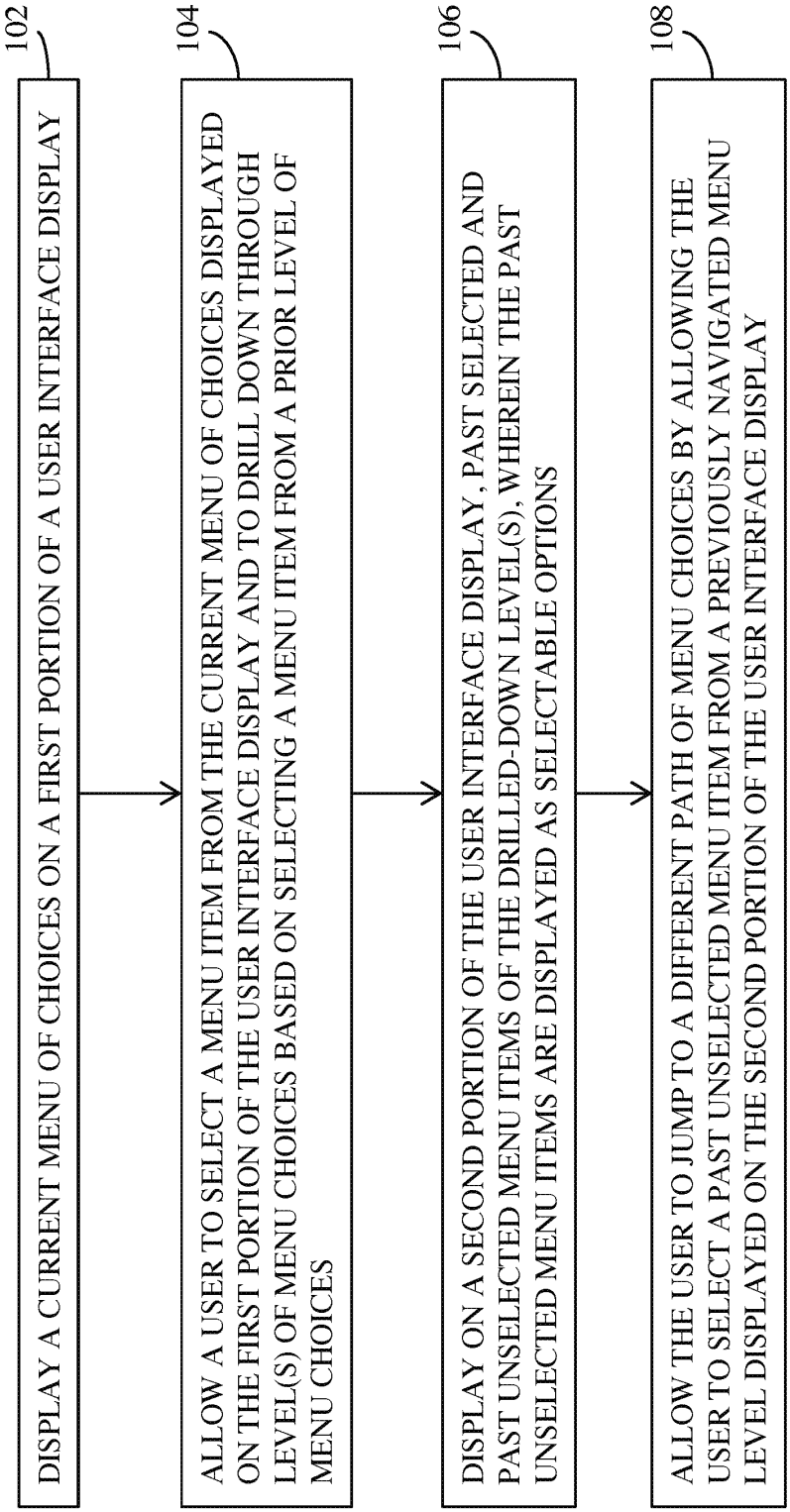
102
DISPLAY A CURRENT MENU OF CHOICES ON A FIRST PORTION OF A USER INTERFACE DISPLAY
104
ALLOW A USER TO SELECT A MENU ITEM FROM THE CURRENT MENU OF CHOICES DISPLAYED ON THE FIRST PORTION OF THE USER INTERFACE DISPLAY AND TO DRILL DOWN THROUGH LEVEL(S) OF MENU CHOICES BASED ON SELECTING A MENU ITEM FROM A PRIOR LEVEL OF MENU CHOICES
106
DISPLAY ON A SECOND PORTION OF THE USER INTERFACE DISPLAY, PAST SELECTED AND PAST UNSELECTED MENU ITEMS OF THE DRILLED-DOWN LEVEL(S), WHEREIN THE PAST UNSELECTED MENU ITEMS ARE DISPLAYED AS SELECTABLE OPTIONS
108
ALLOW THE USER TO JUMP TO A DIFFERENT PATH OF MENU CHOICES BY ALLOWING THE USER TO SELECT A PAST UNSELECTED MENU ITEM FROM A PREVIOUSLY NAVIGATED MENU LEVEL DISPLAYED ON THE SECOND PORTION OF THE USER INTERFACE DISPLAY

FIG. 1

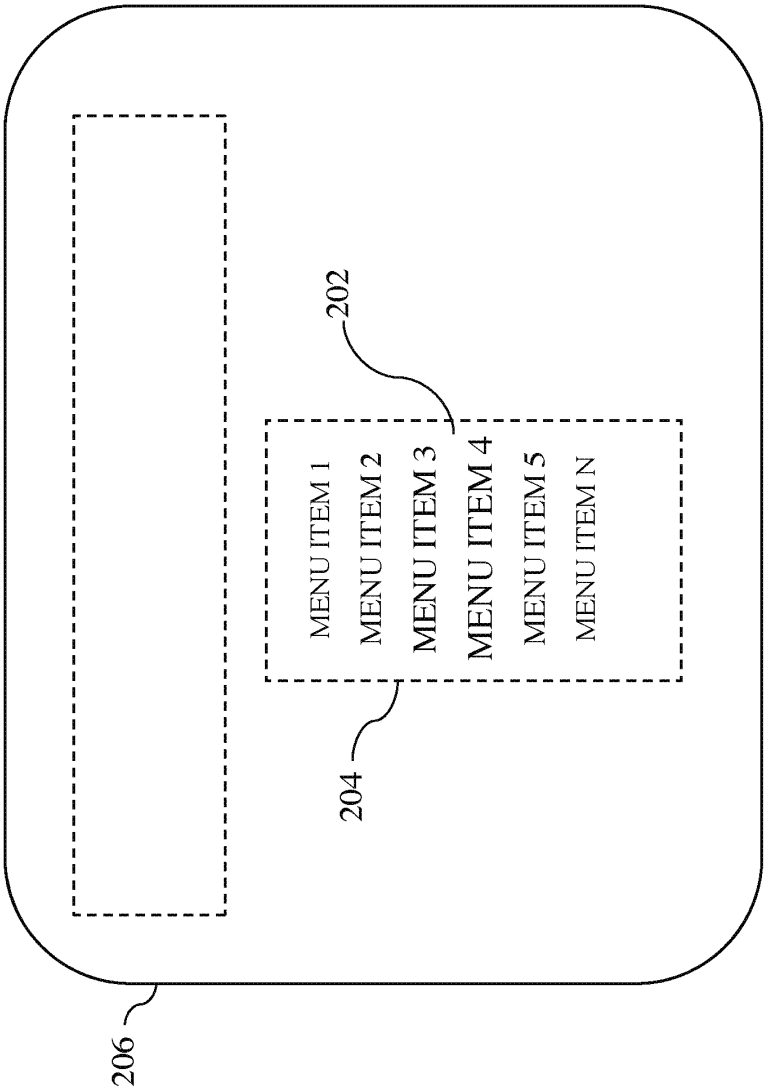
206
204
MENU ITEM 1
MENU ITEM 2
MENU ITEM 3
MENU ITEM 4
MENU ITEM 5
MENU ITEM N
202

FIG. 2A

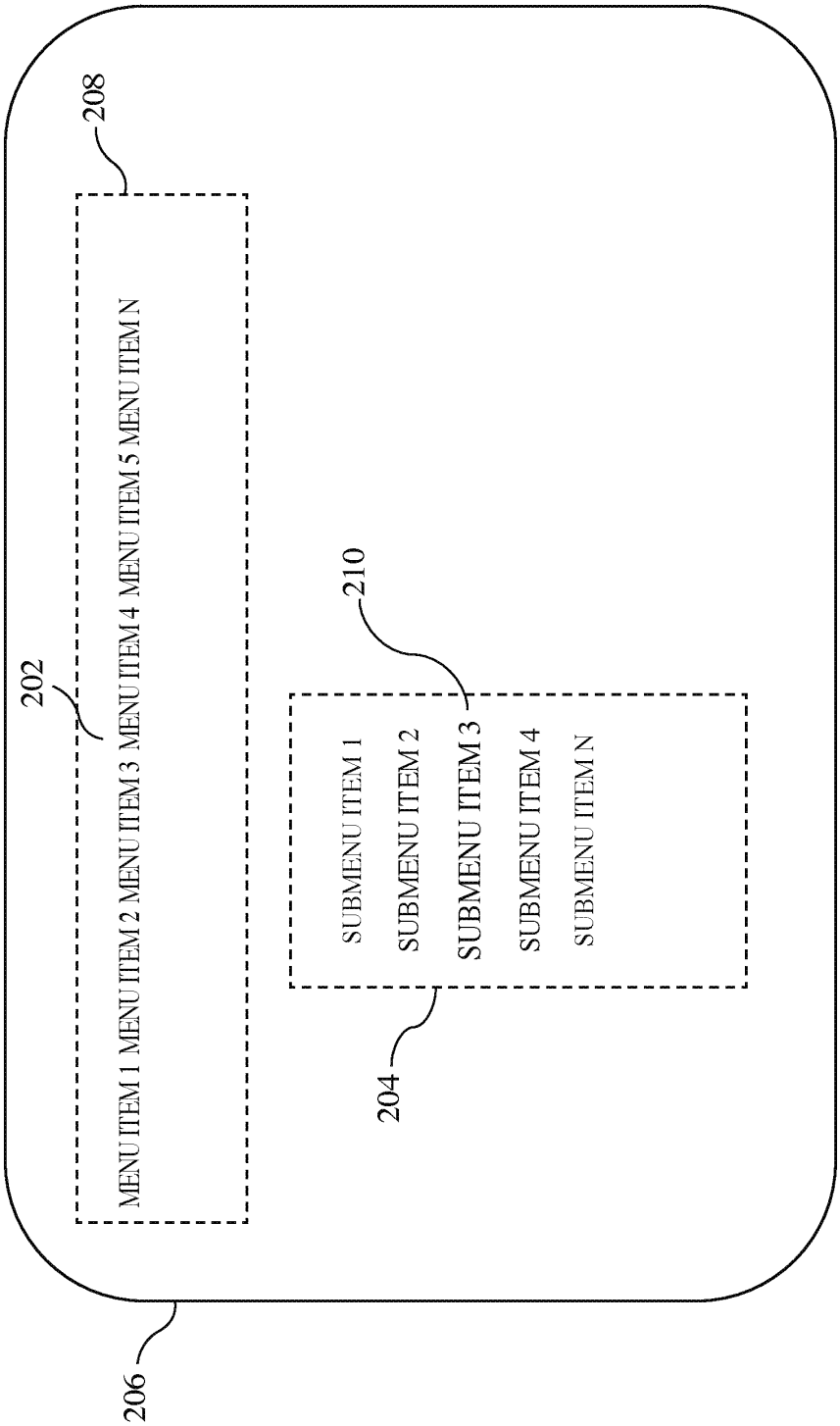
208
202
MENU ITEM 1 MENU ITEM 2 MENU ITEM 3 MENU ITEM 4 MENU ITEM 5 MENU ITEM N
210
SUBMENU ITEM 1
SUBMENU ITEM 2
SUBMENU ITEM 3
SUBMENU ITEM 4
SUBMENU ITEM N
204
206

FIG. 2B

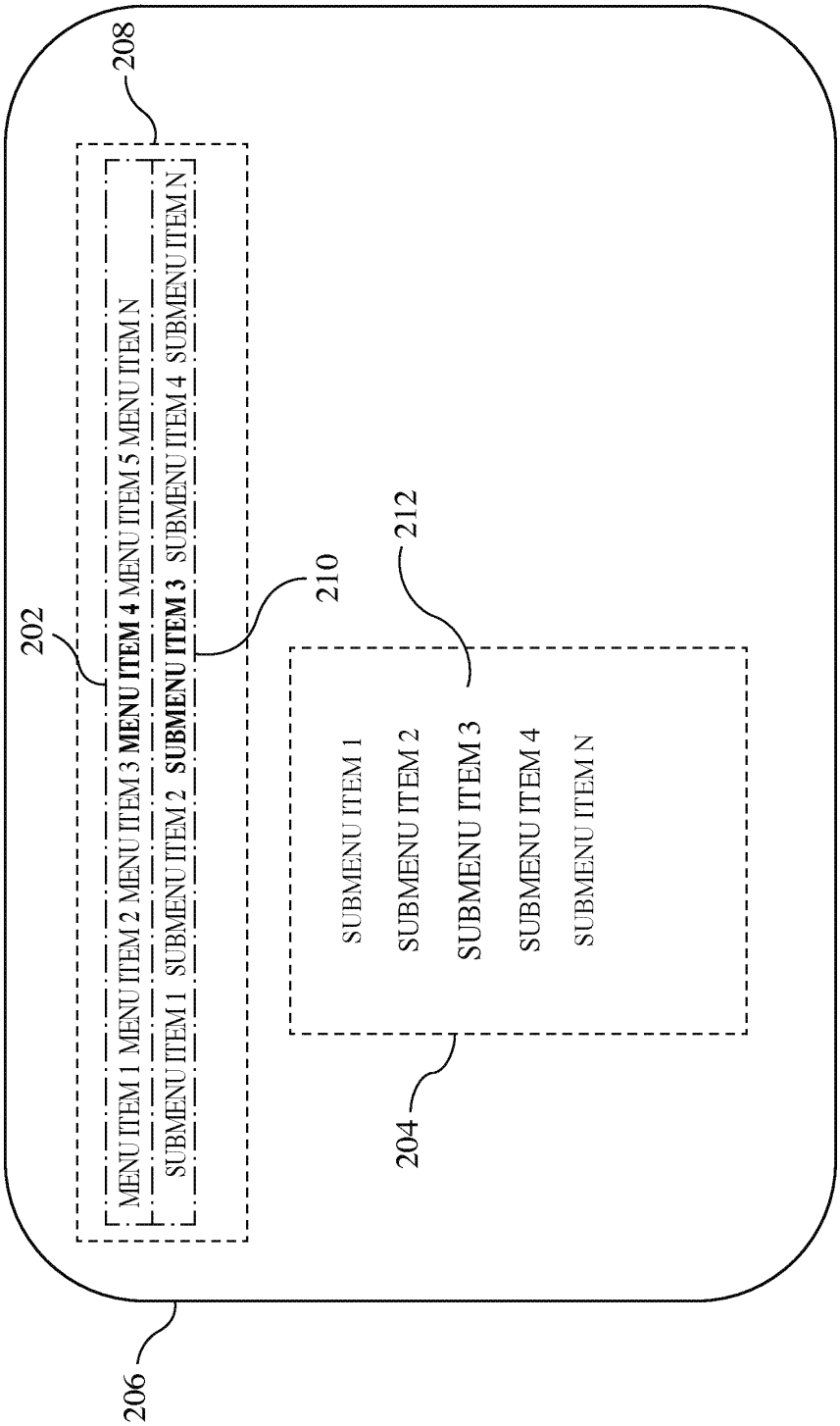
208
202
MENU ITEM 1 MENU ITEM 2 MENU ITEM 3 MENU ITEM 4 MENU ITEM 5 MENU ITEM N
SUBMENU ITEM 1 SUBMENU ITEM 2 SUBMENU ITEM 3 SUBMENU ITEM 4 SUBMENU ITEM N
210
212
SUBMENU ITEM 1
SUBMENU ITEM 2
SUBMENU ITEM 3
SUBMENU ITEM 4
SUBMENU ITEM N
204
206

FIG. 2C

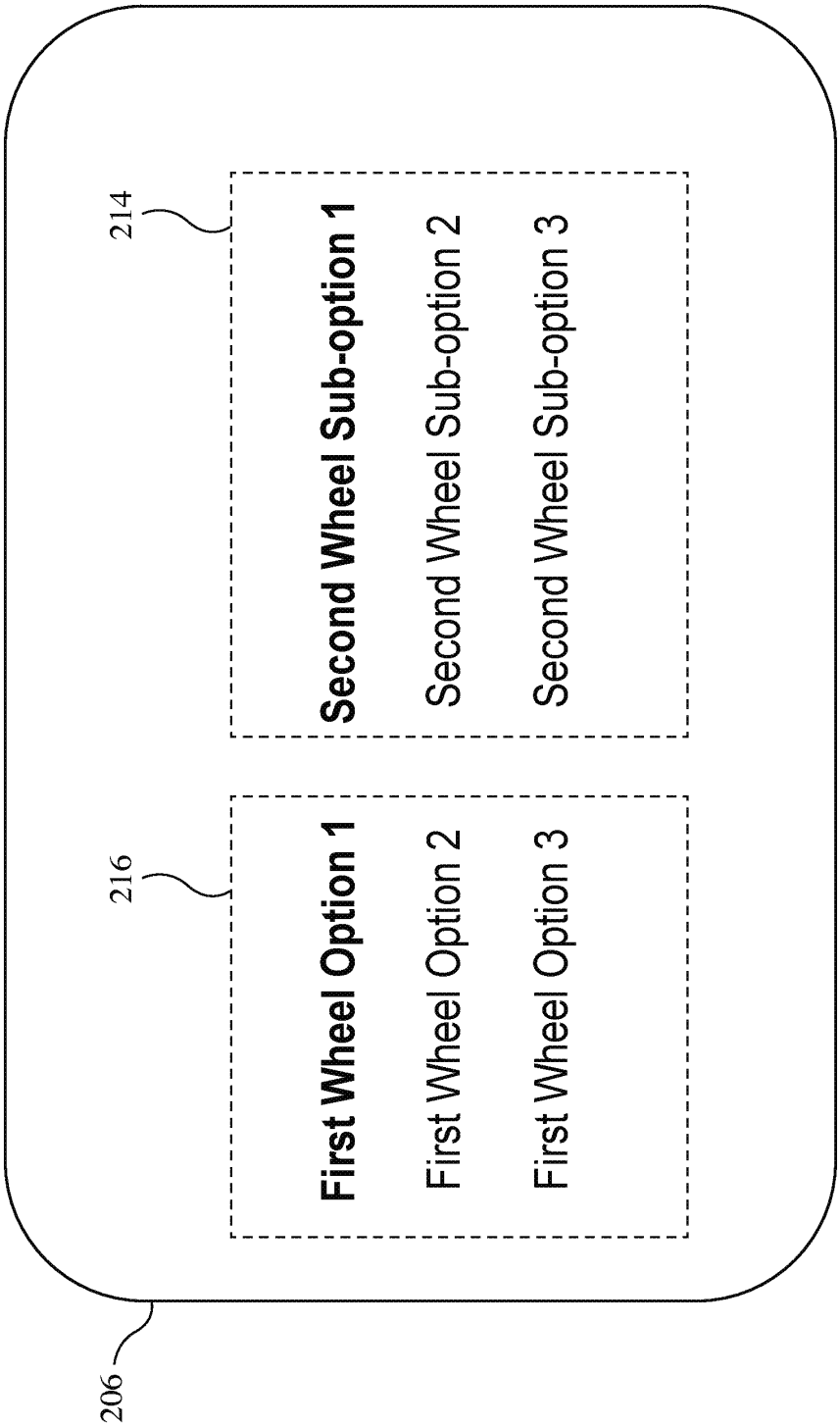
206
216
First Wheel Option 1
First Wheel Option 2
First Wheel Option 3
214
Second Wheel Sub-option 1
Second Wheel Sub-option 2
Second Wheel Sub-option 3

FIG. 2D

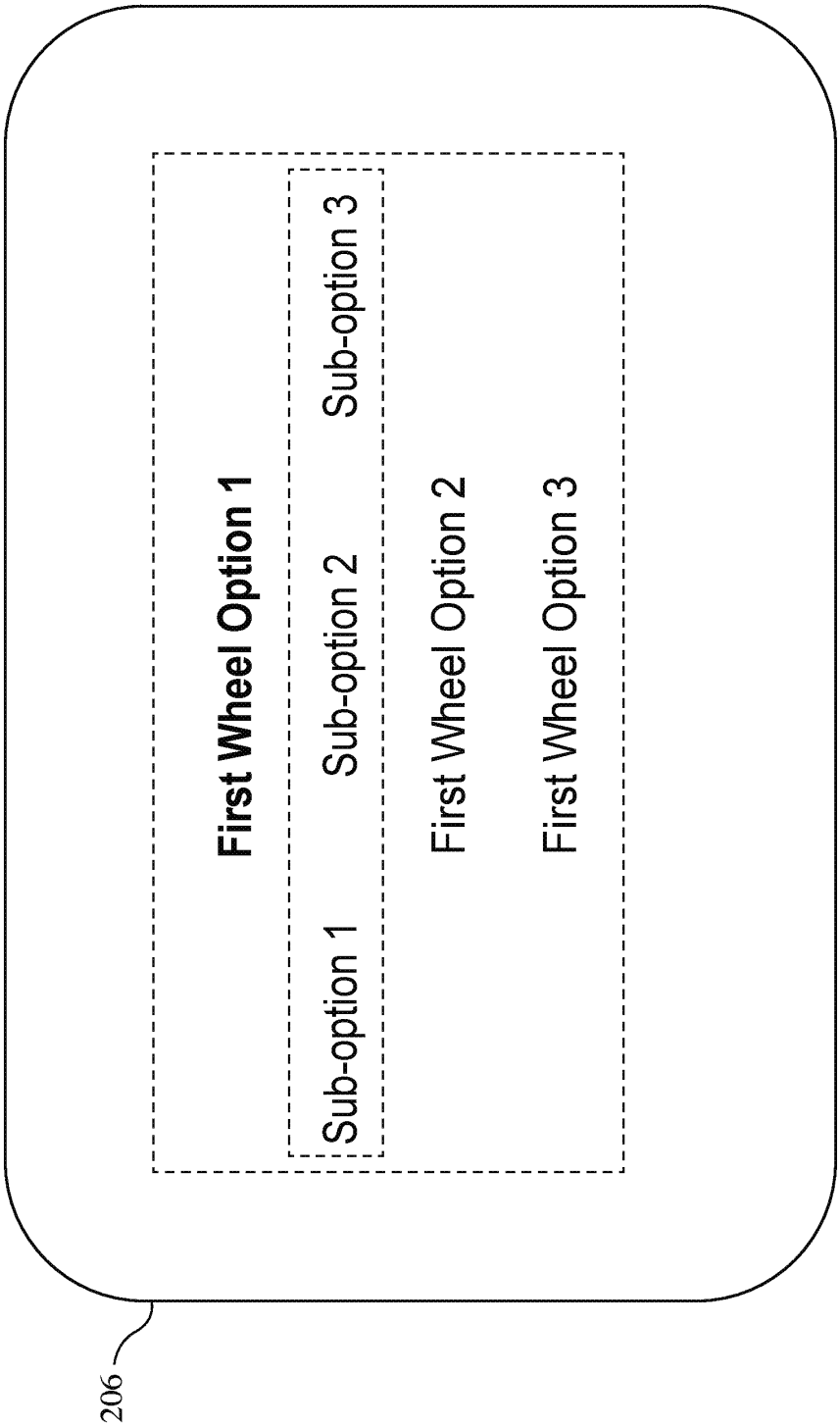
First Wheel Option 1
Sub-option 1
Sub-option 2
Sub-option 3
First Wheel Option 2
First Wheel Option 3
206

