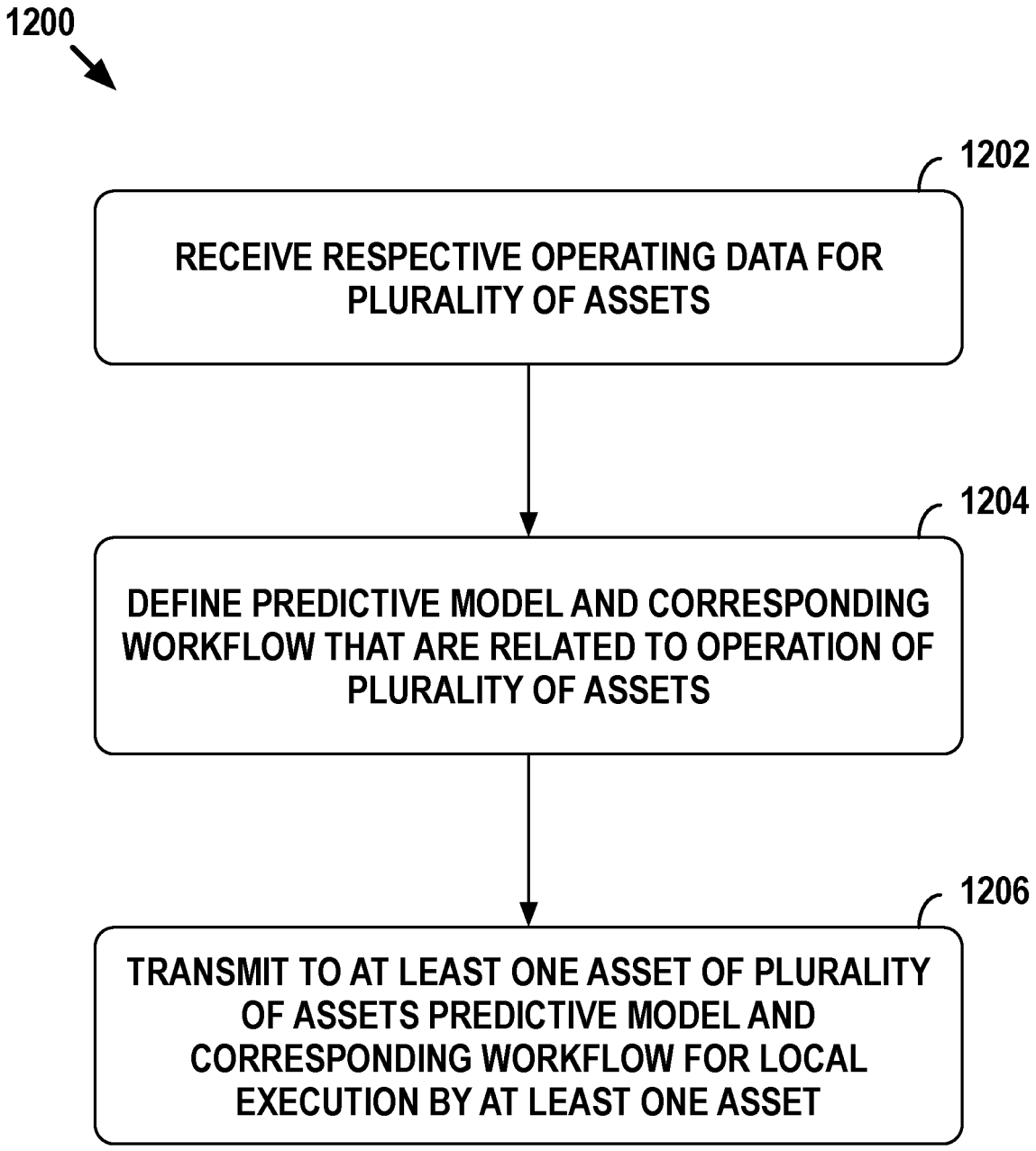

1200
1202
RECEIVE RESPECTIVE OPERATING DATA FOR PLURALITY OF ASSETS
1204
DEFINE PREDICTIVE MODEL AND CORRESPONDING WORKFLOW THAT ARE RELATED TO OPERATION OF PLURALITY OF ASSETS
1206
TRANSMIT TO AT LEAST ONE ASSET OF PLURALITY OF ASSETS PREDICTIVE MODEL AND CORRESPONDING WORKFLOW FOR LOCAL EXECUTION BY AT LEAST ONE ASSET