FIG. 2E

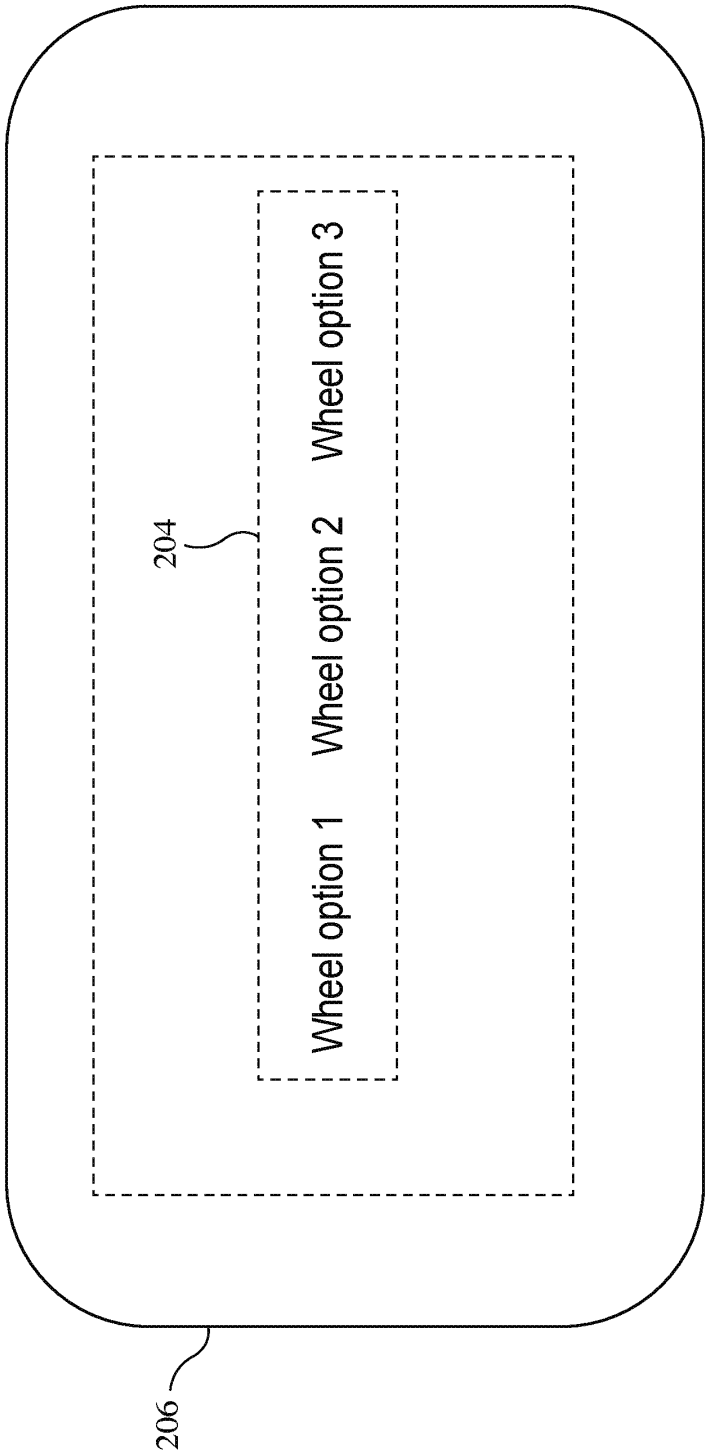

FIG. 2F

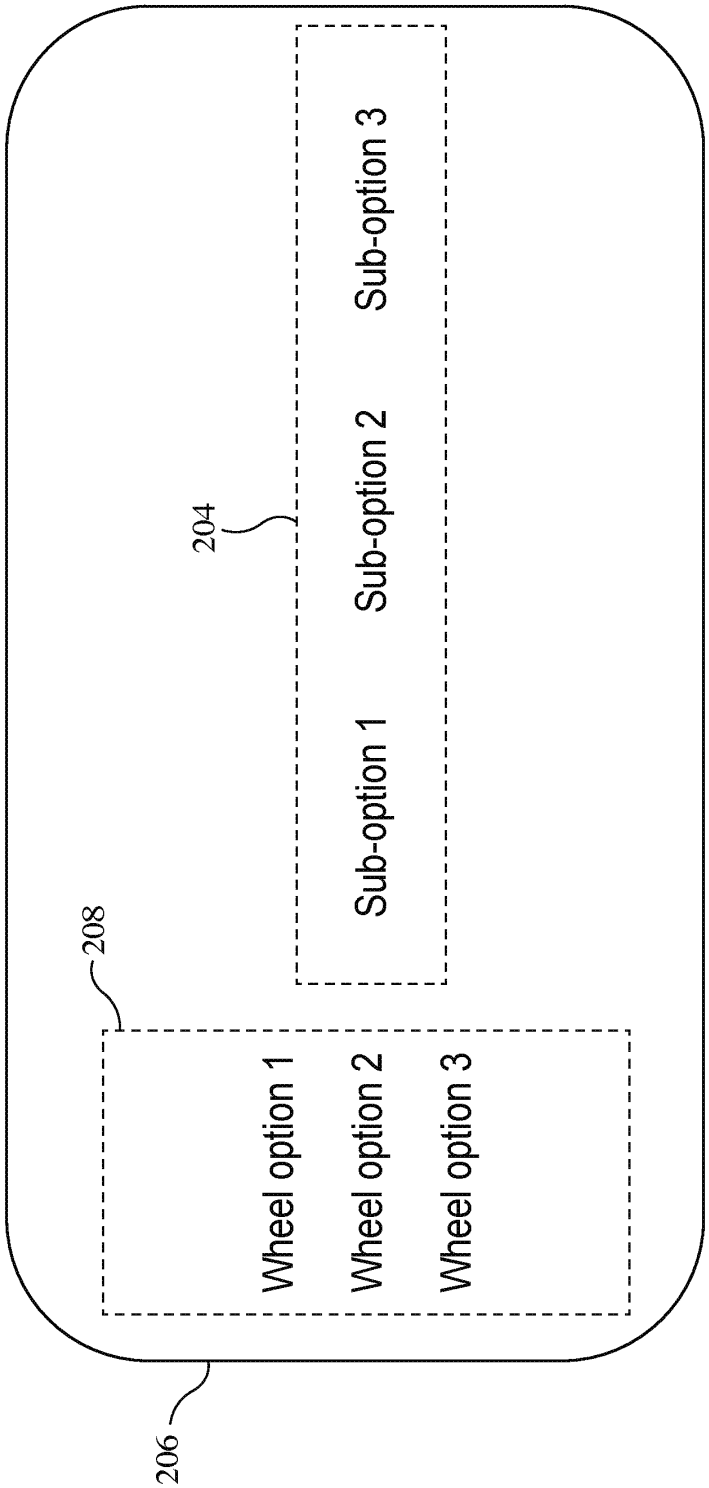
206
208
Wheel option 1
Wheel option 2
Wheel option 3
204
Sub-option 1
Sub-option 2
Sub-option 3

FIG. 2G

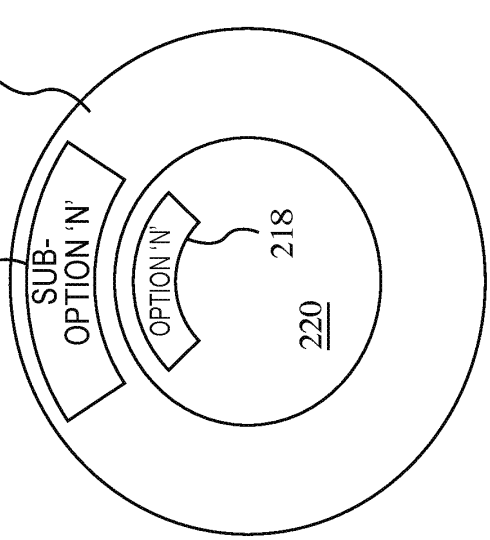

FIG. 2I

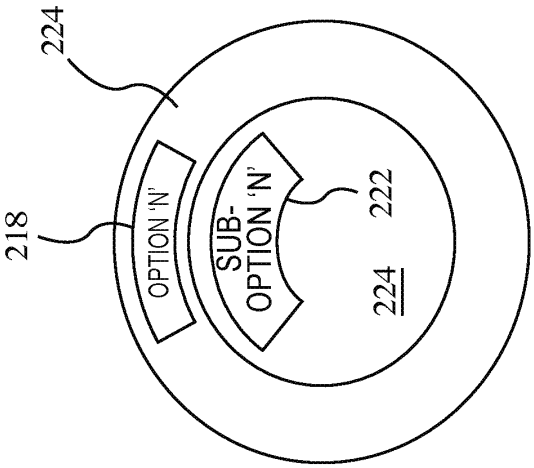

FIG. 2J

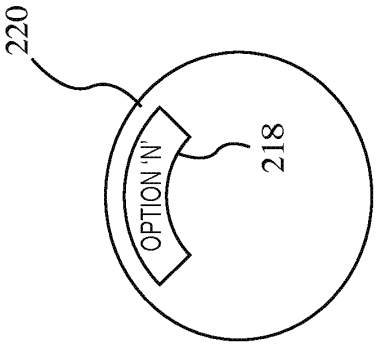

FIG. 2H

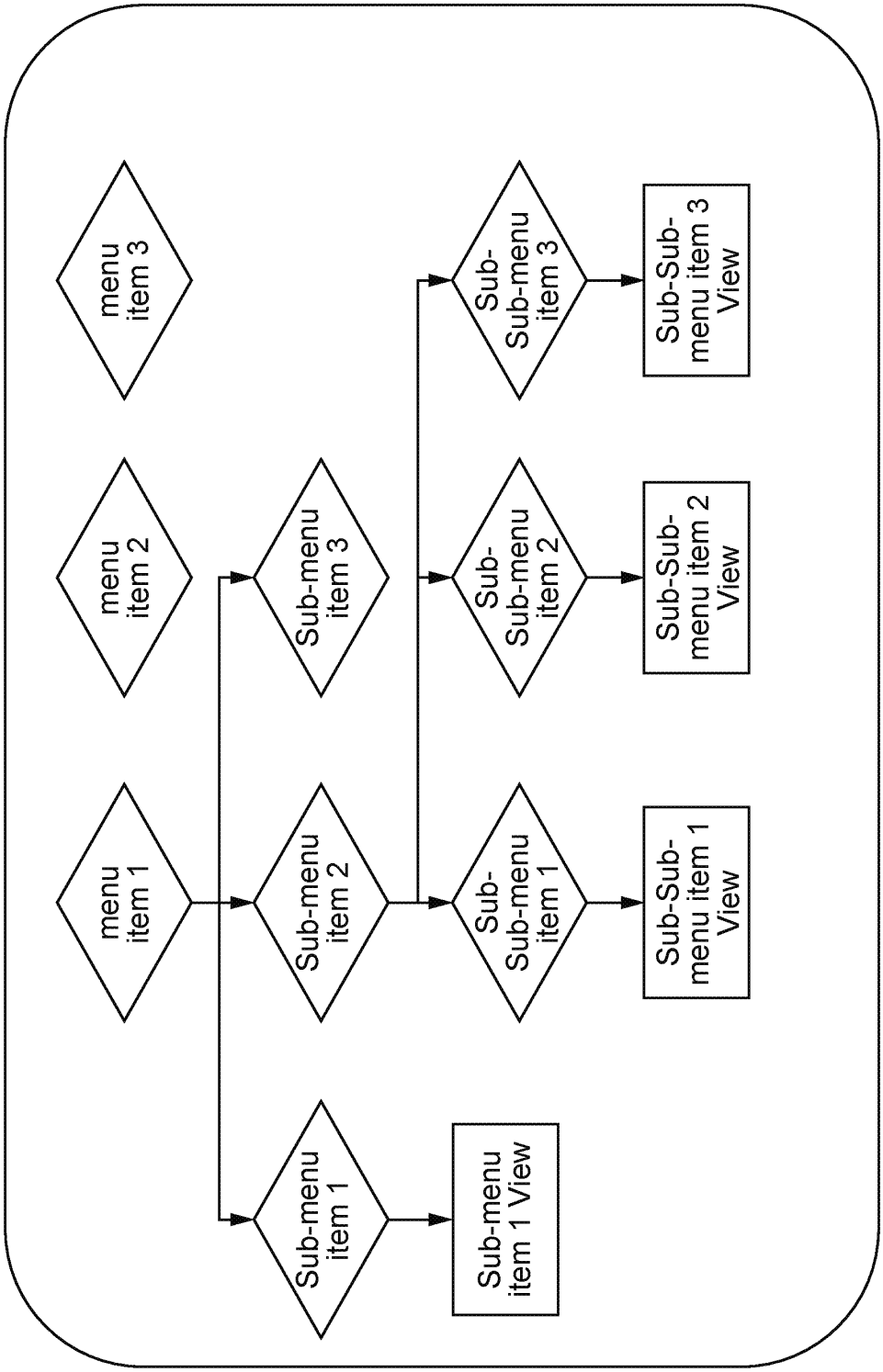
menu item 1
menu item 2
menu item 3
Sub-menu item 1
Sub-menu item 1 View
Sub-menu item 2
Sub-menu item 3
Sub-Sub-menu item 1
Sub-Sub-menu item 2
Sub-Sub-menu item 3
Sub-Sub-menu item 1 View
Sub-Sub-menu item 2 View
Sub-Sub-menu item 3 View

FIG. 2K

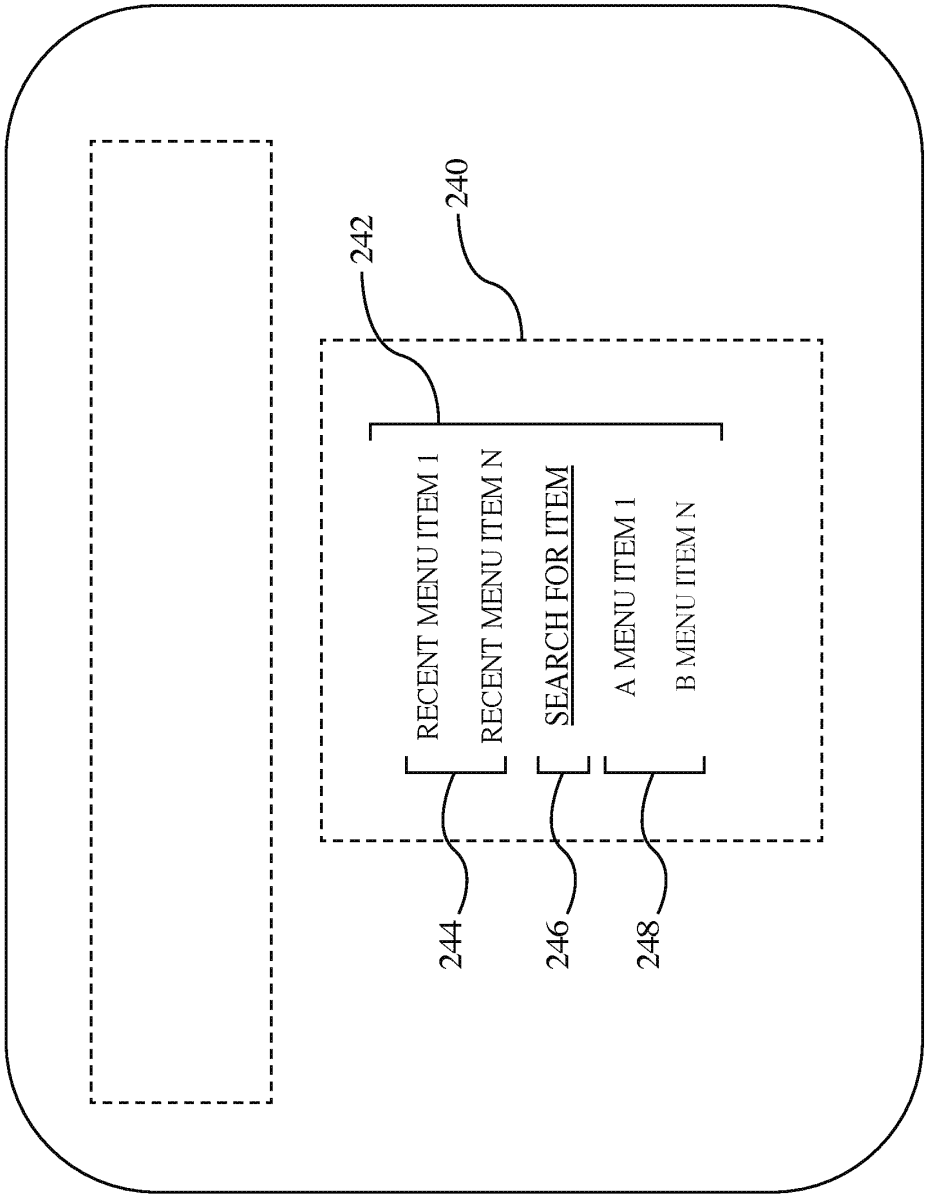
240
242
RECENT MENU ITEM 1
RECENT MENU ITEM N
SEARCH FOR ITEM
A MENU ITEM 1
B MENU ITEM N
244
246
248

FIG. 2L

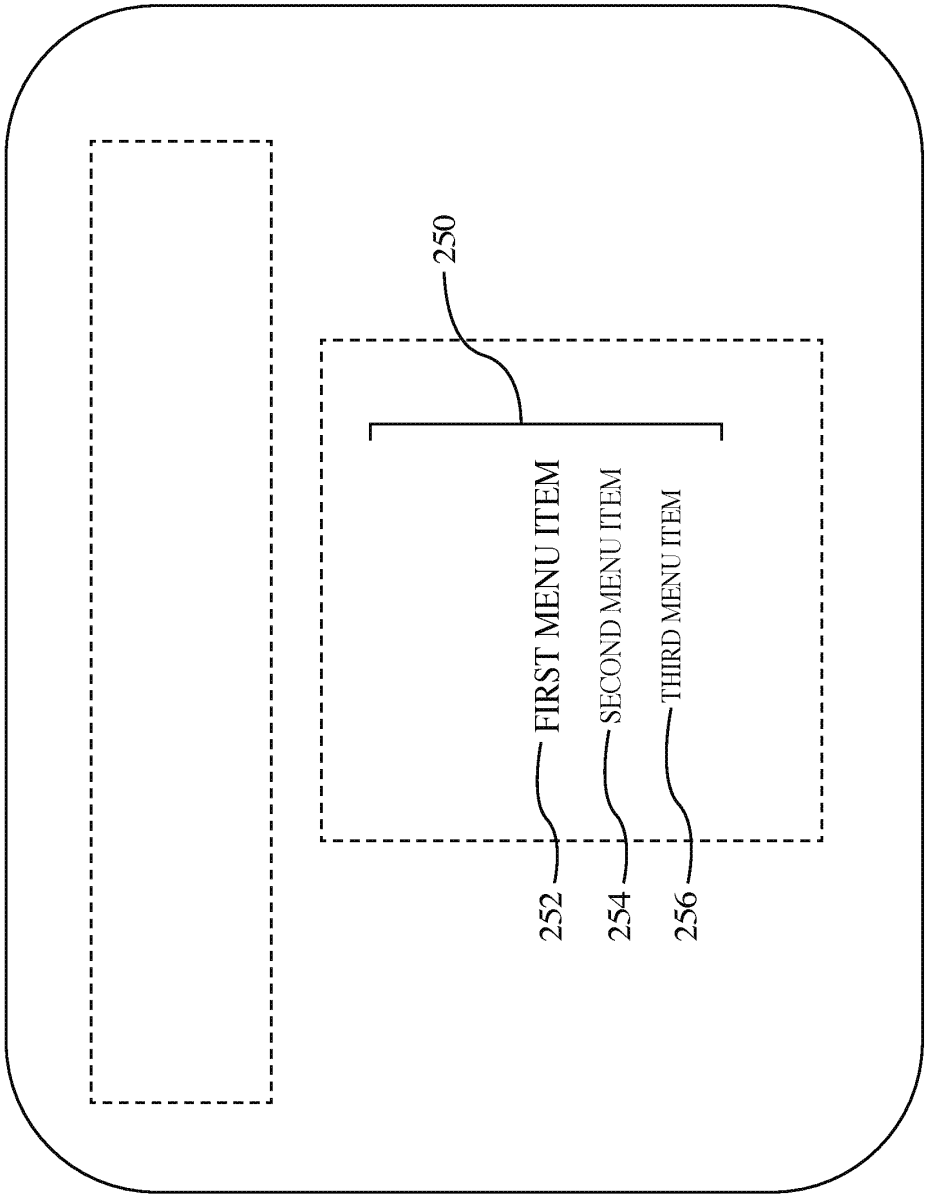
250
FIRST MENU ITEM
SECOND MENU ITEM
THIRD MENU ITEM
252
254
256

FIG. 2M

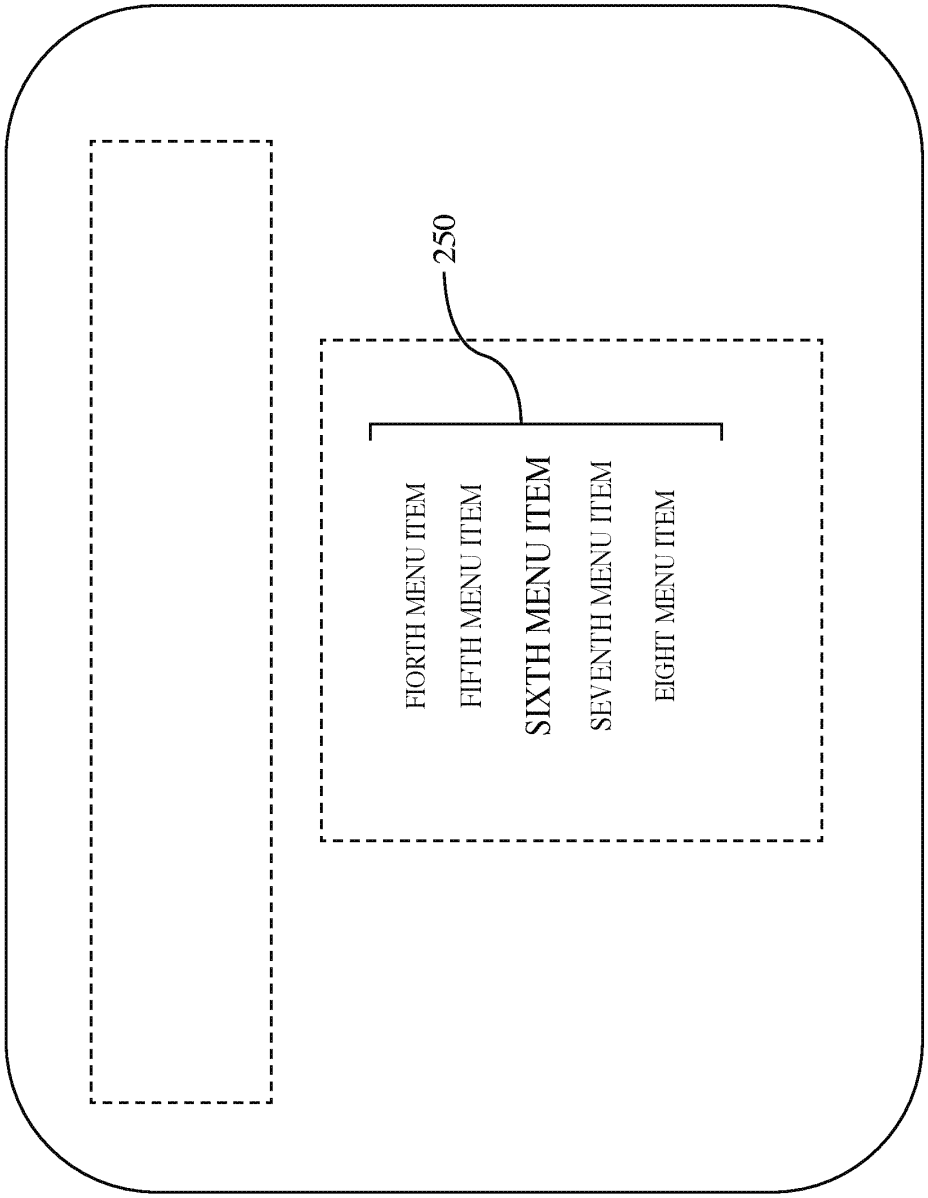
250
FIORTH MENU ITEM
FIFTH MENU ITEM
SIXTH MENU ITEM
SEVENTH MENU ITEM
EIGHT MENU ITEM

FIG. 2N

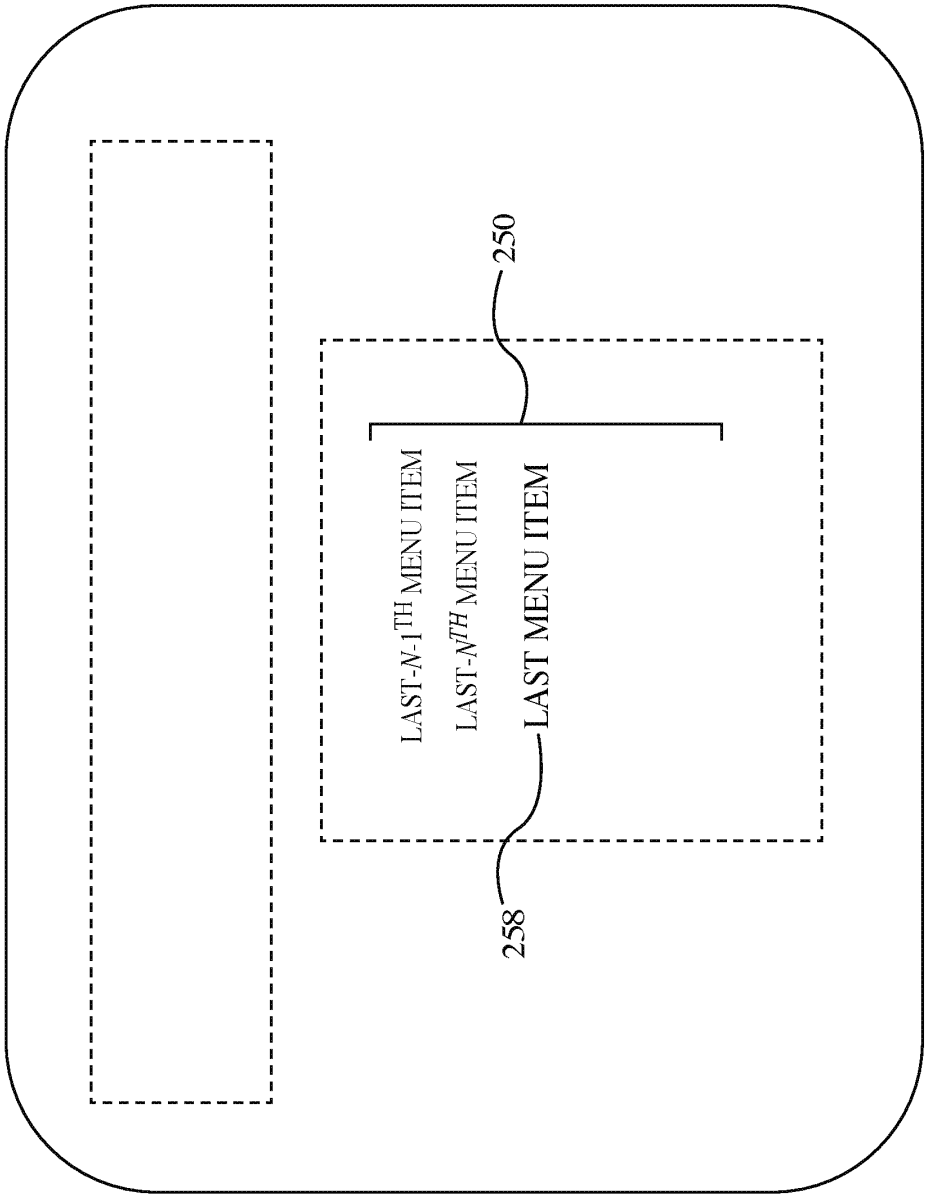

FIG. 2O

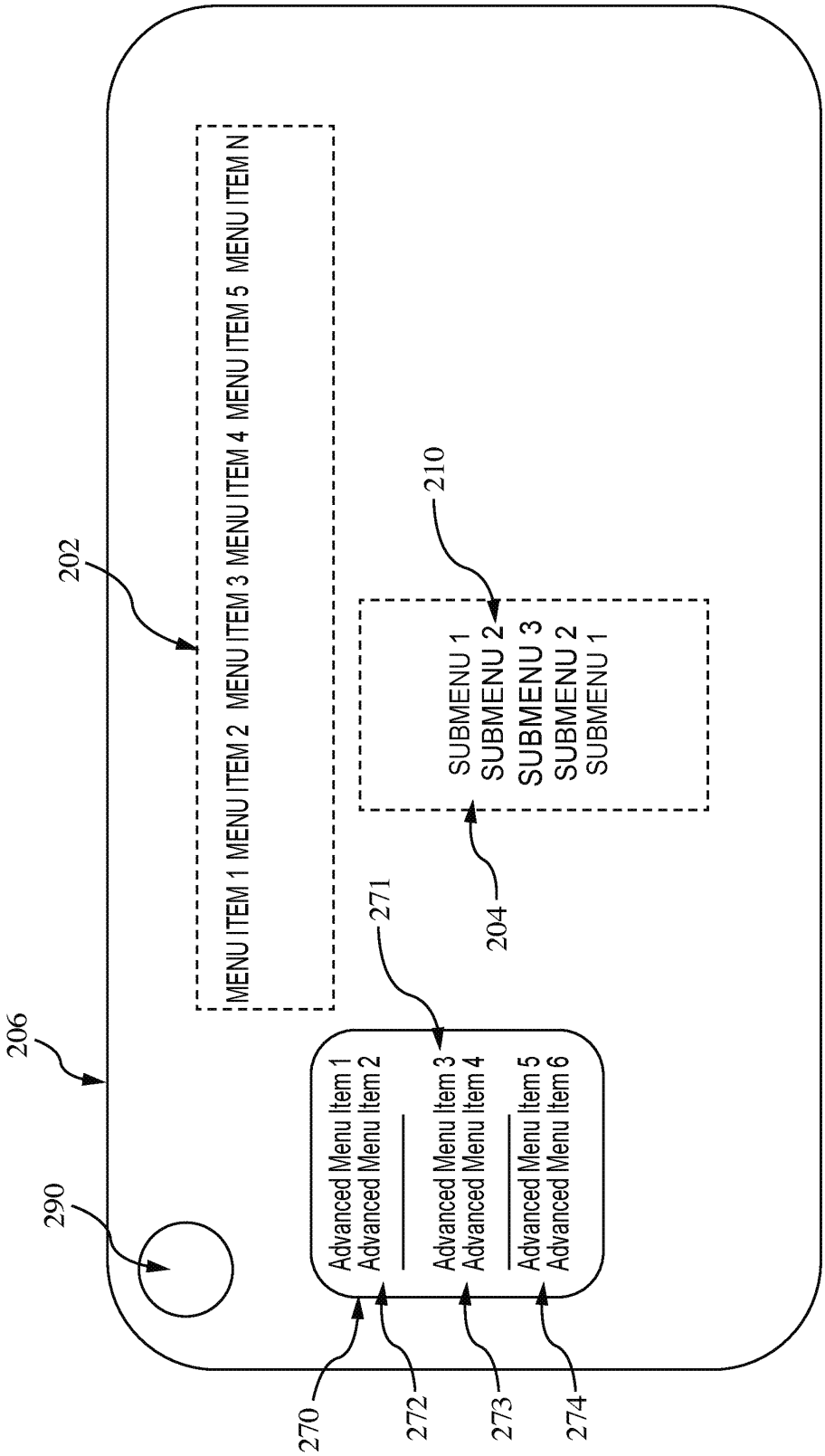
202
206
290
MENU ITEM 1 MENU ITEM 2 MENU ITEM 3 MENU ITEM 4 MENU ITEM 5 MENU ITEM N
210
SUBMENU 1
SUBMENU 2
SUBMENU 3
SUBMENU 2
SUBMENU 1
204
271
Advanced Menu Item 1
Advanced Menu Item 2
Advanced Menu Item 3
Advanced Menu Item 4
Advanced Menu Item 5
Advanced Menu Item 6
270
272
273
274

FIG. 2P

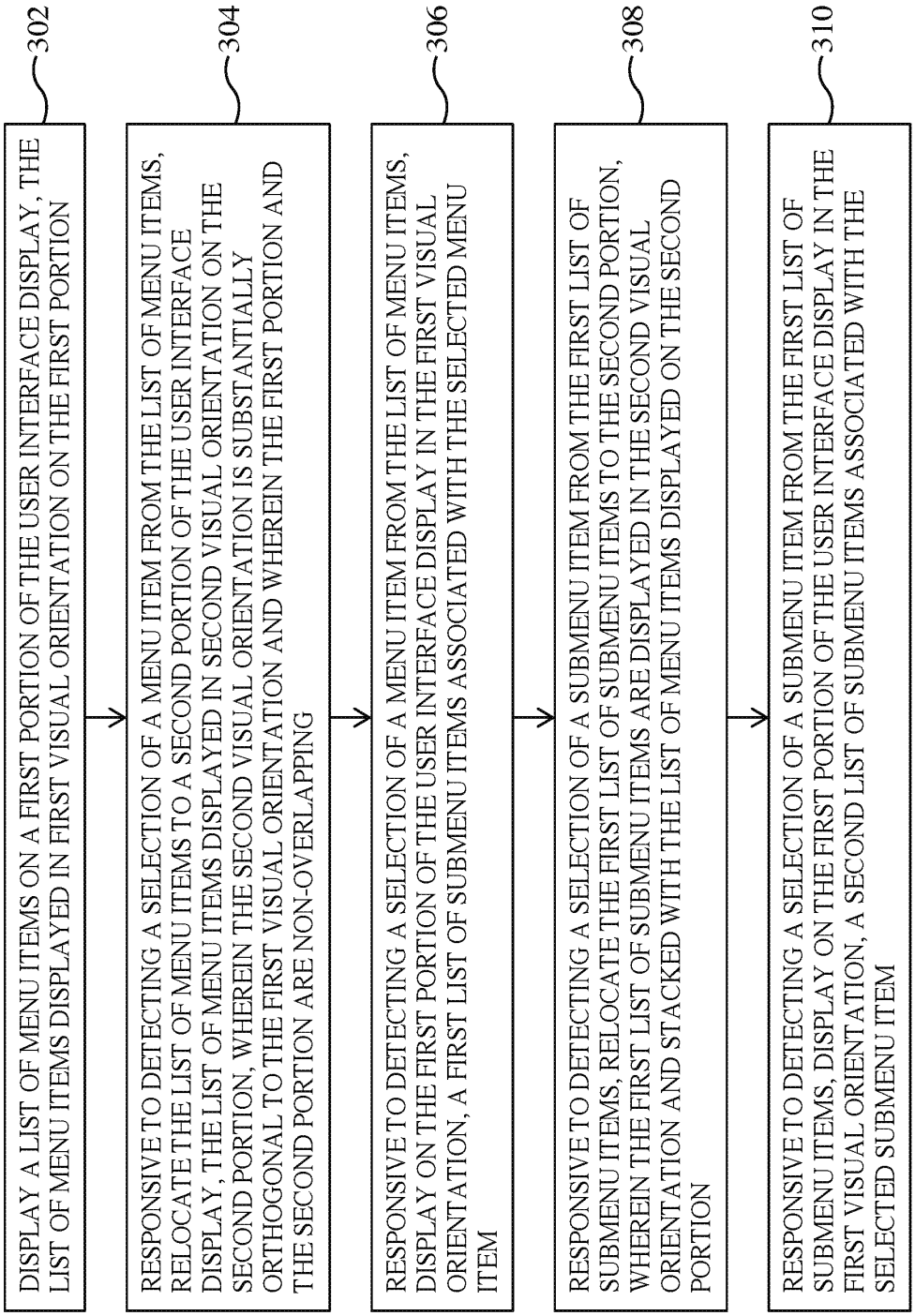
302
DISPLAY A LIST OF MENU ITEMS ON A FIRST PORTION OF THE USER INTERFACE DISPLAY, THE LIST OF MENU ITEMS DISPLAYED IN FIRST VISUAL ORIENTATION ON THE FIRST PORTION
304
RESPONSIVE TO DETECTING A SELECTION OF A MENU ITEM FROM THE LIST OF MENU ITEMS, RELOCATE THE LIST OF MENU ITEMS TO A SECOND PORTION OF THE USER INTERFACE DISPLAY, THE LIST OF MENU ITEMS DISPLAYED IN SECOND VISUAL ORIENTATION ON THE SECOND PORTION, WHEREIN THE SECOND VISUAL ORIENTATION IS SUBSTANTIALLY ORTHOGONAL TO THE FIRST VISUAL ORIENTATION AND WHEREIN THE FIRST PORTION AND THE SECOND PORTION ARE NON-OVERLAPPING
306
RESPONSIVE TO DETECTING A SELECTION OF A MENU ITEM FROM THE LIST OF MENU ITEMS, DISPLAY ON THE FIRST PORTION OF THE USER INTERFACE DISPLAY IN THE FIRST VISUAL ORIENTATION, A FIRST LIST OF SUBMENU ITEMS ASSOCIATED WITH THE SELECTED MENU ITEM
308
RESPONSIVE TO DETECTING A SELECTION OF A SUBMENU ITEM FROM THE FIRST LIST OF SUBMENU ITEMS, RELOCATE THE FIRST LIST OF SUBMENU ITEMS TO THE SECOND PORTION, WHEREIN THE FIRST LIST OF SUBMENU ITEMS ARE DISPLAYED IN THE SECOND VISUAL ORIENTATION AND STACKED WITH THE LIST OF MENU ITEMS DISPLAYED ON THE SECOND PORTION
310
RESPONSIVE TO DETECTING A SELECTION OF A SUBMENU ITEM FROM THE FIRST LIST OF SUBMENU ITEMS, DISPLAY ON THE FIRST PORTION OF THE USER INTERFACE DISPLAY IN THE FIRST VISUAL ORIENTATION, A SECOND LIST OF SUBMENU ITEMS ASSOCIATED WITH THE SELECTED SUBMENU ITEM

FIG. 3

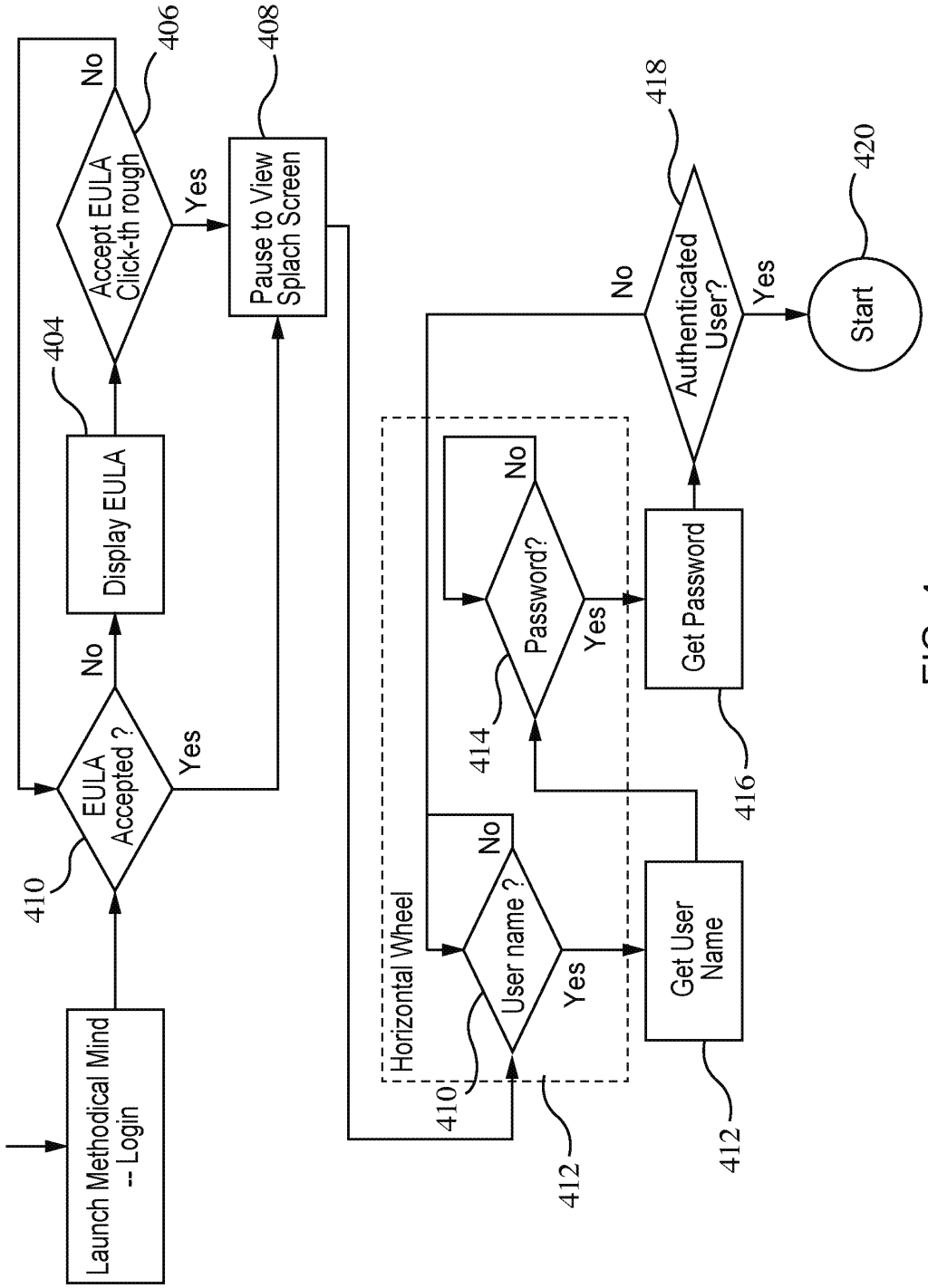
Launch Methodical Mind -- Login
410
EULA Accepted ?
No
Yes
Display EULA
404
Accept EULA Click-th rough
406
No
Yes
Pause to View Splach Screen
408
Horizontal Wheel
410
User name ?
No
Yes
412
Get User Name
412
Password?
414
No
Yes
Get Password
416
Authenticated User?
418
No
Yes
Start
420

FIG. 4

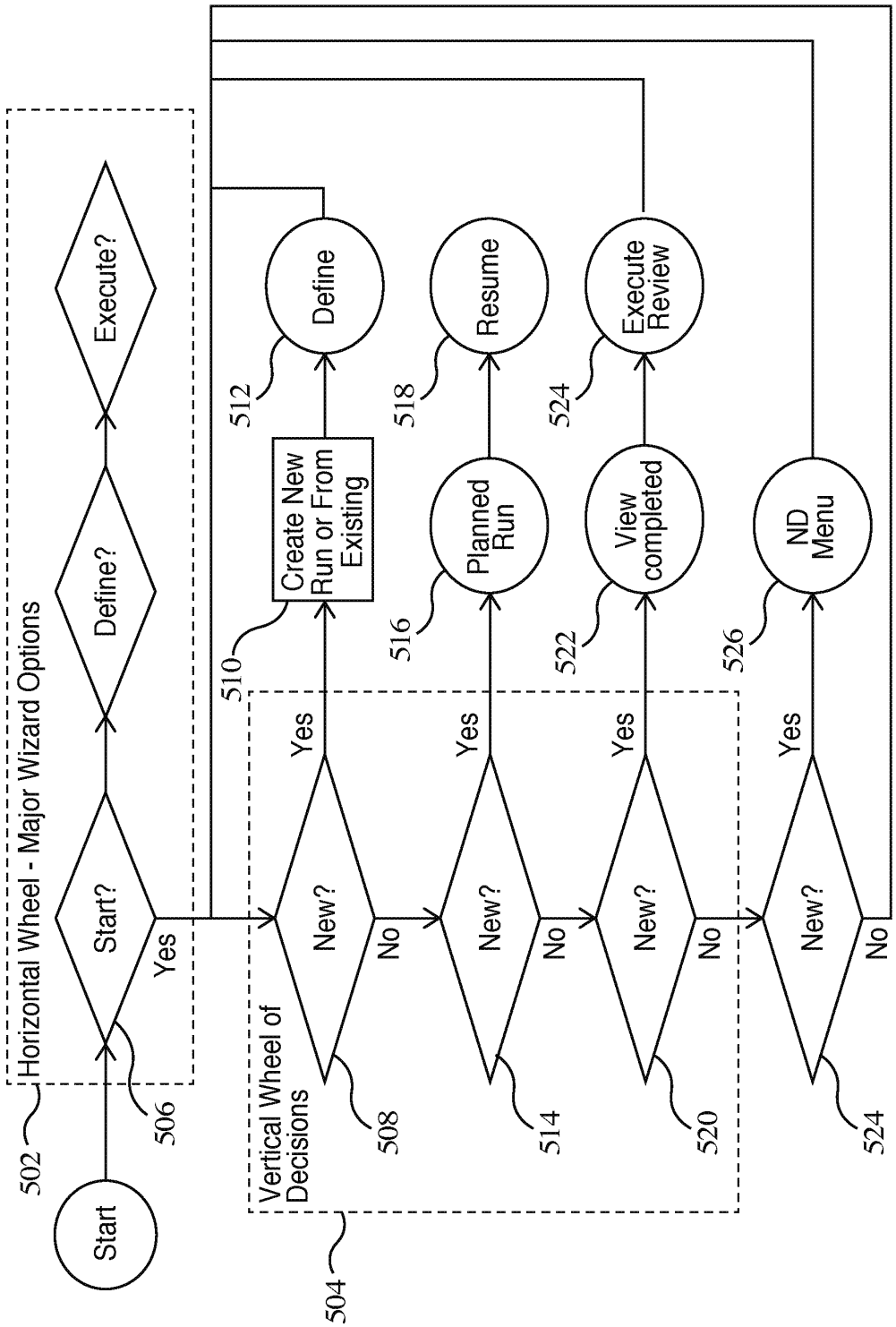
Horizontal Wheel - Major Wizard Options
502
Start
Start?
506
Yes
Define?
Execute?
Vertical Wheel of Decisions
504
New?
508
Yes
No
Create New Run or From Existing
510
Define
512
New?
514
Yes
No
Planned Run
516
Resume
518
New?
520
Yes
No
View completed
522
Execute Review
524
New?
524
Yes
No
ND Menu
526