FIGURE 12

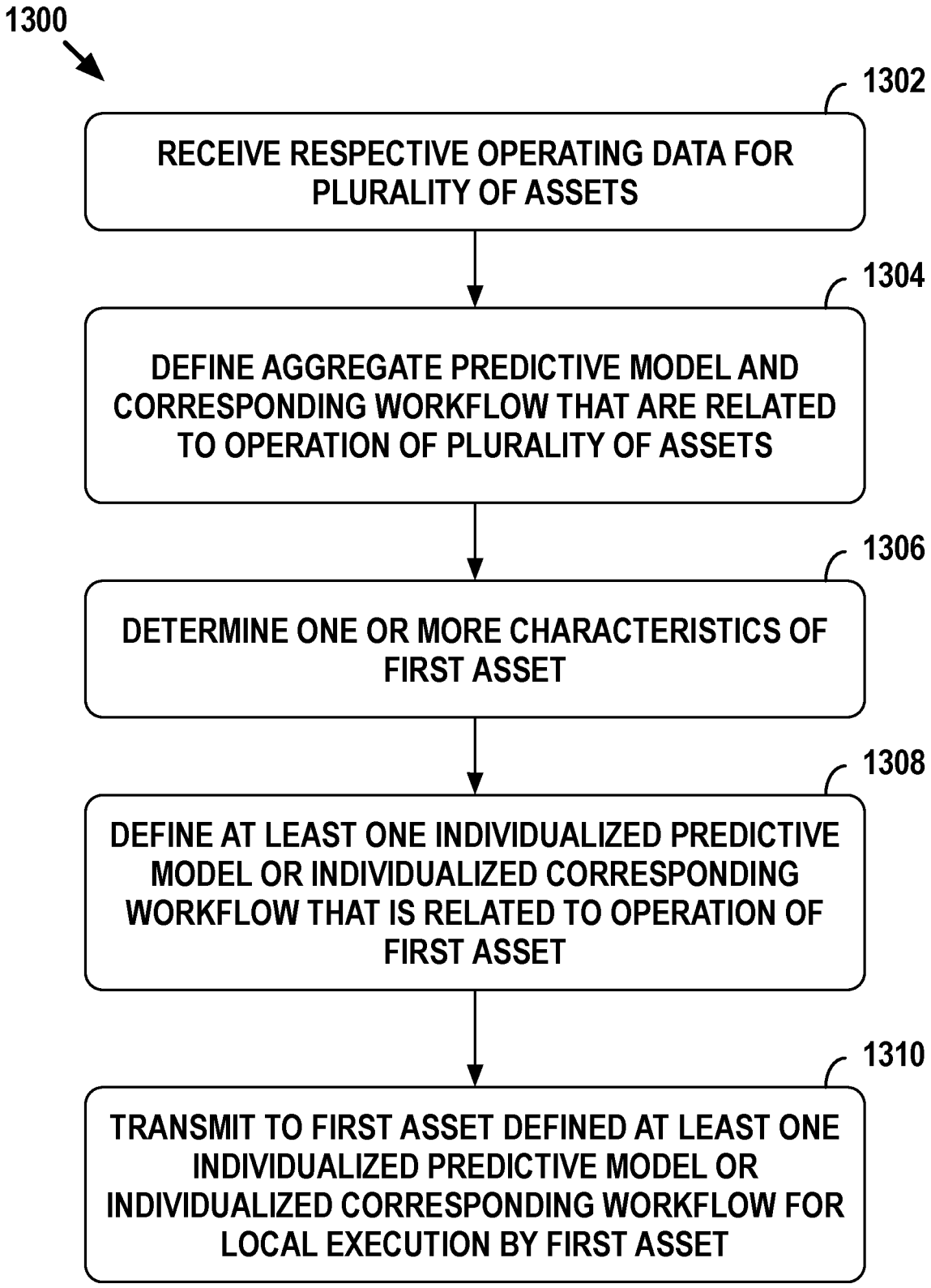

1300
1302
RECEIVE RESPECTIVE OPERATING DATA FOR PLURALITY OF ASSETS
1304
DEFINE AGGREGATE PREDICTIVE MODEL AND CORRESPONDING WORKFLOW THAT ARE RELATED TO OPERATION OF PLURALITY OF ASSETS
1306
DETERMINE ONE OR MORE CHARACTERISTICS OF FIRST ASSET
1308
DEFINE AT LEAST ONE INDIVIDUALIZED PREDICTIVE MODEL OR INDIVIDUALIZED CORRESPONDING WORKFLOW THAT IS RELATED TO OPERATION OF FIRST ASSET
1310
TRANSMIT TO FIRST ASSET DEFINED AT LEAST ONE INDIVIDUALIZED PREDICTIVE MODEL OR INDIVIDUALIZED CORRESPONDING WORKFLOW FOR LOCAL EXECUTION BY FIRST ASSET