FIG. 5

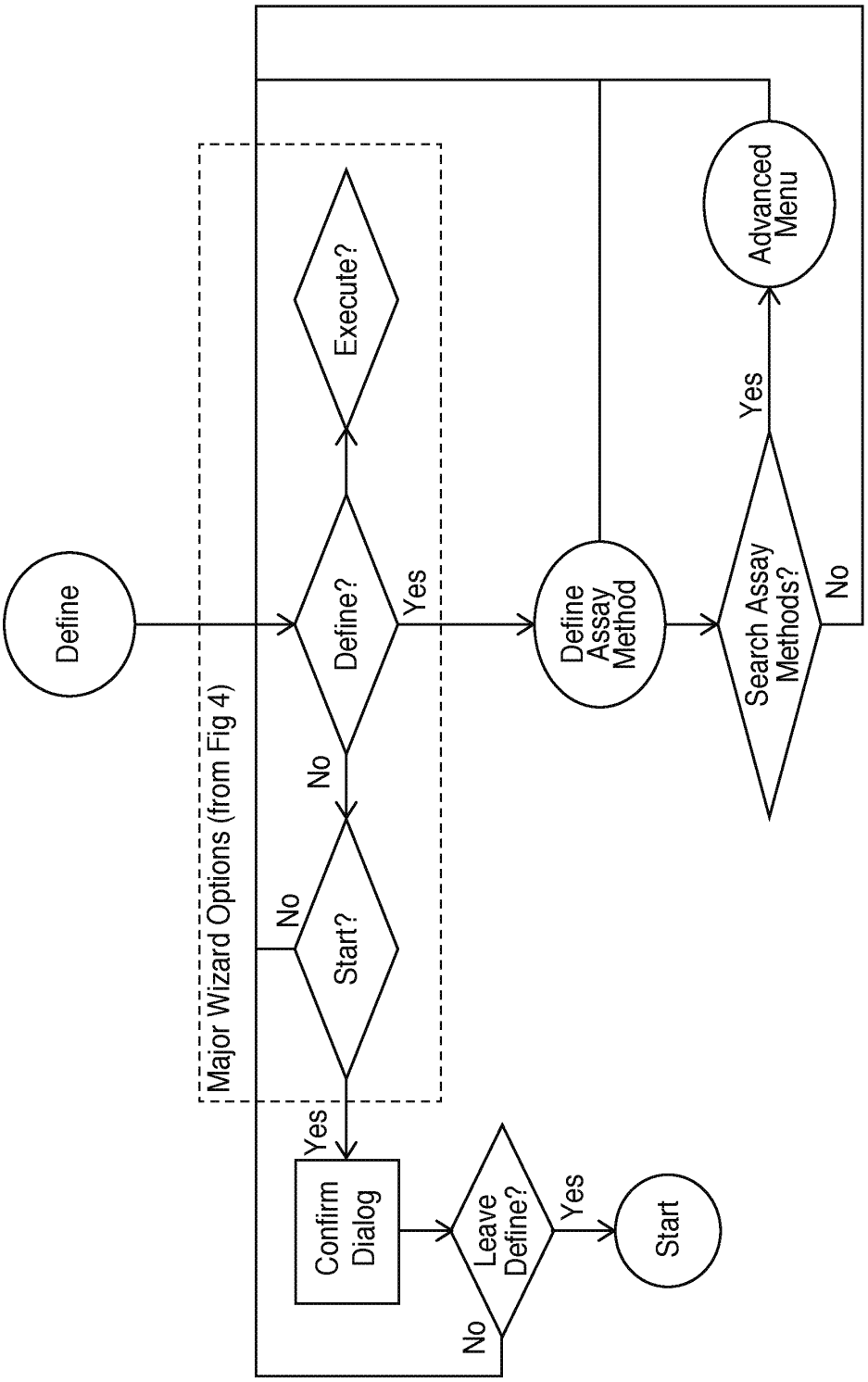
Define
Major Wizard Options (from Fig 4)
Execute?
Define?
Yes
No
Start?
No
Yes
Confirm Dialog
Leave Define?
Yes
No
Start
Define Assay Method
Search Assay Methods?
Yes
No
Advanced Menu

FIG. 6

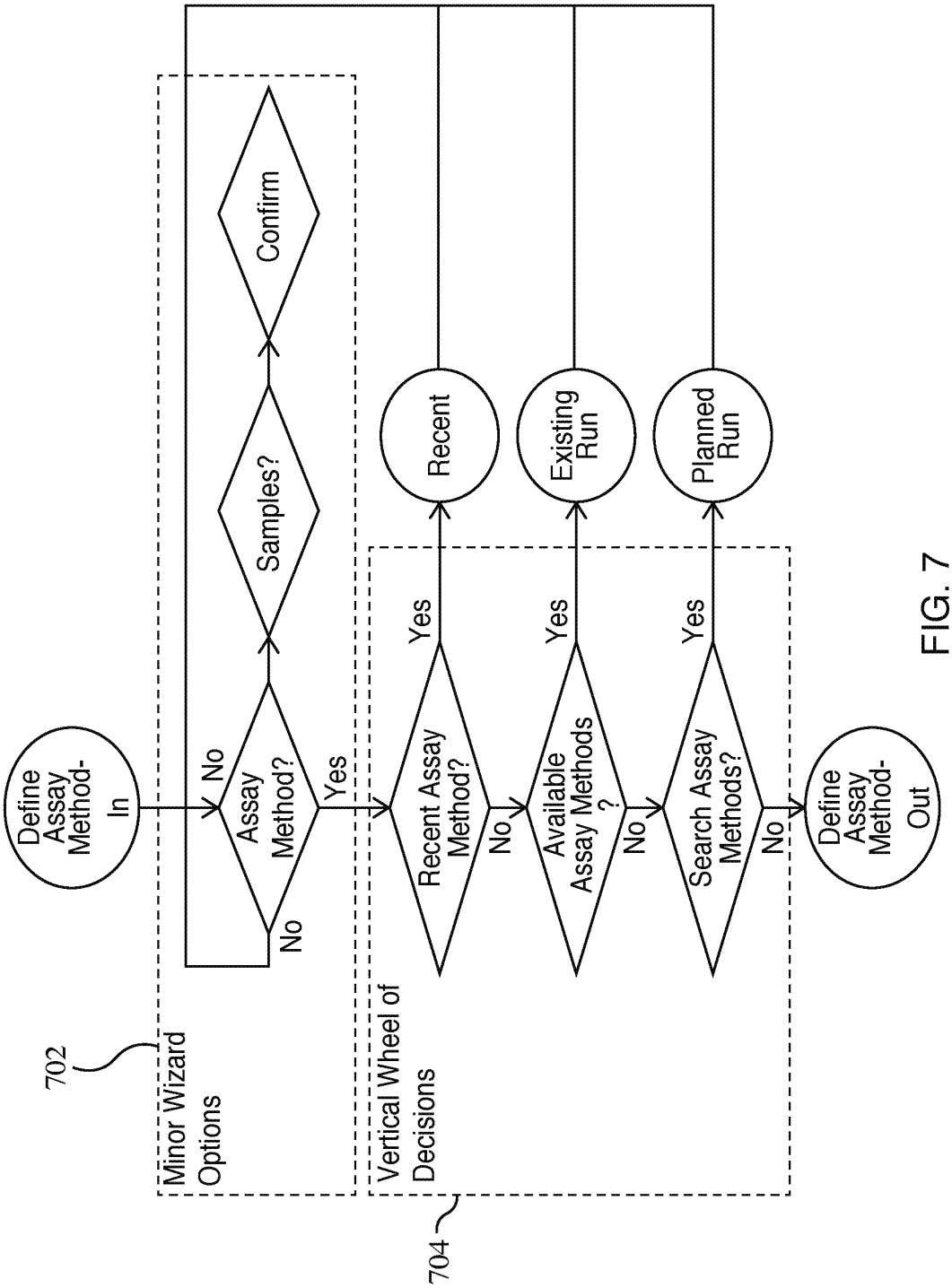
Define Assay Method-In
Assay Method?
No
Yes
No
Samples?
Confirm
Minor Wizard Options
702
Recent Assay Method?
Yes
No
Recent
Available Assay Methods ?
Yes
No
Existing Run
Search Assay Methods?
Yes
No
Planned Run
Vertical Wheel of Decisions
704
Define Assay Method-Out

FIG. 7

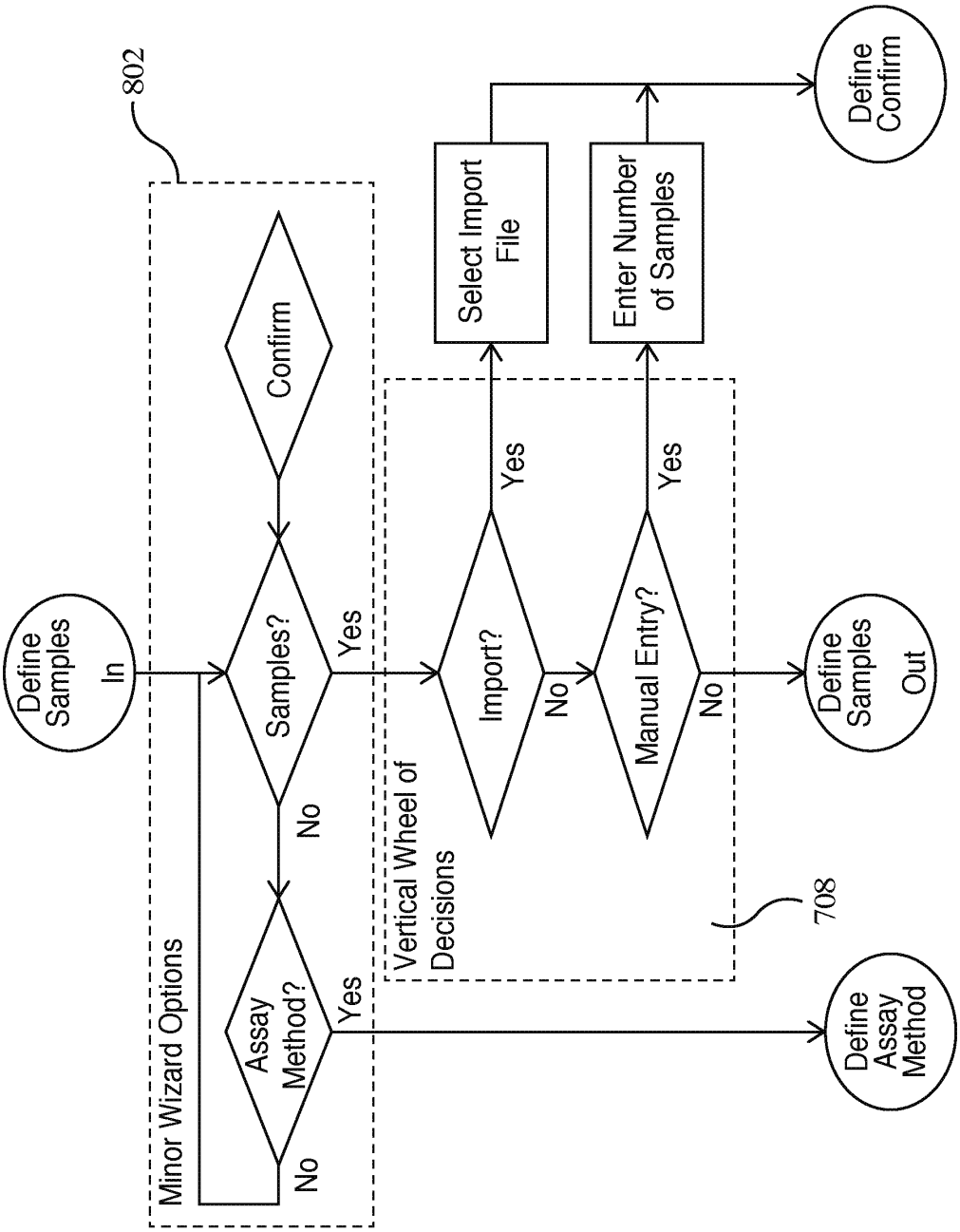
802
Define Samples In
Minor Wizard Options
Samples?
Yes
No
Confirm
Assay Method?
Yes
No
Vertical Wheel of Decisions
Import?
Yes
No
Select Import File
Manual Entry?
Yes
No
Enter Number of Samples
708
Define Samples Out
Define Assay Method
Define Confirm

FIG. 8

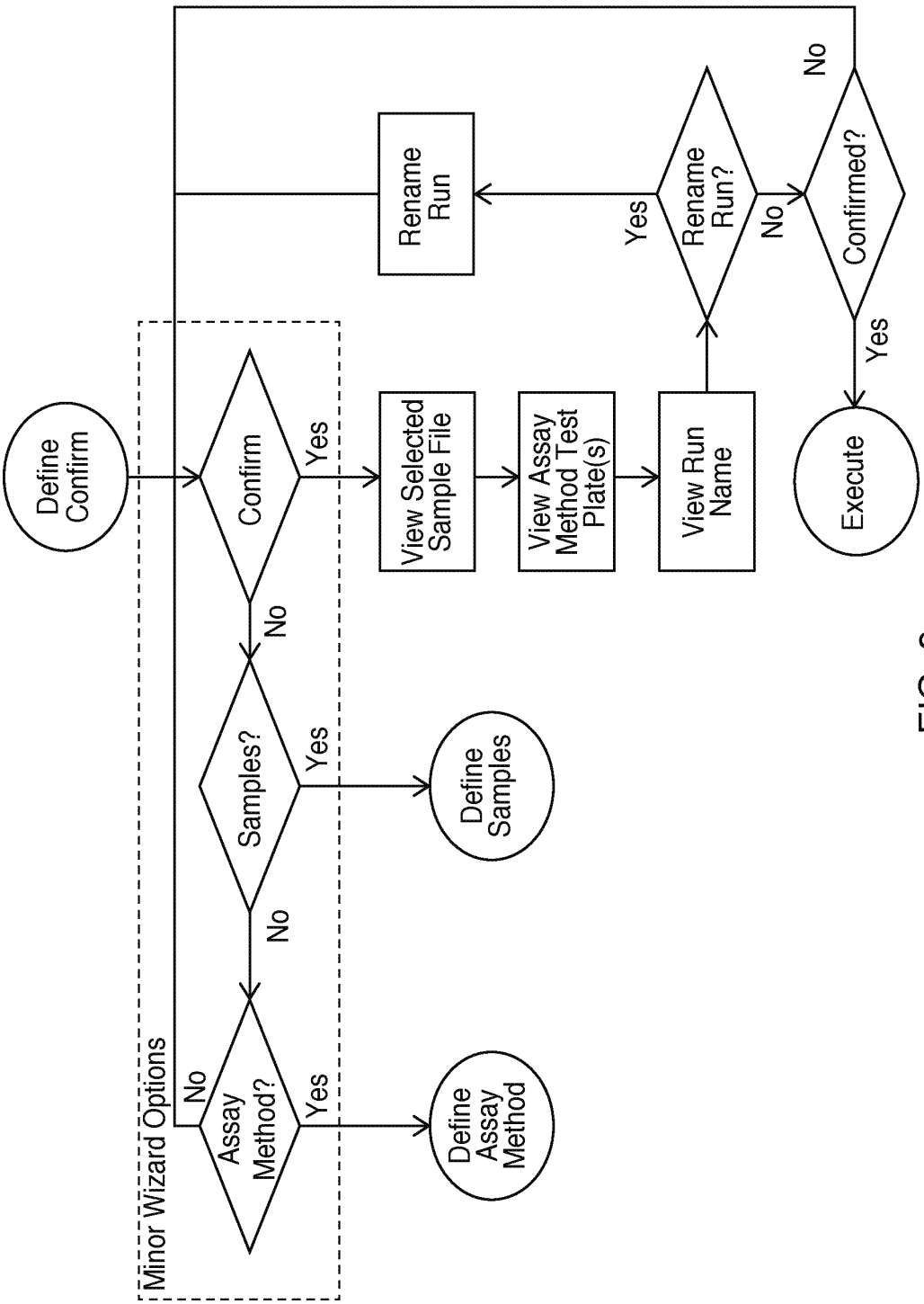
Define Confirm
Minor Wizard Options
Confirm
Yes
No
Samples?
Yes
No
Assay Method?
No
Yes
View Selected Sample File
View Assay Method Test Plate(s)
View Run Name
Rename Run?
Yes
No
Rename Run
Confirmed?
No
Yes
Execute
Define Samples
Define Assay Method

FIG. 9

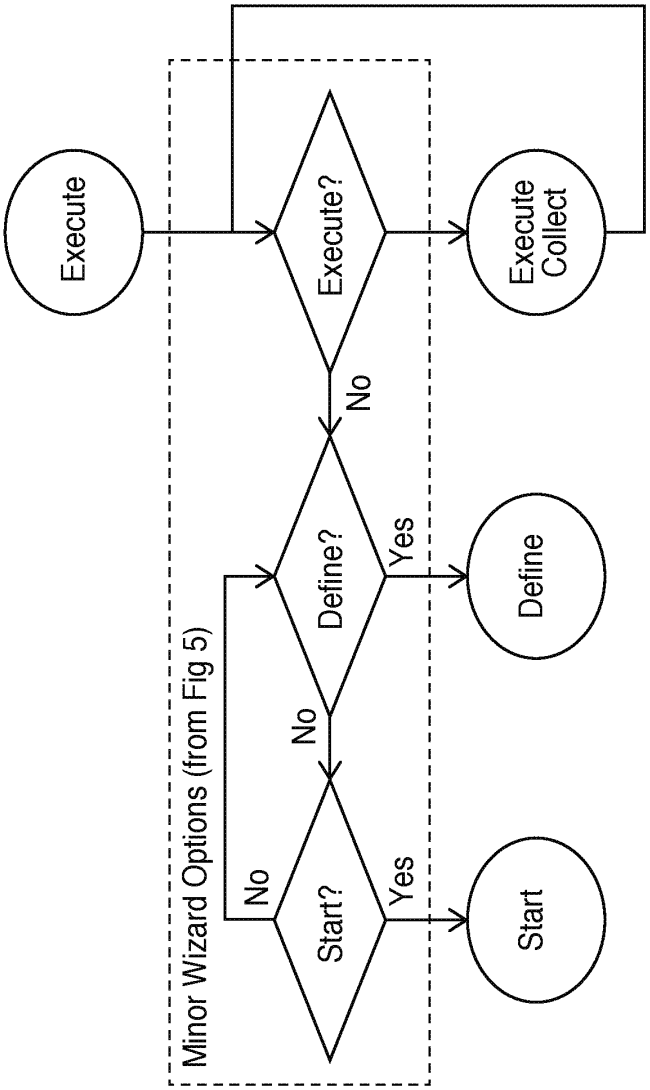
Execute
Minor Wizard Options (from Fig 5)
Start?
No
Yes
Start
Define?
No
Yes
Define
Execute?
No
Execute
Collect

FIG. 10

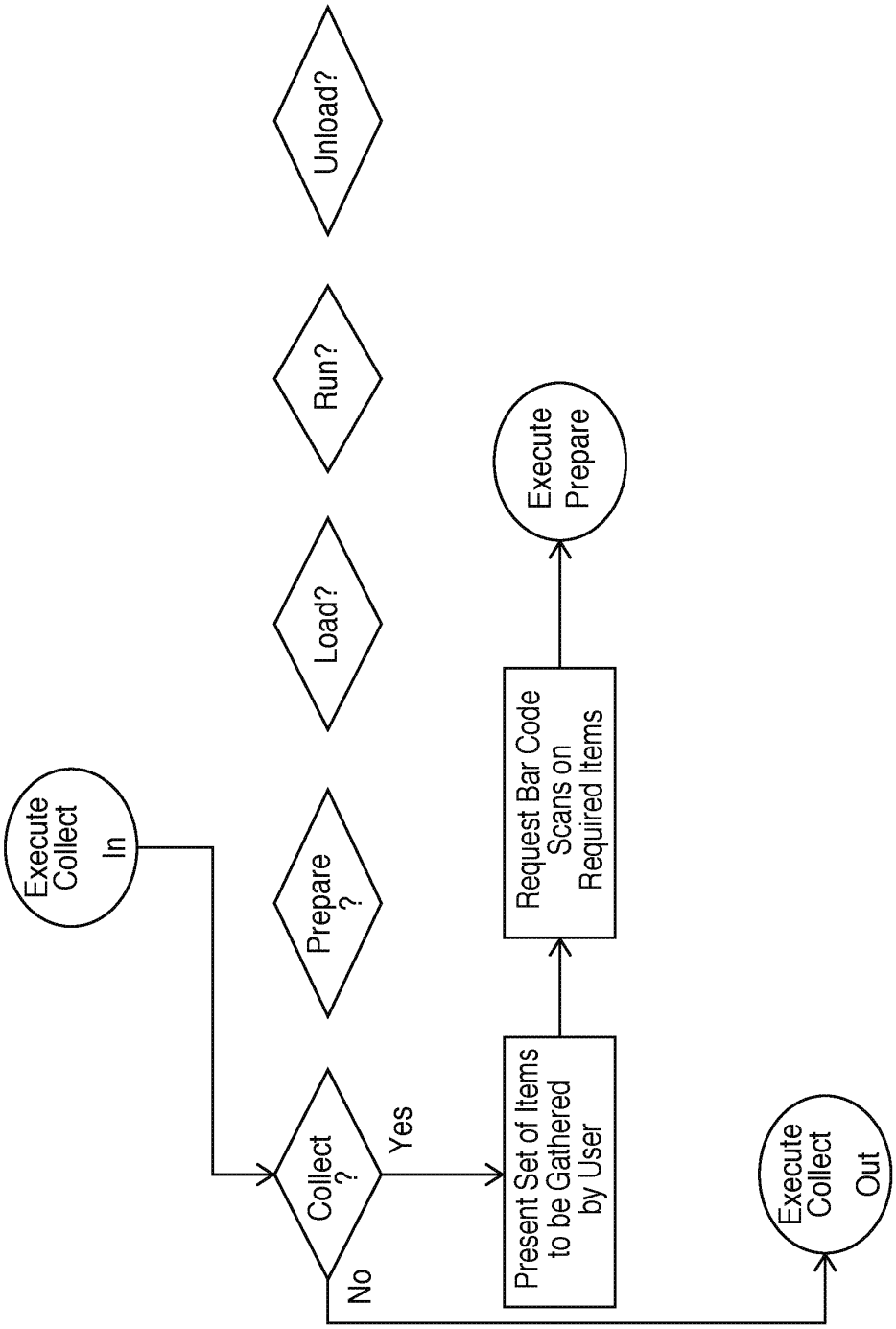
Execute Collect In
Collect ?
No
Yes
Prepare ?
Load?
Run?
Unload?
Present Set of Items to be Gathered by User
Request Bar Code Scans on Required Items
Execute Prepare
Execute Collect Out

FIG. 11

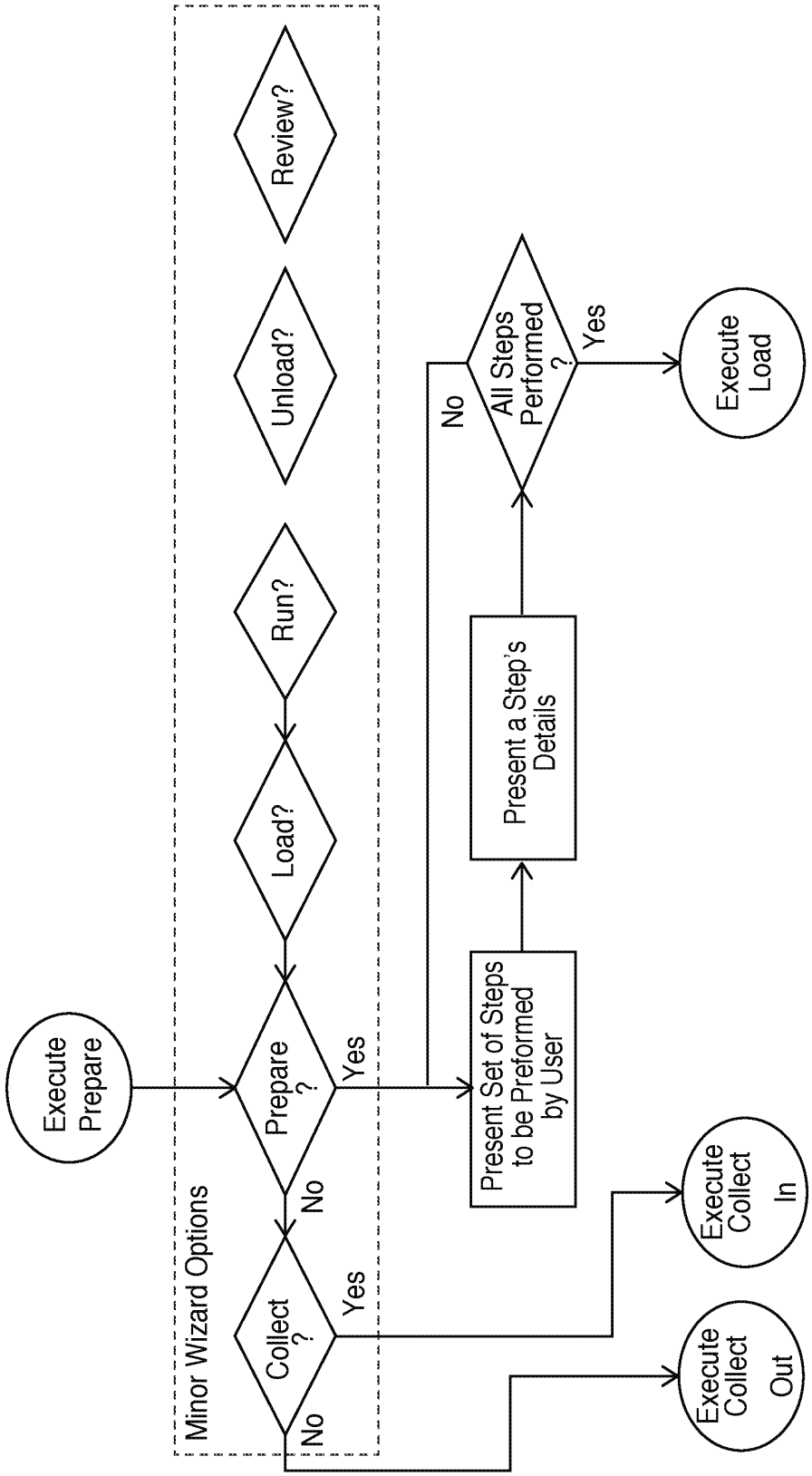
Execute Prepare
Minor Wizard Options
Prepare ?
Yes
No
Collect ?
Yes
No
Load?
Run?
Unload?
Review?
Present Set of Steps to be Preformed by User
Present a Step's Details
All Steps Performed ?
No
Yes
Execute Load
Execute Collect In
Execute Collect Out

FIG. 12

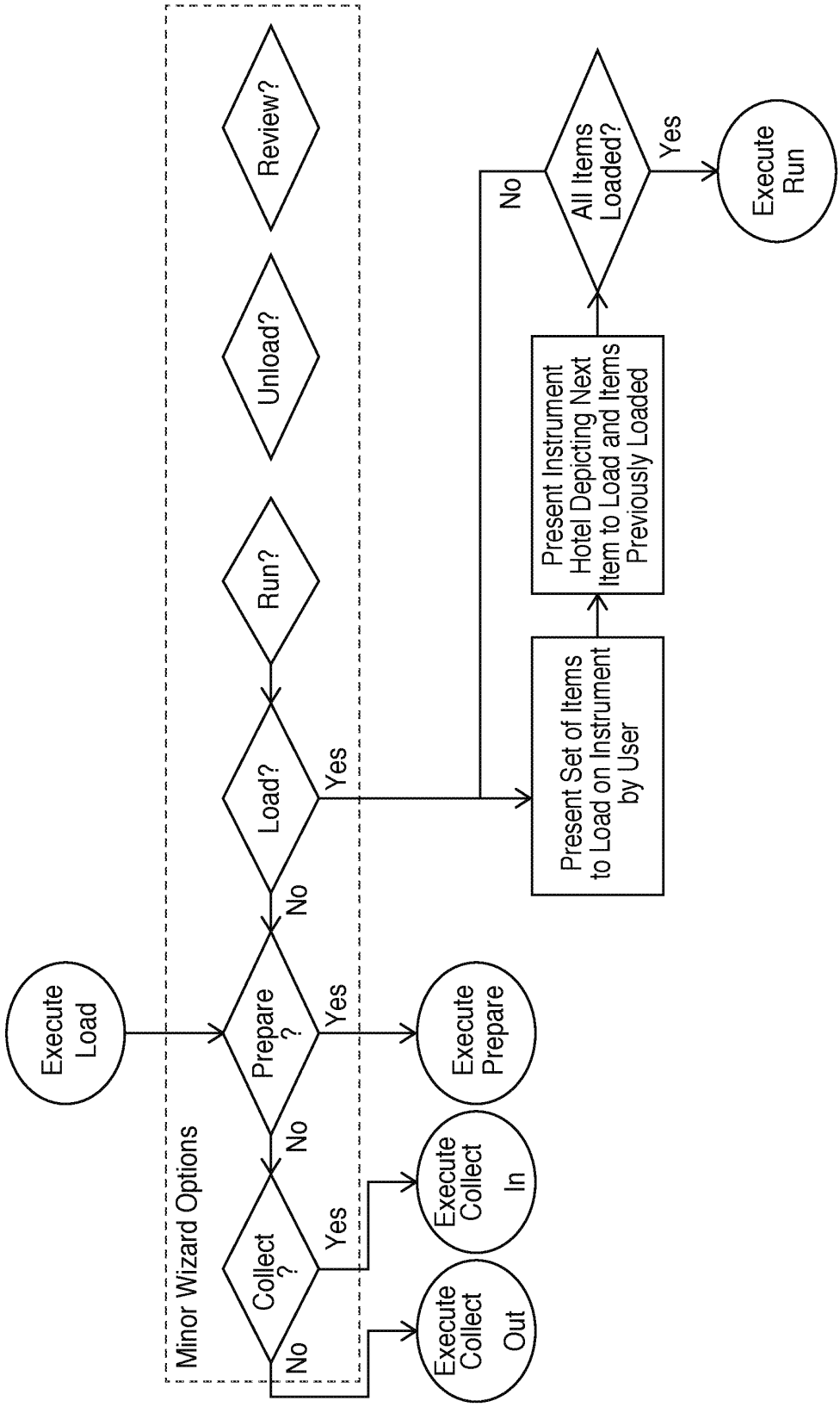
Execute Load
Minor Wizard Options
Collect ?
Yes
No
Execute Collect Out
Execute Collect In
Prepare ?
Yes
No
Execute Prepare
Load?
Yes
No
Run?
Unload?
Review?
Present Set of Items to Load on Instrument by User
Present Instrument Hotel Depicting Next Item to Load and Items Previously Loaded
All Items Loaded?
No
Yes
Execute Run

FIG. 13

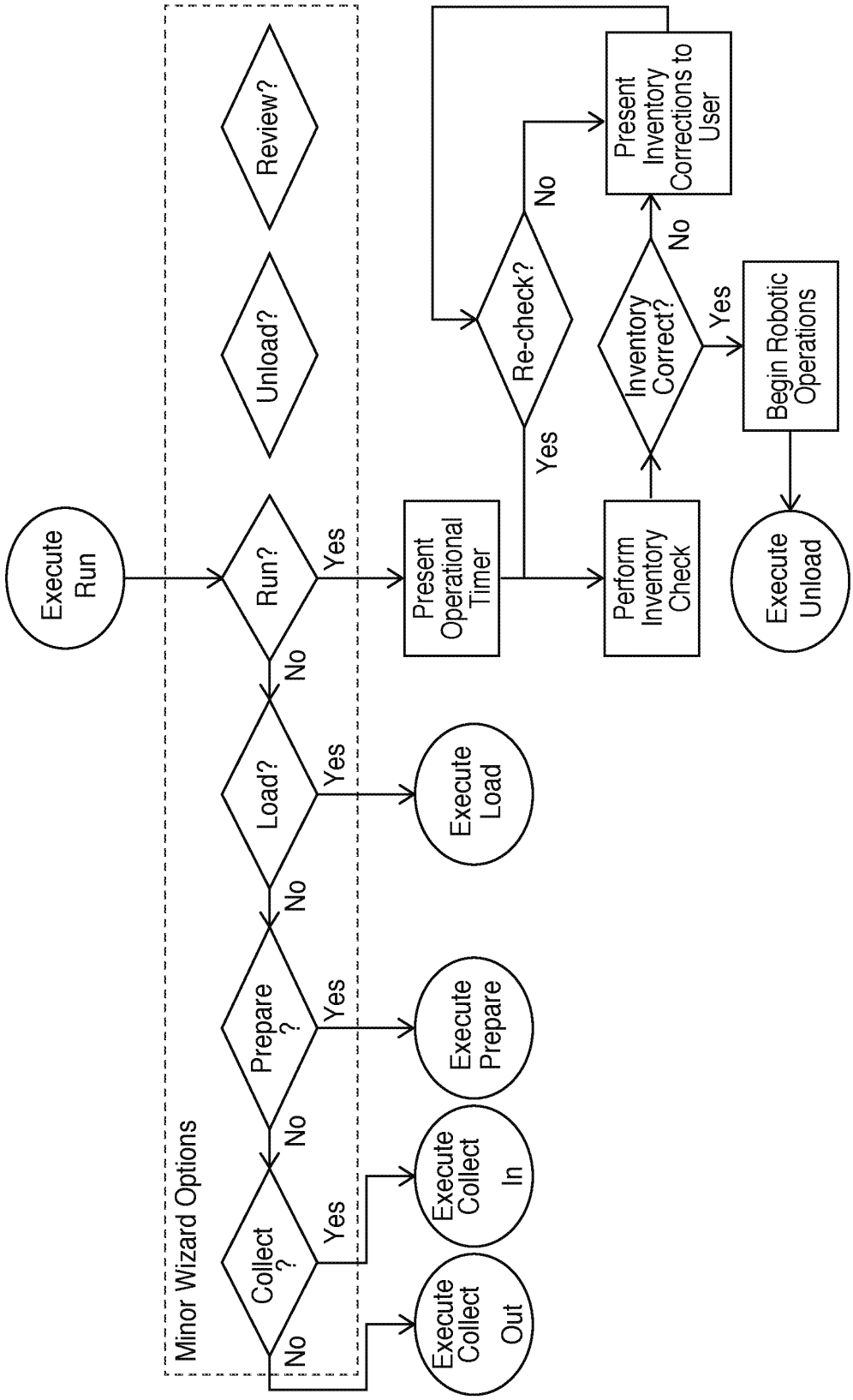
Execute Run
Minor Wizard Options
Review?
Unload?
Run?
Yes
No
Load?
Yes
No
Prepare ?
Yes
No
Collect ?
Yes
No
Execute Load
Execute Prepare
Execute Collect In
Execute Collect Out
Present Operational Timer
Re-check?
Yes
No
Present Inventory Corrections to User
Perform Inventory Check
Inventory Correct?
No
Yes
Begin Robotic Operations
Execute Unload

FIG. 14

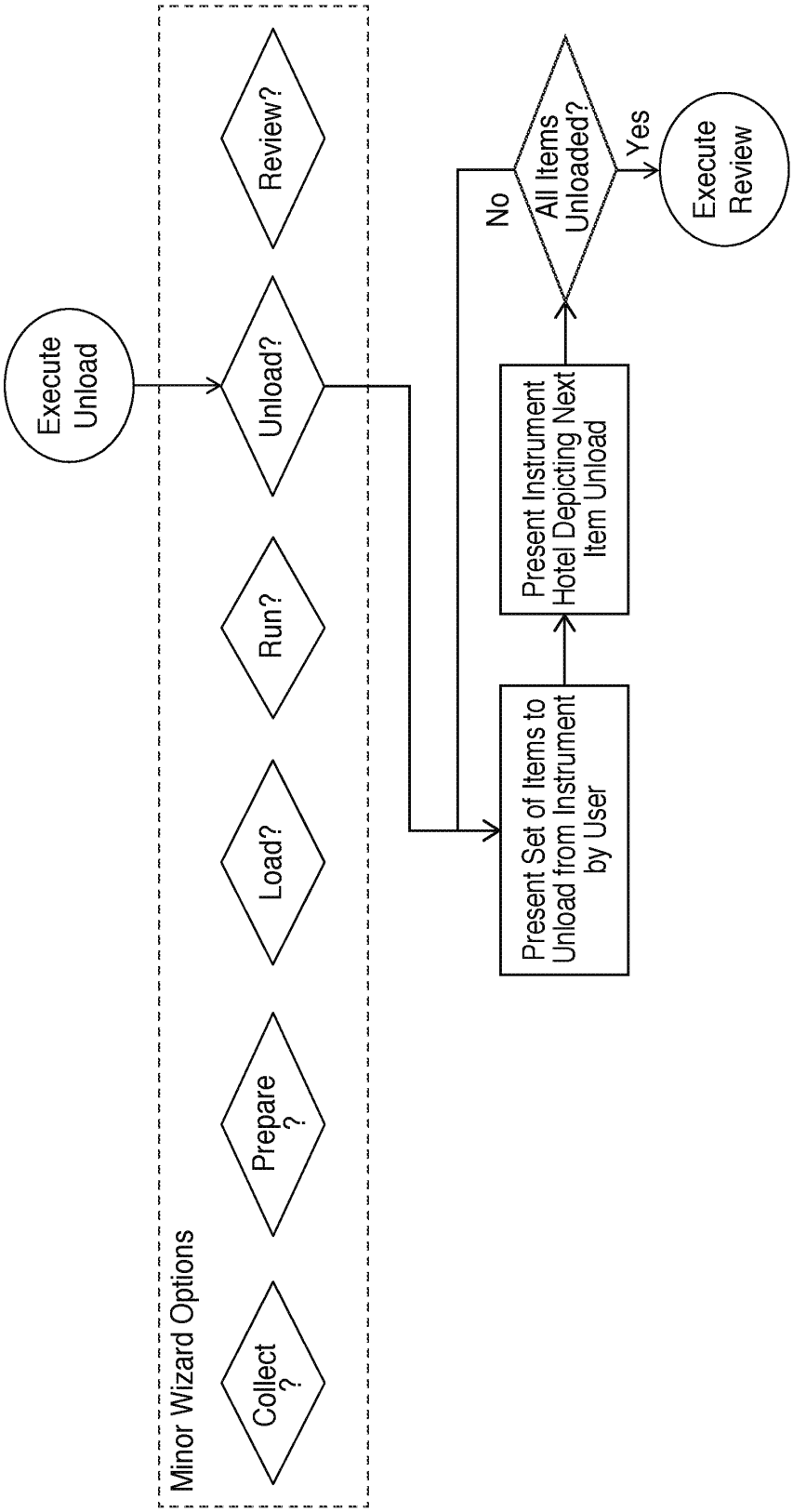
Execute Unload
Minor Wizard Options
Collect ?
Prepare ?
Load?
Run?
Unload?
Review?
Present Set of Items to Unload from Instrument by User
Present Instrument Hotel Depicting Next Item Unload
All Items Unloaded?
No
Yes
Execute Review

FIG. 15

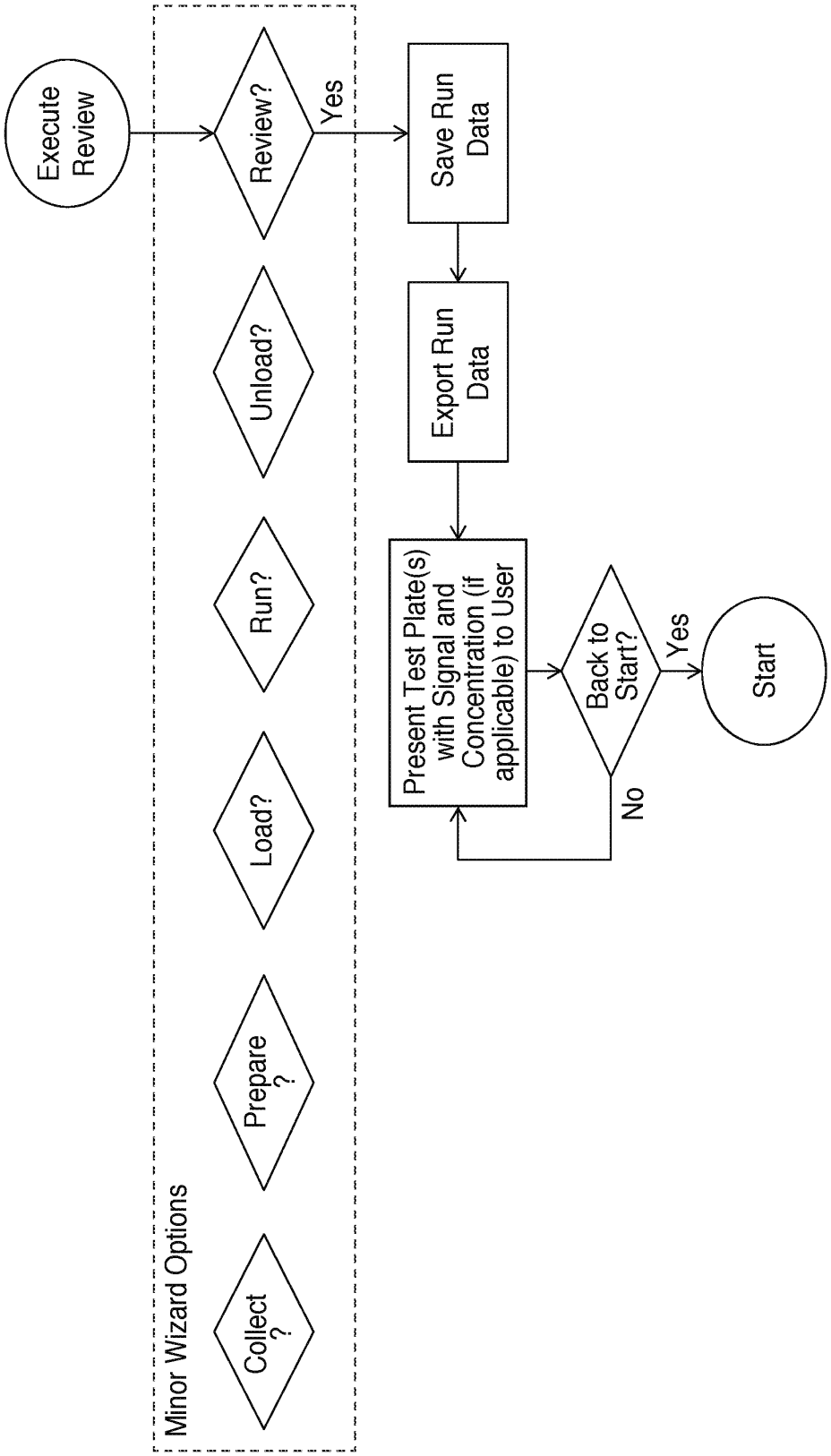
Execute Review
Minor Wizard Options
Review?
Yes
Unload?
Run?
Load?
Prepare ?
Collect ?
Save Run Data
Export Run Data
Present Test Plate(s) with Signal and Concentration (if applicable) to User
Back to Start?
Yes
No
Start

FIG. 16

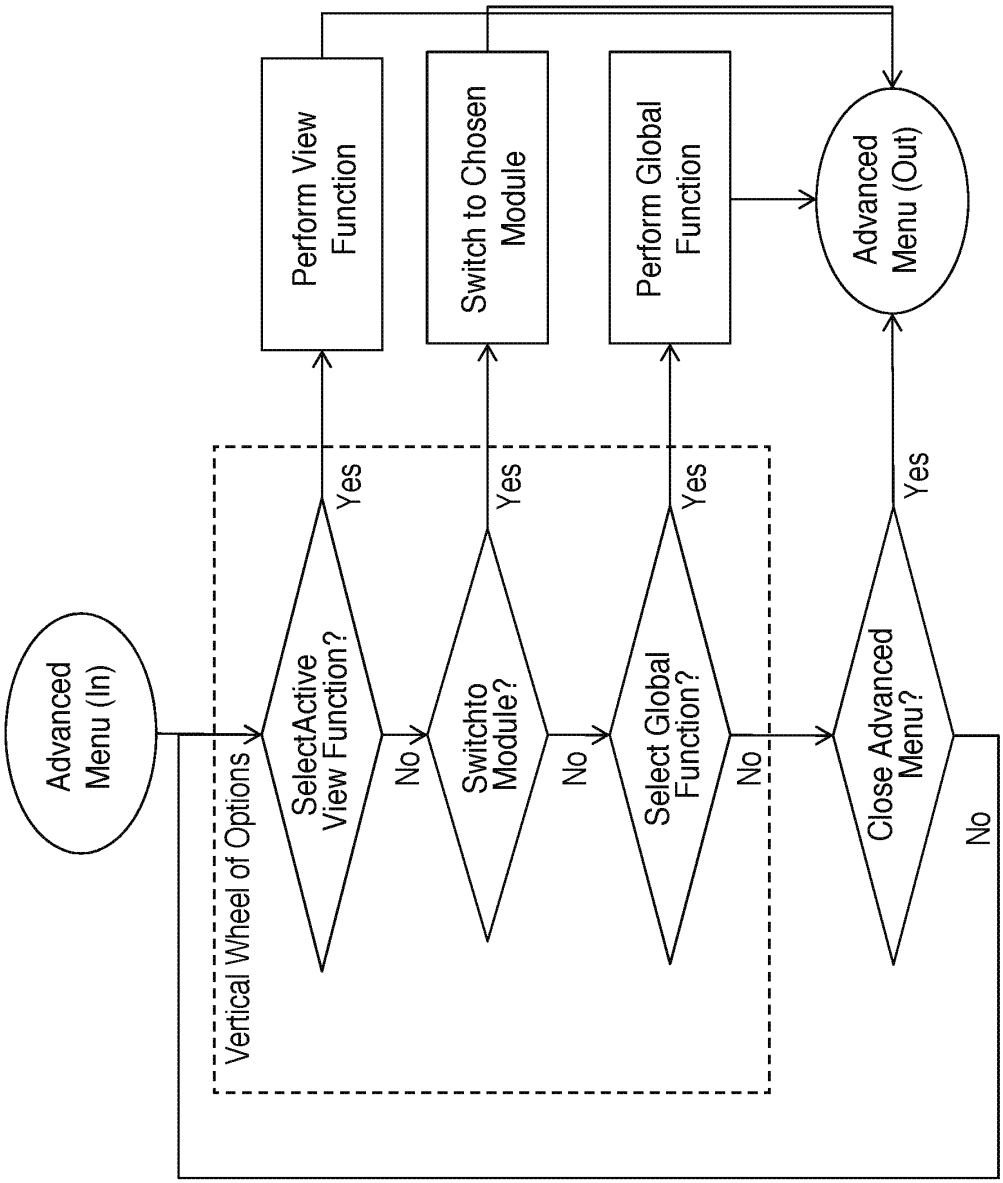
Advanced Menu (In)
Vertical Wheel of Options
SelectActive View Function?
Yes
No
Switchto Module?
Yes
No
Select Global Function?
Yes
No
Close Advanced Menu?
Yes
No
Perform View Function
Switch to Chosen Module
Perform Global Function
Advanced Menu (Out)

FIG. 17

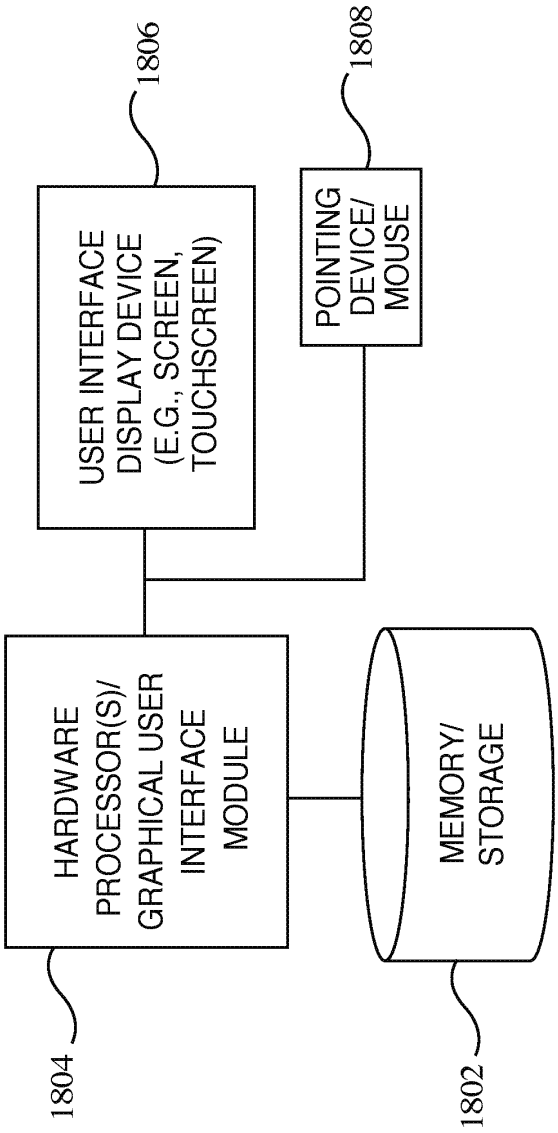
1804
HARDWARE PROCESSOR(S)/ GRAPHICAL USER INTERFACE MODULE
1806
USER INTERFACE DISPLAY DEVICE (E.G., SCREEN, TOUCHSCREEN)
1808
POINTING DEVICE/ MOUSE
1802
MEMORY/ STORAGE