FIGURE 13

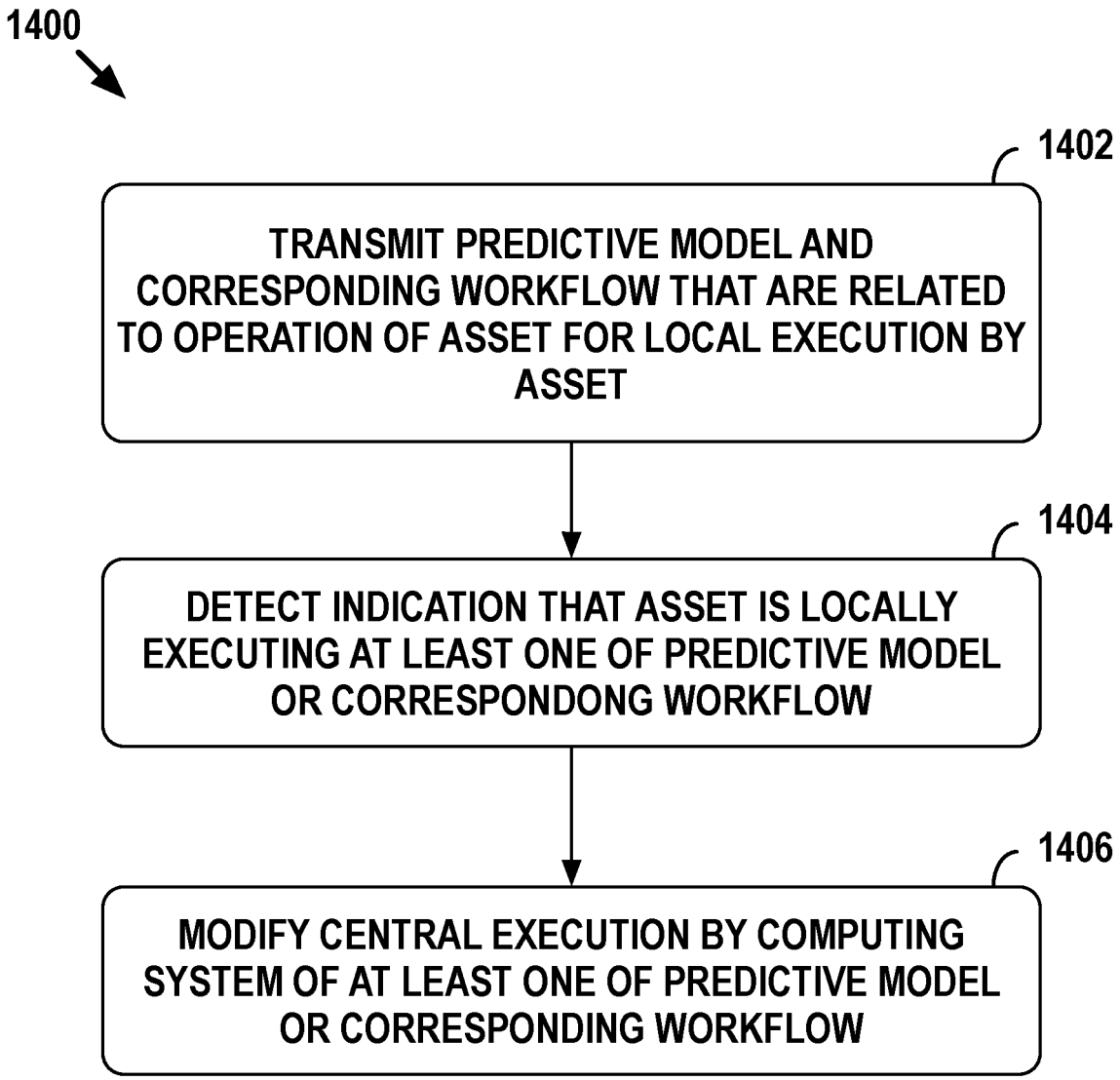

1400
1402
TRANSMIT PREDICTIVE MODEL AND CORRESPONDING WORKFLOW THAT ARE RELATED TO OPERATION OF ASSET FOR LOCAL EXECUTION BY ASSET
1404
DETECT INDICATION THAT ASSET IS LOCALLY EXECUTING AT LEAST ONE OF PREDICTIVE MODEL OR CORRESPONDONG WORKFLOW
1406
MODIFY CENTRAL EXECUTION BY COMPUTING SYSTEM OF AT LEAST ONE OF PREDICTIVE MODEL OR CORRESPONDING WORKFLOW