FIG. 18

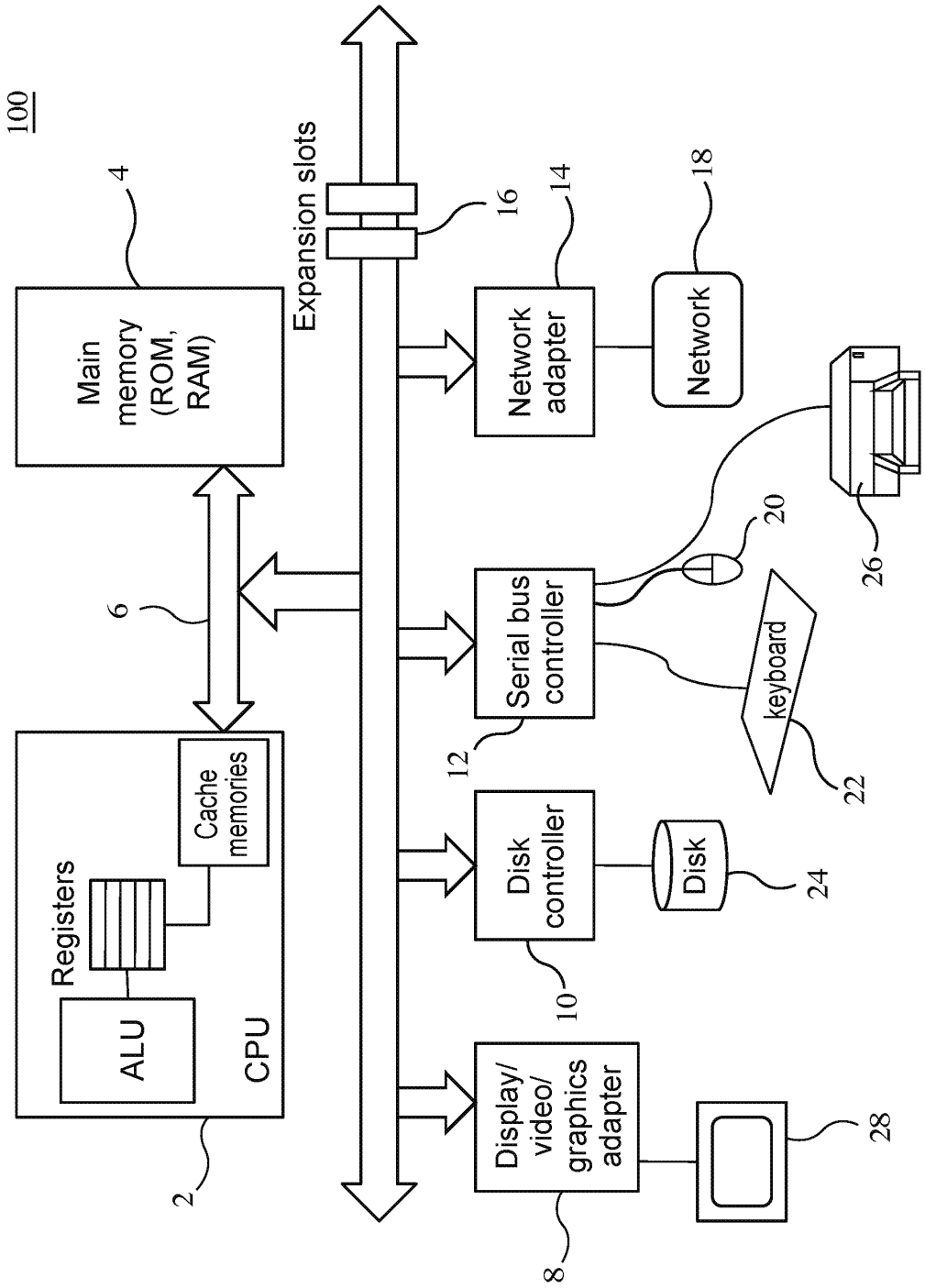
100
Main memory (ROM, RAM)
4
Expansion slots
16
Network adapter
14
Network
18
6
Serial bus controller
12
20
keyboard
22
26
Registers
Cache memories
ALU
CPU
2
Disk controller
10
Disk
24
Display/ video/ graphics adapter
8
28

FIG. 19

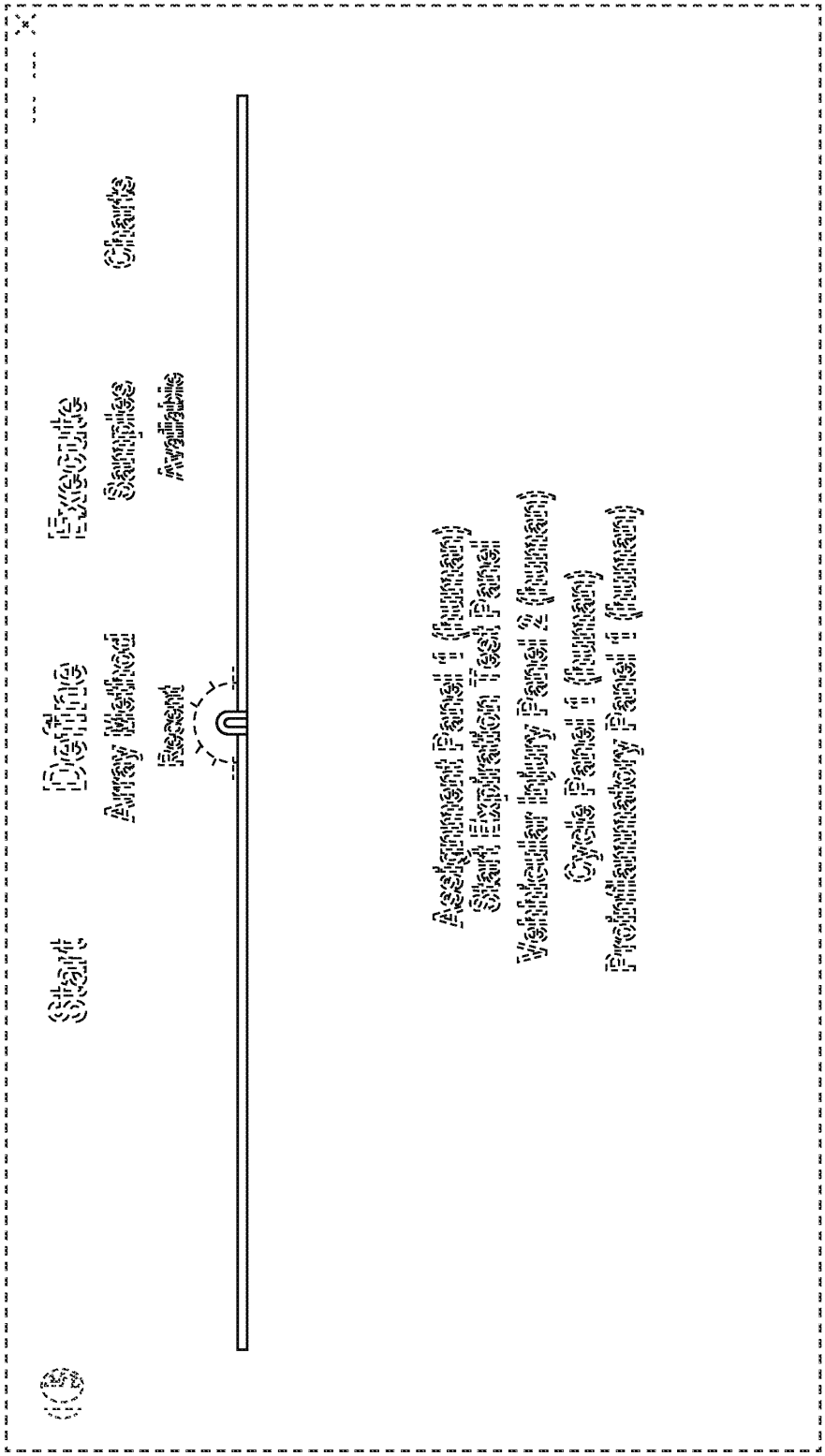

FIG. 20

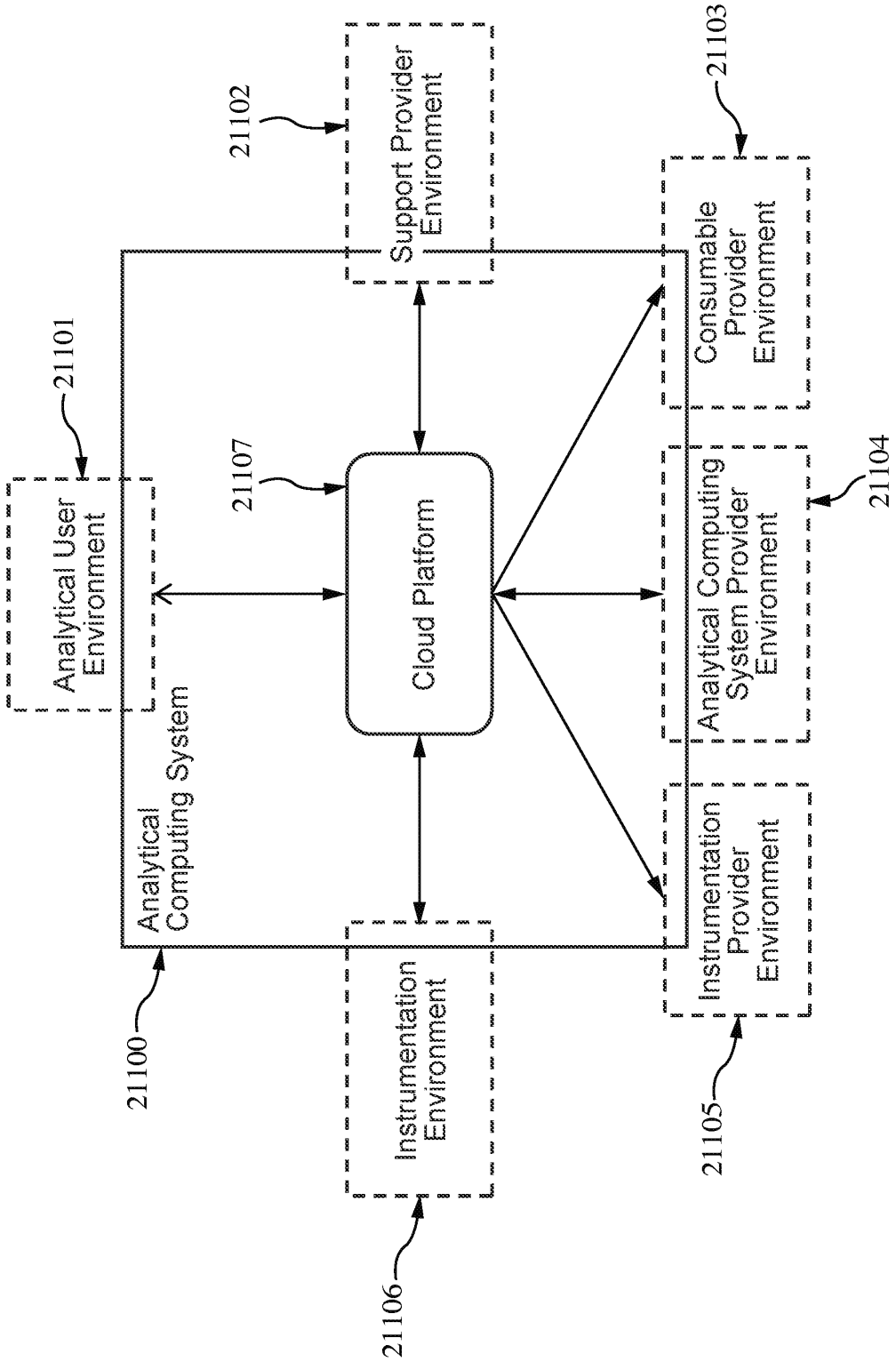
Analytical User Environment
21101
Analytical Computing System
21100
Support Provider Environment
21102
Cloud Platform
21107
Instrumentation Environment
21106
Consumable Provider Environment
21103
Analytical Computing System Provider Environment
21104
Instrumentation Provider Environment
21105

FIG. 21

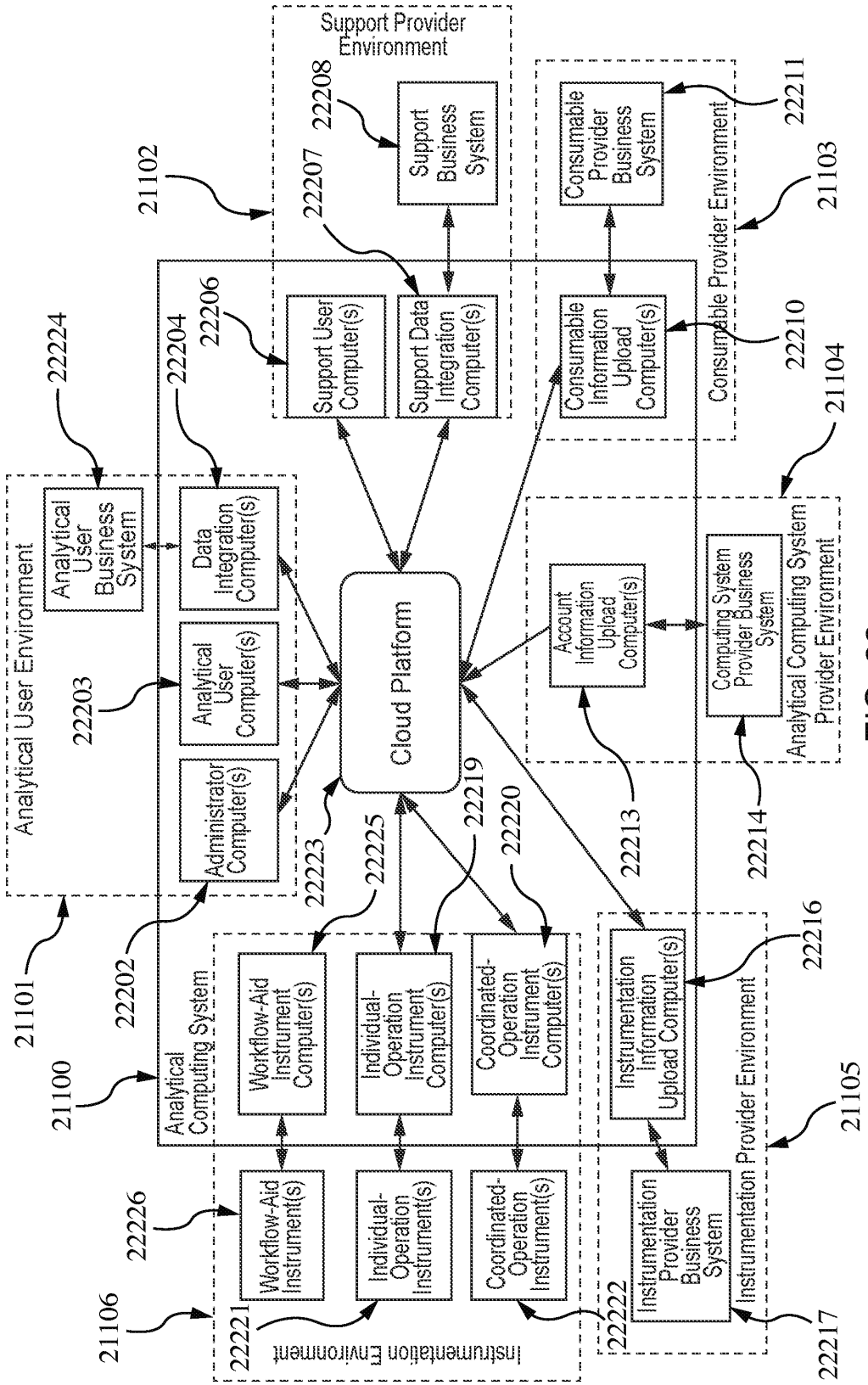
Support Provider Environment
Support Business System
Consumable Provider Business System
Consumable Provider Environment
Support User Computer(s)
Support Data Integration Computer(s)
Consumable Information Upload Computer(s)
Analytical User Environment
Analytical User Business System
Data Integration Computer(s)
Analytical User Computer(s)
Administrator Computer(s)
Cloud Platform
Account Information Upload Computer(s)
Computing System Provider Business System
Analytical Computing System Provider Environment
Analytical Computing System
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrumentation Information Upload Computer(s)
Instrumentation Provider Environment
Workflow-Aid Instrument(s)
Individual-Operation Instrument(s)
Coordinated-Operation Instrument(s)
Instrumentation Provider Business System
Instrumentation Environment
21100
21101
21102
21103
21104
21105
21106
22202
22203
22204
22206
22207
22208
22210
22211
22213
22214
22216
22217
22219
22220
22221
22222
22223
22224
22225
22226

FIG. 22

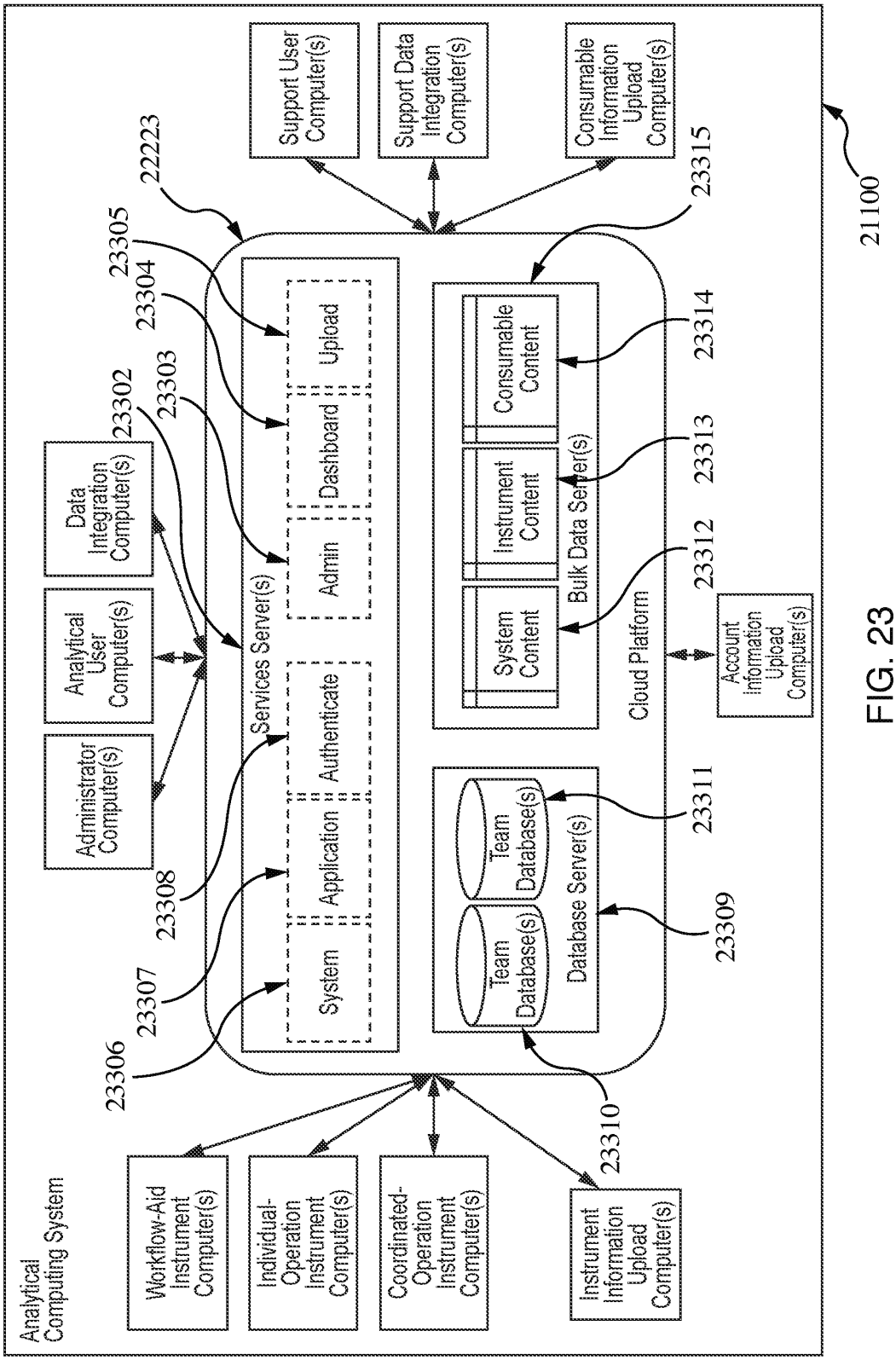
Analytical Computing System
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Support User Computer(s)
Support Data Integration Computer(s)
Consumable Information Upload Computer(s)
Account Information Upload Computer(s)
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Cloud Platform
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Database Server(s)
Team Database(s)
Team Database(s)
21100
22223
23302
23303
23304
23305
23306
23307
23308
23309
23310
23311
23312
23313
23314
23315

FIG. 23

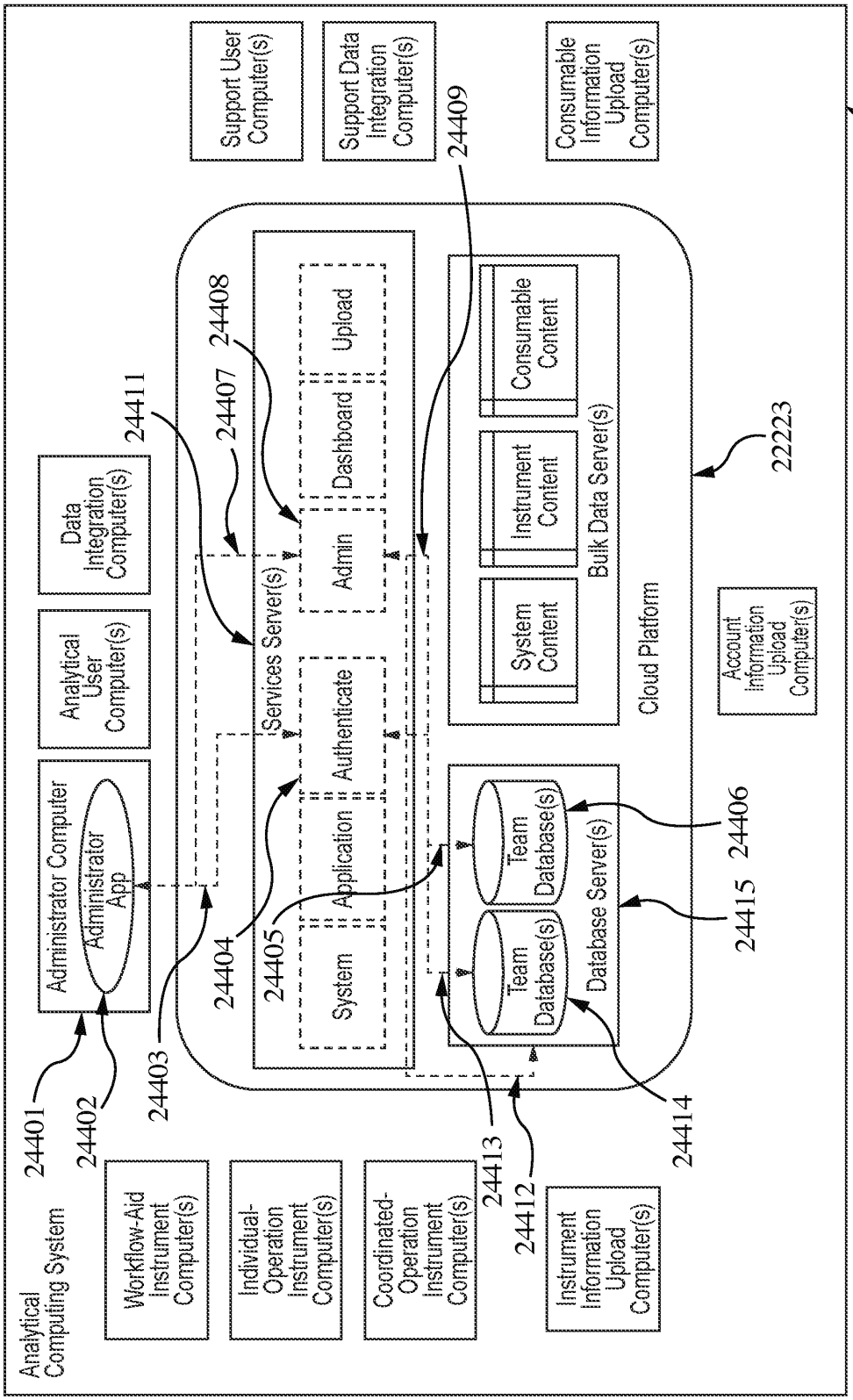
Analytical Computing System
Administrator Computer
Administrator App
Analytical User Computer(s)
Data Integration Computer(s)
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Support User Computer(s)
Support Data Integration Computer(s)
Consumable Information Upload Computer(s)
Account Information Upload Computer(s)
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Database Server(s)
Team Database(s)
Team Database(s)
24401
24402
24403
24404
24405
24406
24407
24408
24409
24411
24412
24413
24414
24415
22223
21100