FIGURE 14

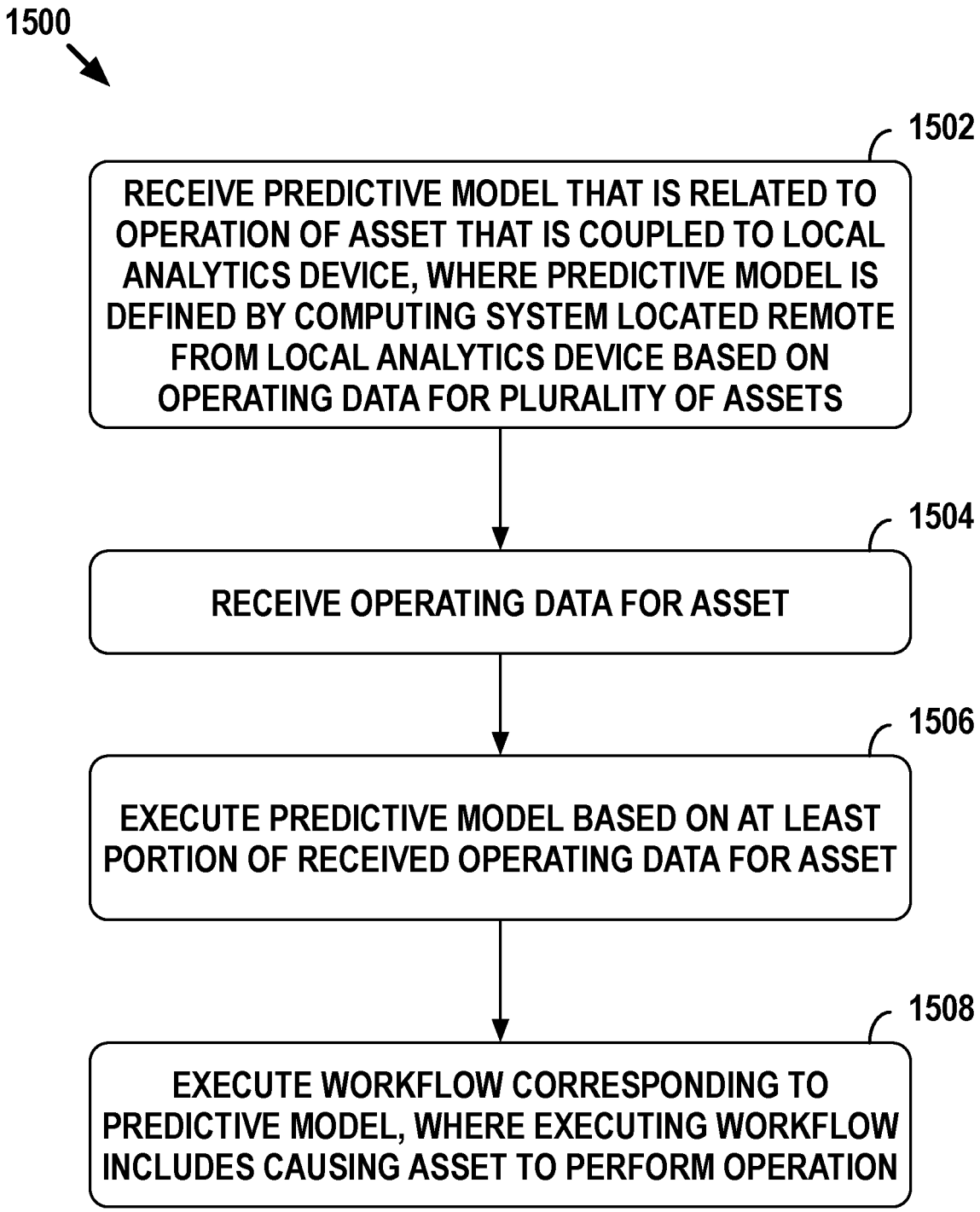

1500
1502
RECEIVE PREDICTIVE MODEL THAT IS RELATED TO OPERATION OF ASSET THAT IS COUPLED TO LOCAL ANALYTICS DEVICE, WHERE PREDICTIVE MODEL IS DEFINED BY COMPUTING SYSTEM LOCATED REMOTE FROM LOCAL ANALYTICS DEVICE BASED ON OPERATING DATA FOR PLURALITY OF ASSETS
1504
RECEIVE OPERATING DATA FOR ASSET
1506
EXECUTE PREDICTIVE MODEL BASED ON AT LEAST PORTION OF RECEIVED OPERATING DATA FOR ASSET
1508
EXECUTE WORKFLOW CORRESPONDING TO PREDICTIVE MODEL, WHERE EXECUTING WORKFLOW INCLUDES CAUSING ASSET TO PERFORM OPERATION

FIGURE 15