FIG. 24

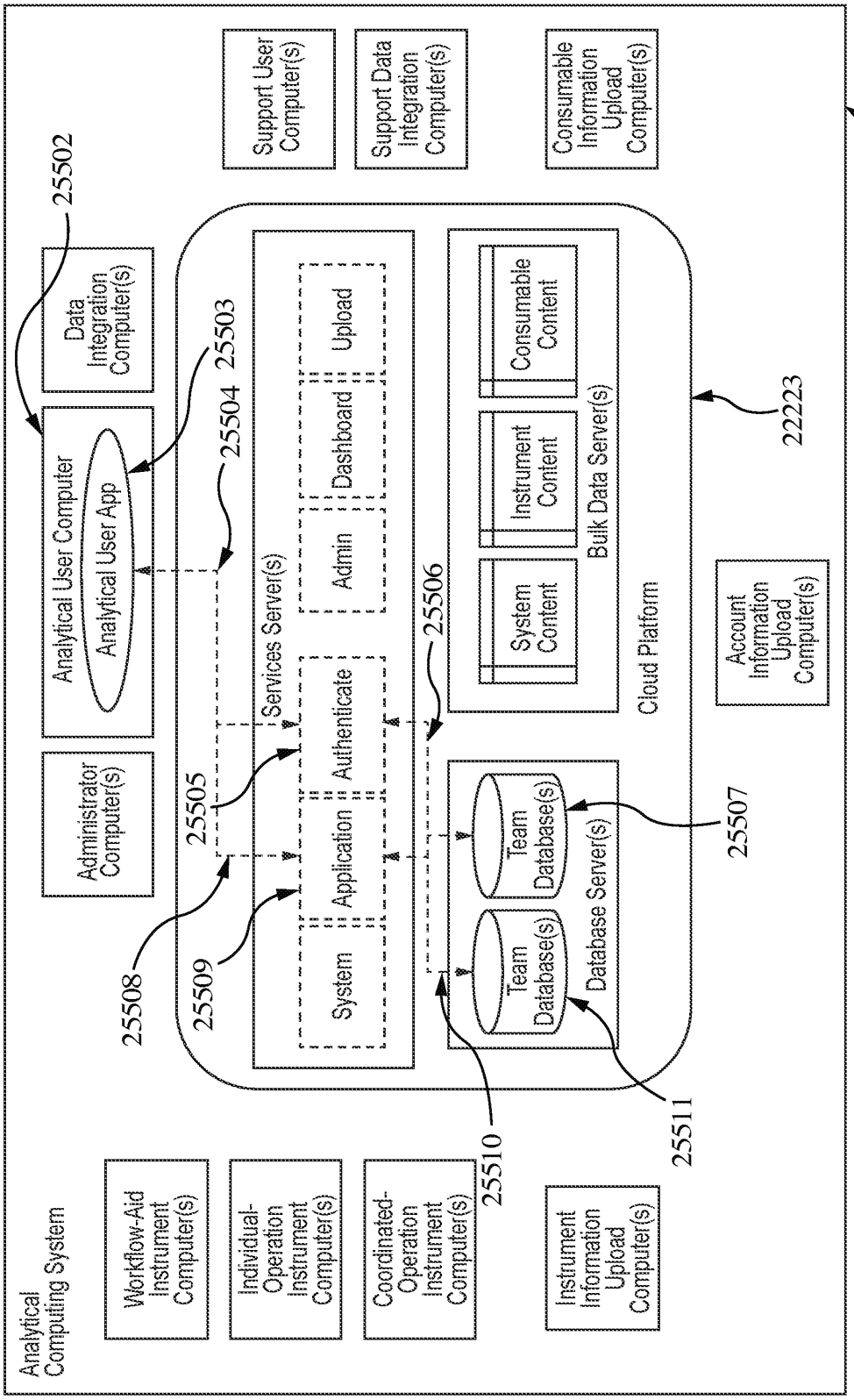
Analytical Computing System
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Administrator Computer(s)
Analytical User Computer
Analytical User App
Data Integration Computer(s)
Support User Computer(s)
Support Data Integration Computer(s)
Consumable Information Upload Computer(s)
Account Information Upload Computer(s)
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Database Server(s)
Team Database(s)
Team Database(s)
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
25502
25503
25504
25505
25506
25507
25508
25509
25510
25511
22223
21100

FIG. 25

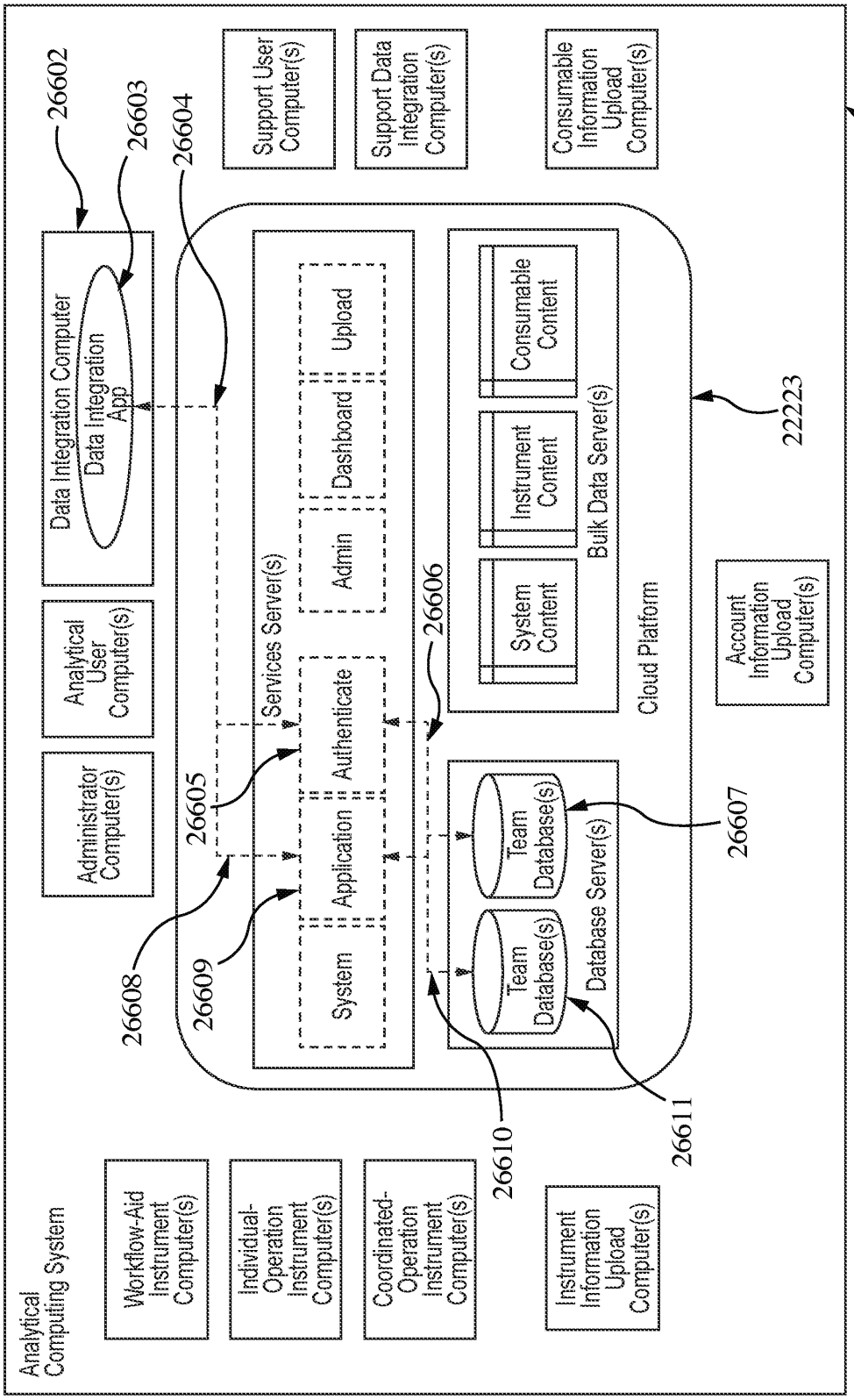
Analytical Computing System
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer
Data Integration App
Support User Computer(s)
Support Data Integration Computer(s)
Consumable Information Upload Computer(s)
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Account Information Upload Computer(s)
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Cloud Platform
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Database Server(s)
Team Database(s)
Team Database(s)
26602
26603
26604
26605
26606
26607
26608
26609
26610
26611
22223
21100

FIG. 26

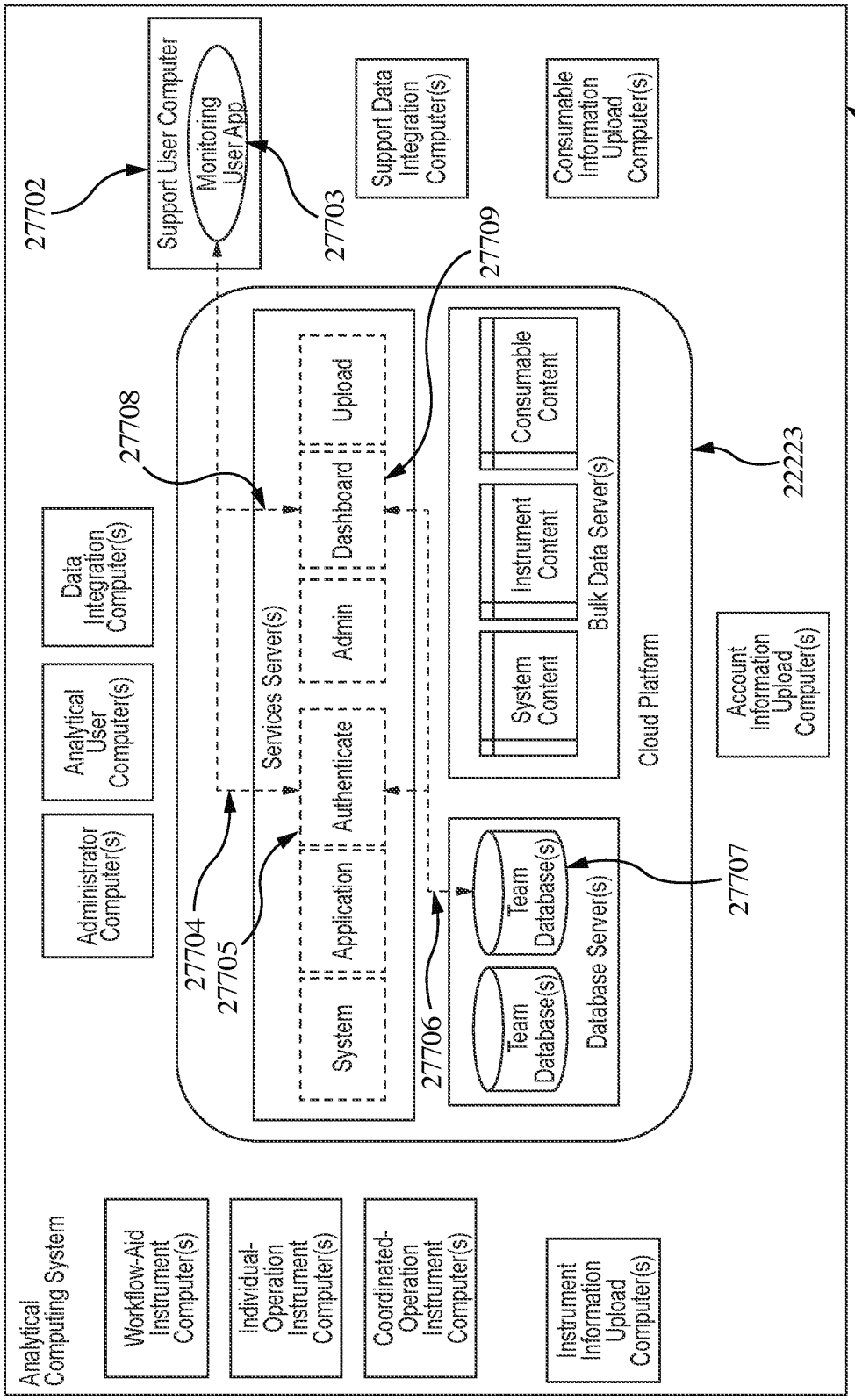
Analytical Computing System
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Support User Computer
Monitoring User App
Support Data Integration Computer(s)
Consumable Information Upload Computer(s)
Account Information Upload Computer(s)
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Database Server(s)
Team Database(s)
Team Database(s)
27702
27703
27704
27705
27706
27707
27708
27709
22223
21100

FIG. 27

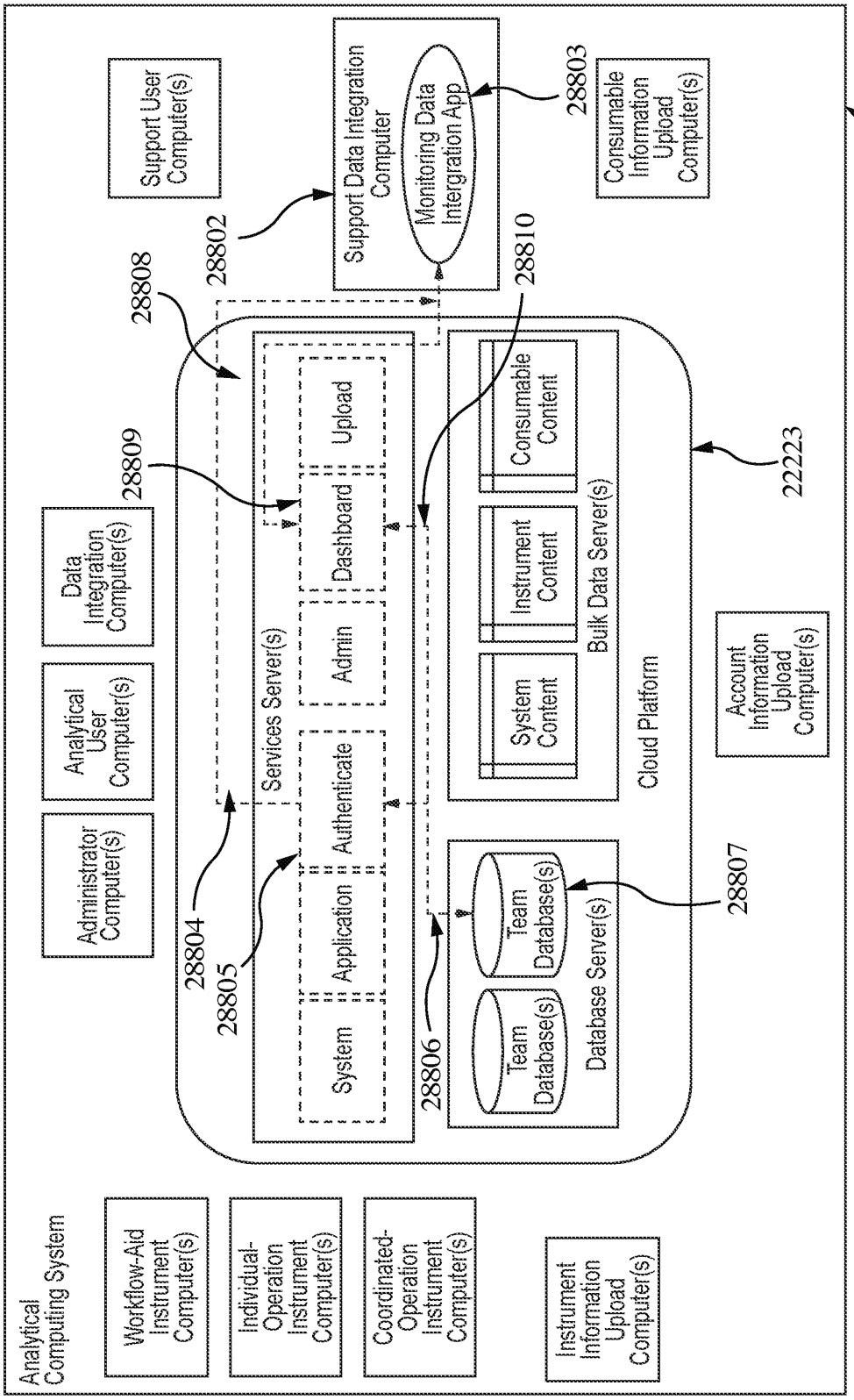
Analytical Computing System
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Support User Computer(s)
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Support Data Integration Computer
Monitoring Data Intergration App
Consumable Information Upload Computer(s)
Account Information Upload Computer(s)
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Database Server(s)
Team Database(s)
Team Database(s)
28802
28803
28804
28805
28806
28807
28808
28809
28810
22223
21100

FIG. 28

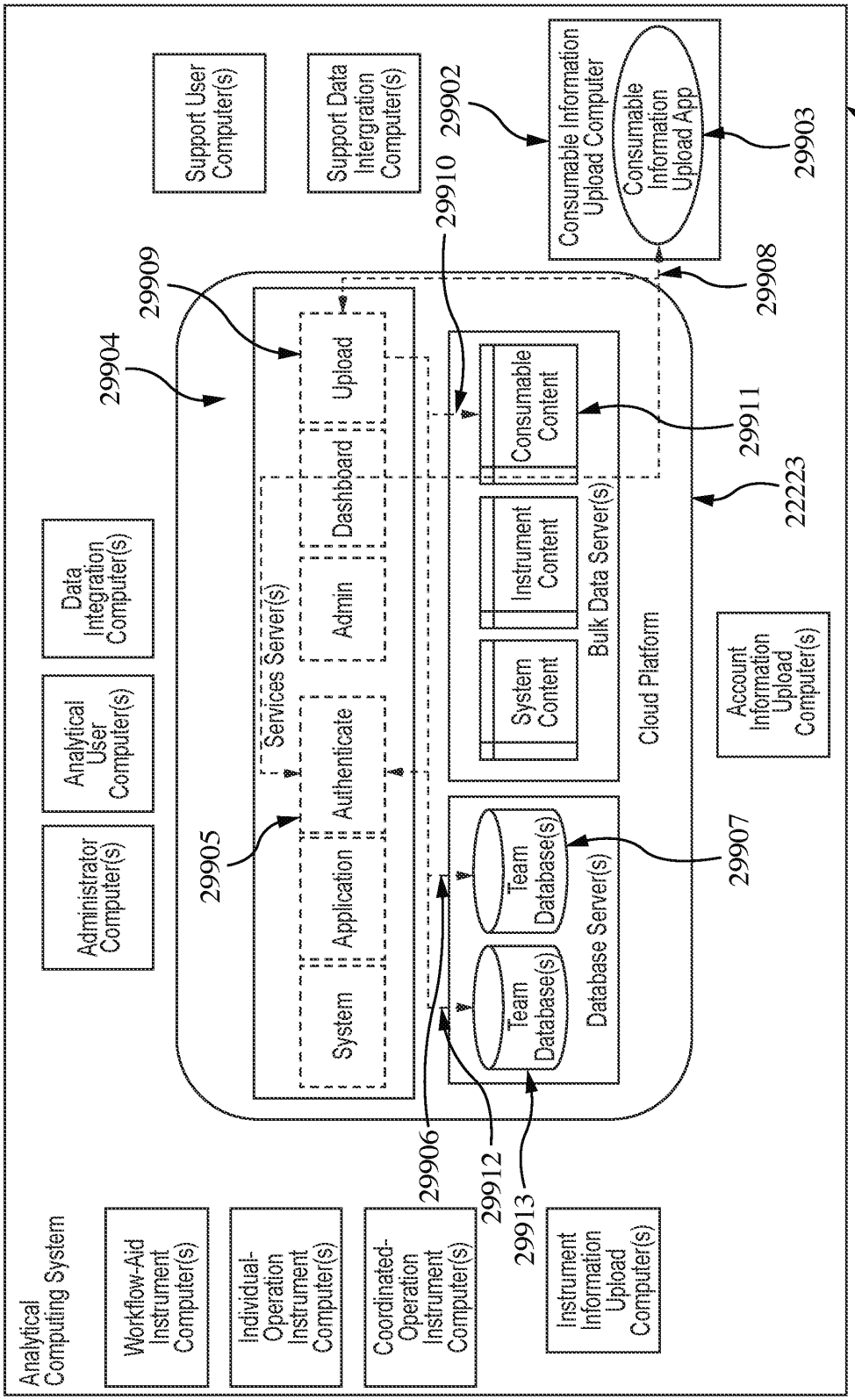
Analytical Computing System
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Support User Computer(s)
Support Data Intergration Computer(s)
Consumable Information Upload Computer
Consumable Information Upload App
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Account Information Upload Computer(s)
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Database Server(s)
Team Database(s)
Team Database(s)
29904
29905
29906
29907
29908
29909
29910
29911
29912
29913
29902
29903
22223
21100

FIG. 29

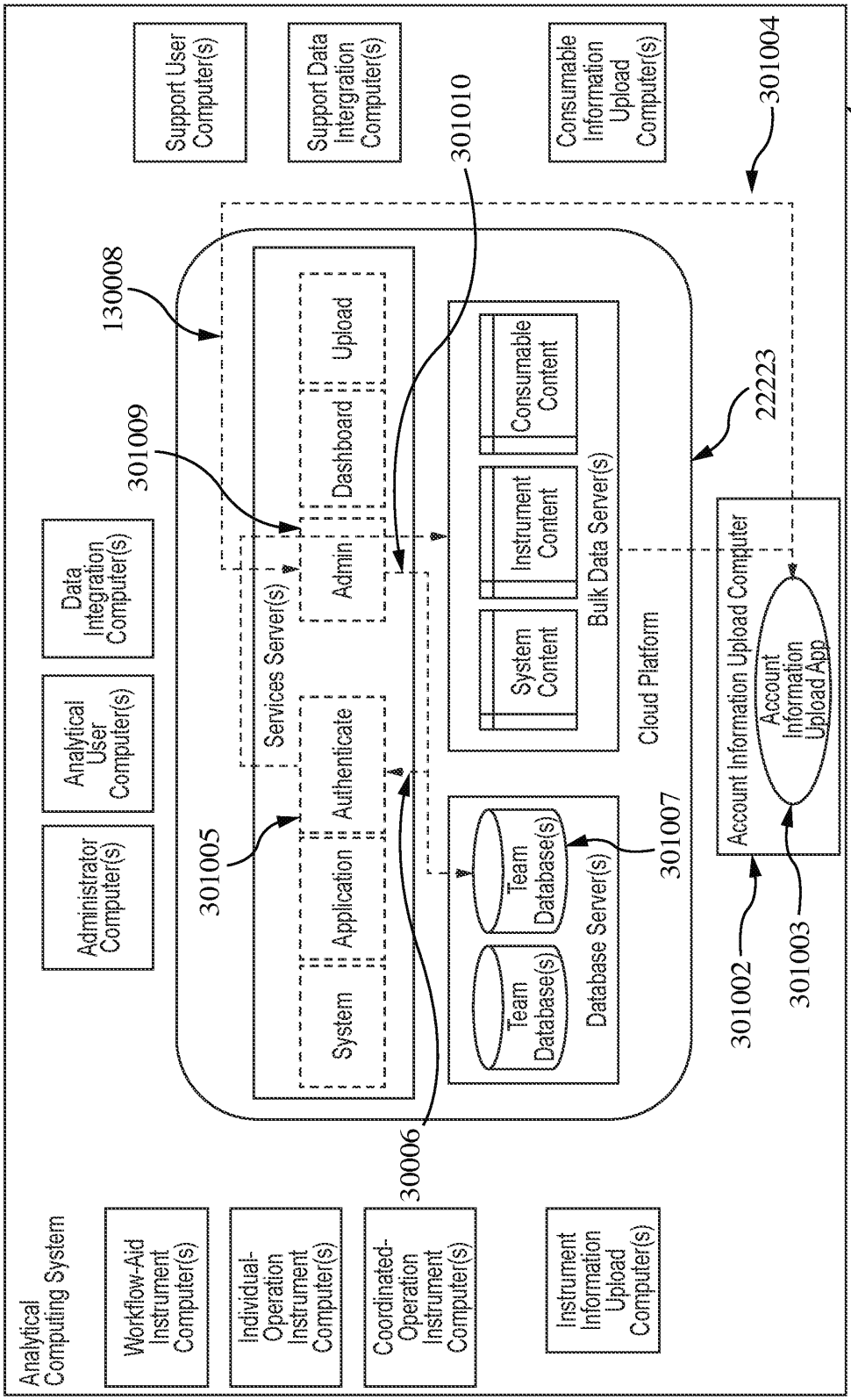
Analytical Computing System
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Support User Computer(s)
Support Data Intergration Computer(s)
Consumable Information Upload Computer(s)
130008
301009
301005
30006
301010
301004
21100
22223
301002
301003
301007
System
Application
Authenticate
Services Server(s)
Admin
Dashboard
Upload
Team Database(s)
Team Database(s)
Database Server(s)
System Content
Instrument Content
Consumable Content
Bulk Data Server(s)
Cloud Platform
Account Information Upload Computer
Account Information Upload App

FIG. 30

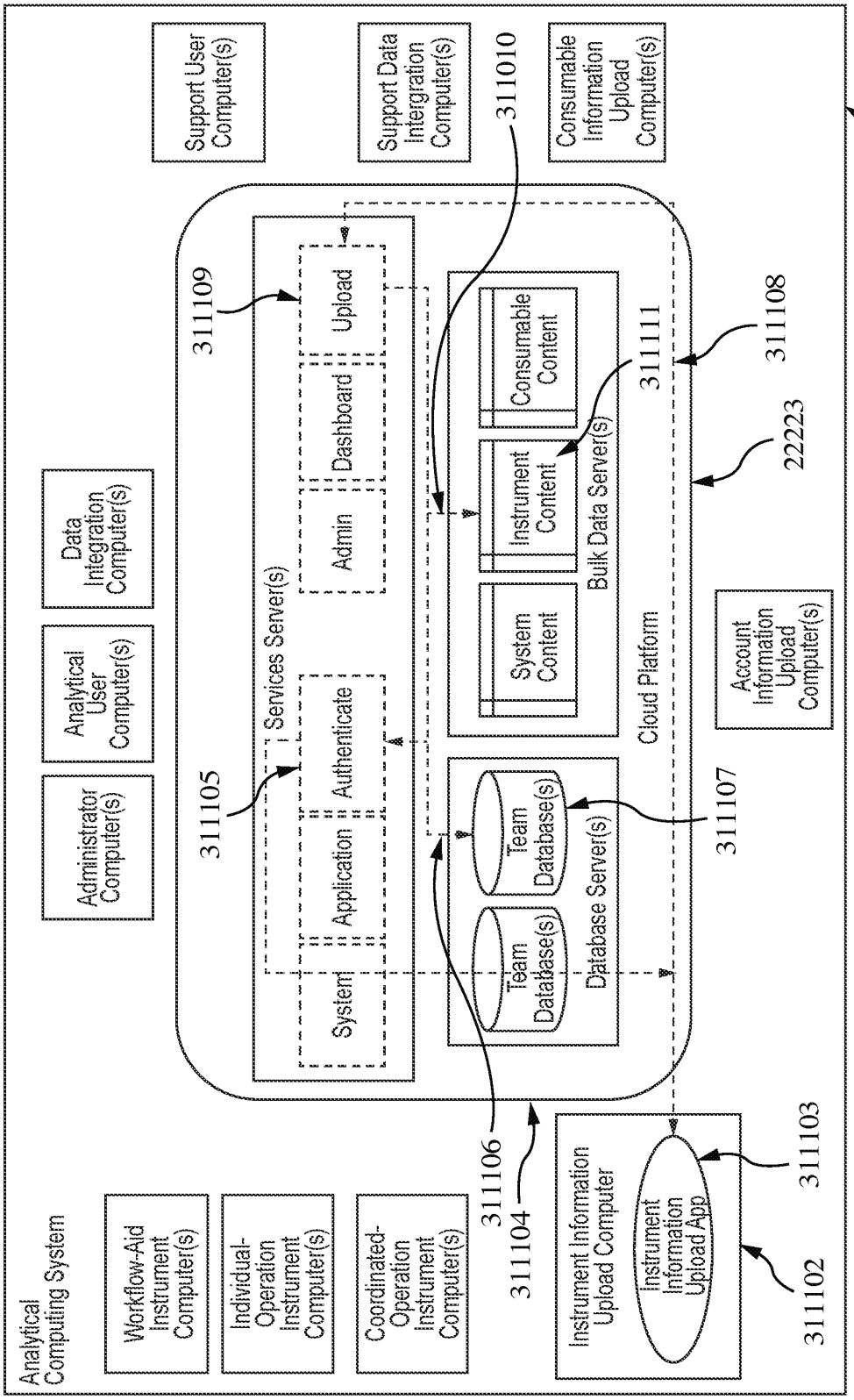
Analytical Computing System
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Support User Computer(s)
Support Data Intergration Computer(s)
Consumable Information Upload Computer(s)
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer
Instrument Information Upload App
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Database Server(s)
Team Database(s)
Team Database(s)
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
Account Information Upload Computer(s)
21100
22223
311102
311103
311104
311105
311106
311107
311108
311109
311010
311111

FIG. 31

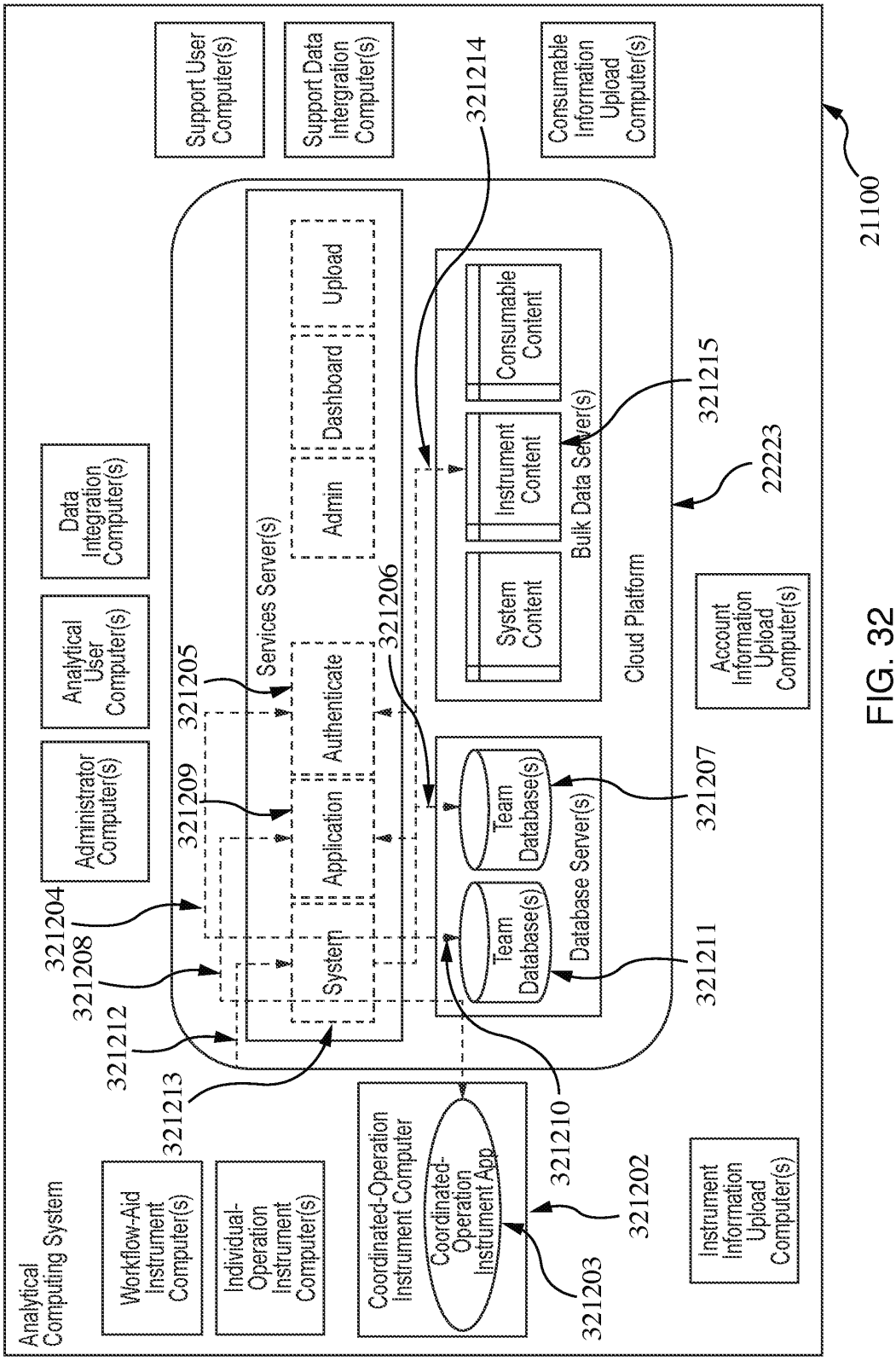
Analytical Computing System
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer(s)
Coordinated-Operation Instrument Computer
Coordinated-Operation Instrument App
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Support User Computer(s)
Support Data Intergration Computer(s)
Consumable Information Upload Computer(s)
Instrument Information Upload Computer(s)
Account Information Upload Computer(s)
System
Application
Authenticate
Services Server(s)
Admin
Dashboard
Upload
Team Database(s)
Team Database(s)
Database Server(s)
System Content
Instrument Content
Consumable Content
Bulk Data Server(s)
Cloud Platform
321204
321208
321212
321213
321209
321205
321206
321214
321210
321203
321202
321211
321207
321215
22223
21100

FIG. 32

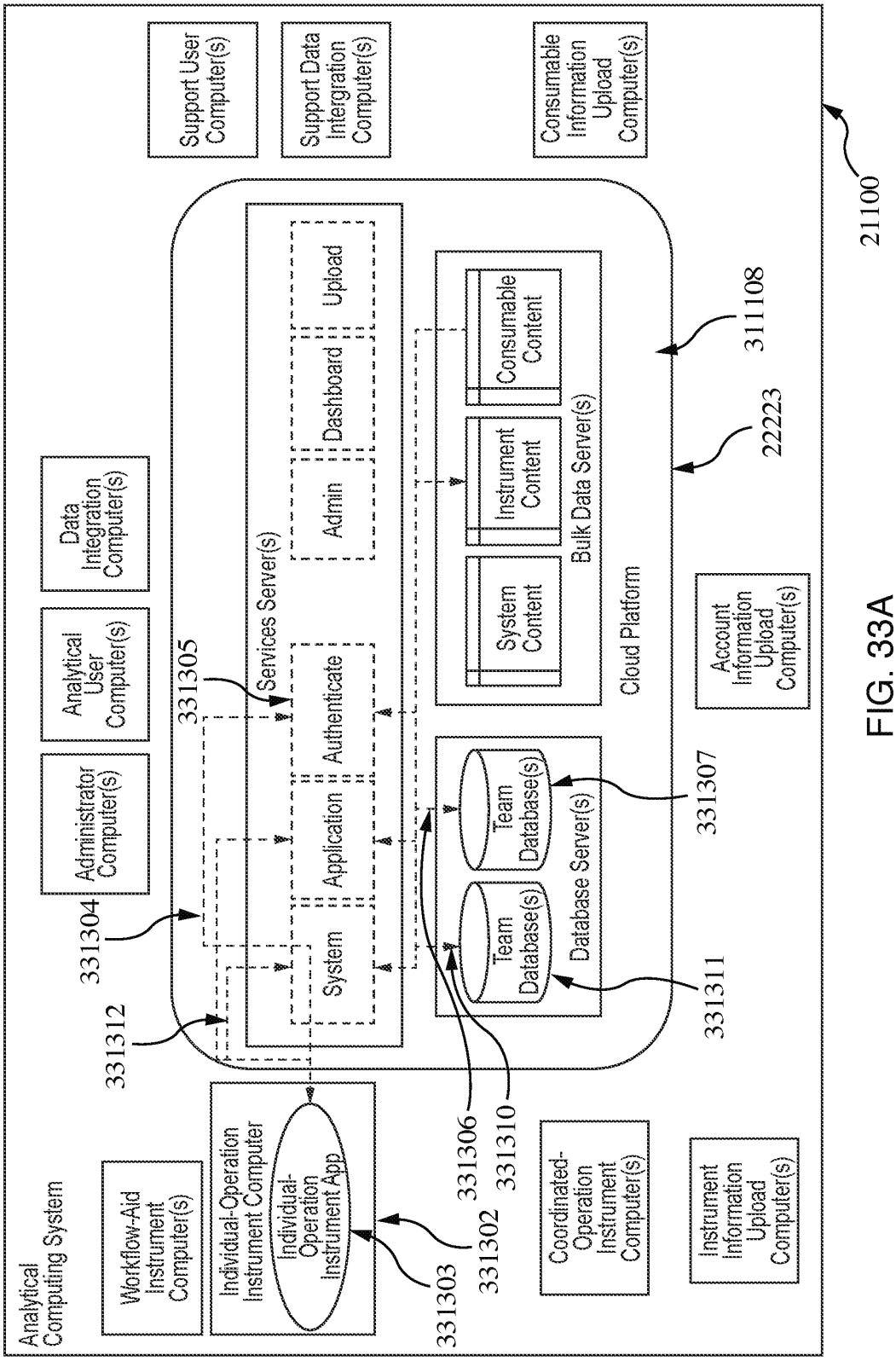
Analytical Computing System
Workflow-Aid Instrument Computer(s)
Individual-Operation Instrument Computer
Individual-Operation Instrument App
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
Support User Computer(s)
Support Data Intergration Computer(s)
Consumable Information Upload Computer(s)
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
Account Information Upload Computer(s)
Cloud Platform
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
Database Server(s)
Team Database(s)
Team Database(s)
Bulk Data Server(s)
System Content
Instrument Content
Consumable Content
331302
331303
331304
331305
331306
331307
331310
331311
331312
311108
22223
21100

FIG. 33A

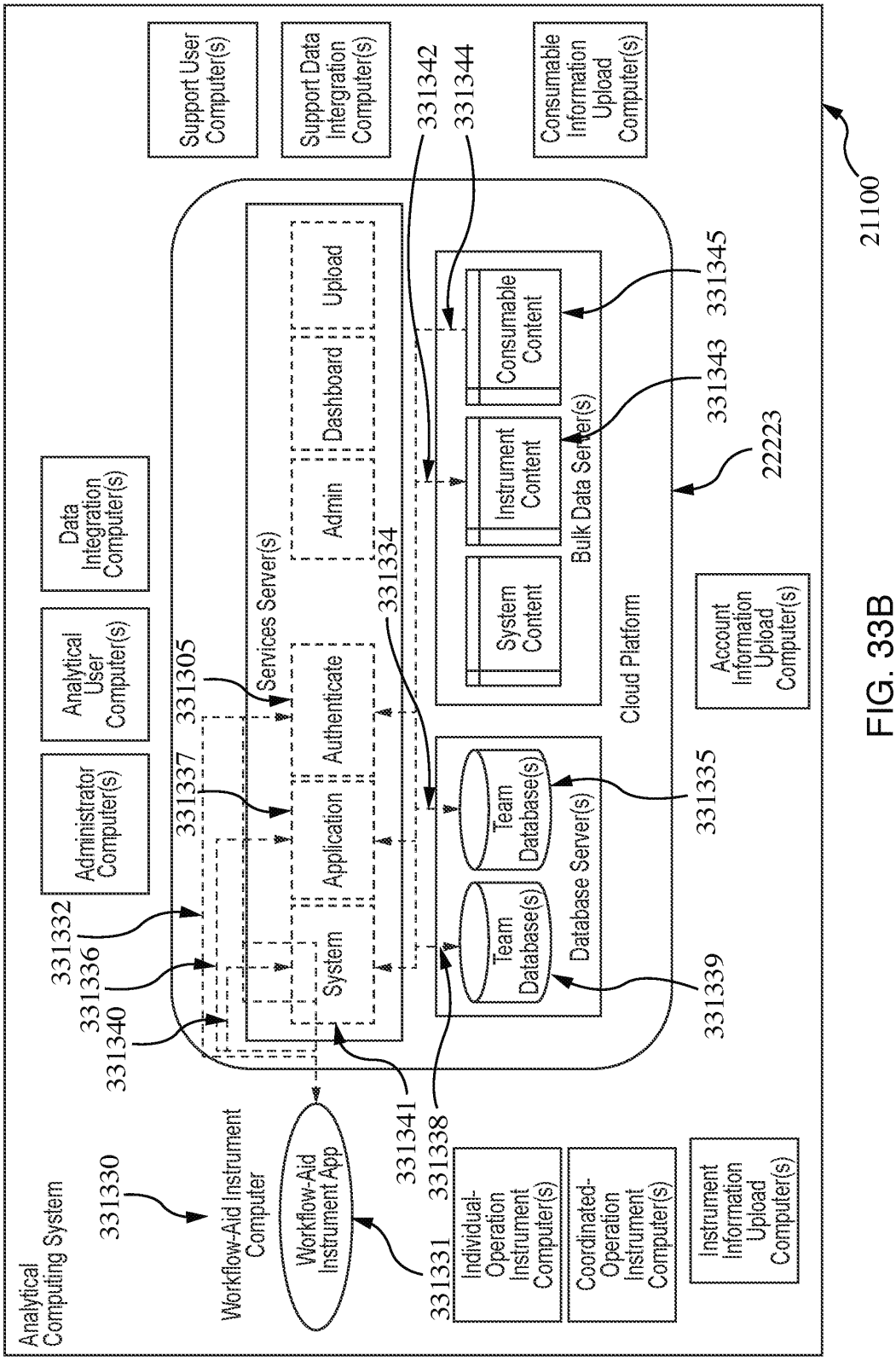
Analytical Computing System
331330
Workflow-Aid Instrument Computer
Workflow-Aid Instrument App
331331
Individual-Operation Instrument Computer(s)
331338
Coordinated-Operation Instrument Computer(s)
Instrument Information Upload Computer(s)
331341
331340
331336
331332
Administrator Computer(s)
Analytical User Computer(s)
Data Integration Computer(s)
331337
331305
Services Server(s)
System
Application
Authenticate
Admin
Dashboard
Upload
331334
Team Database(s)
Team Database(s)
Database Server(s)
331339
331335
System Content
Instrument Content
Consumable Content
Bulk Data Server(s)
Cloud Platform
331342
331344
331343
331345
22223
Account Information Upload Computer(s)
Support User Computer(s)
Support Data Intergration Computer(s)
Consumable Information Upload Computer(s)
21100

FIG. 33B

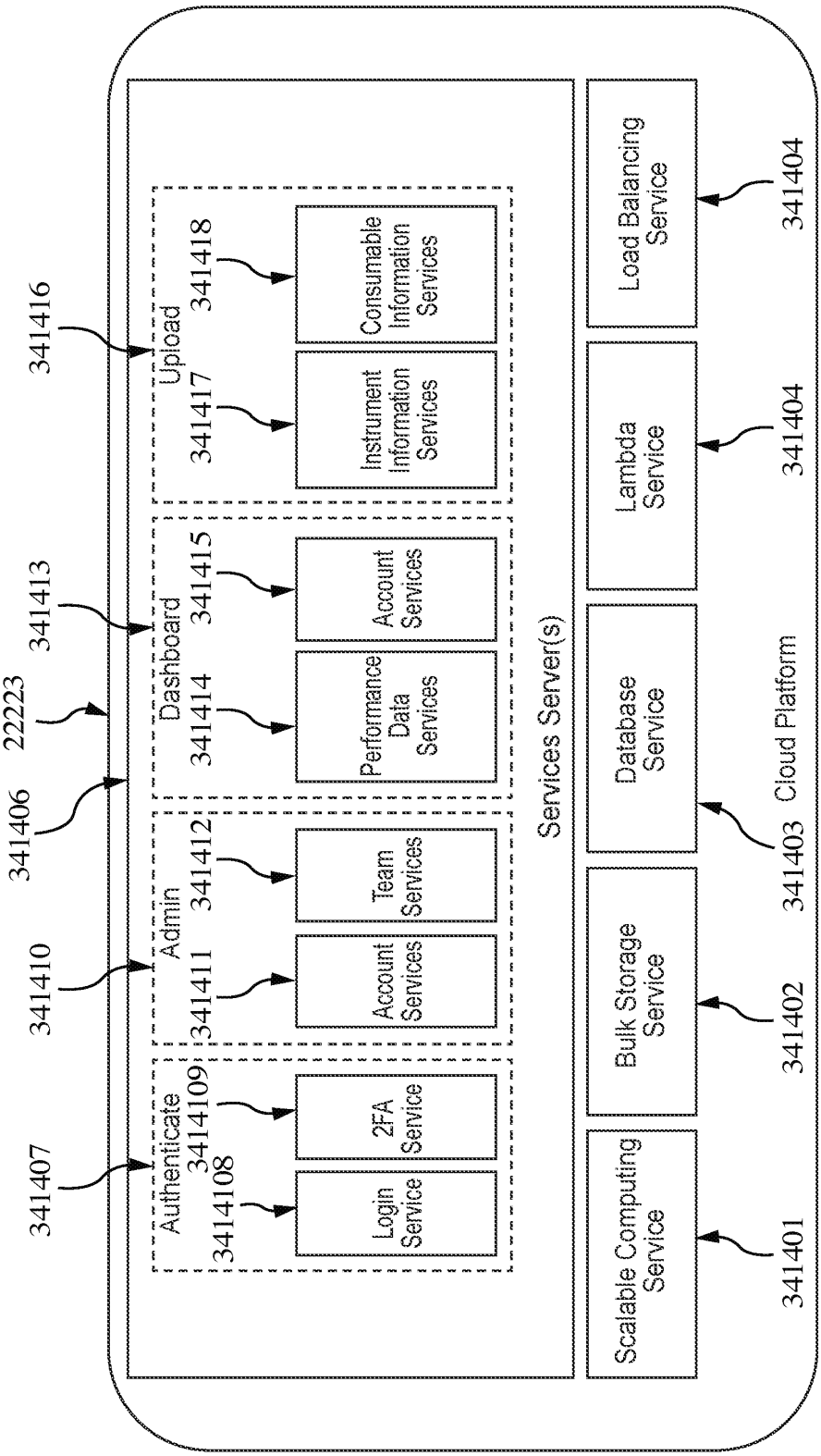
341416
341413
22223
341406
341410
341407
Authenticate
3414108
3414109
Login Service
2FA Service
Admin
341411
341412
Account Services
Team Services
Dashboard
341414
341415
Performance Data Services
Account Services
Upload
341417
341418
Instrument Information Services
Consumable Information Services
Services Server(s)
Scalable Computing Service
Bulk Storage Service
Database Service
Lambda Service
Load Balancing Service
341401
341402
341403
341404
341404
Cloud Platform

FIG. 34A

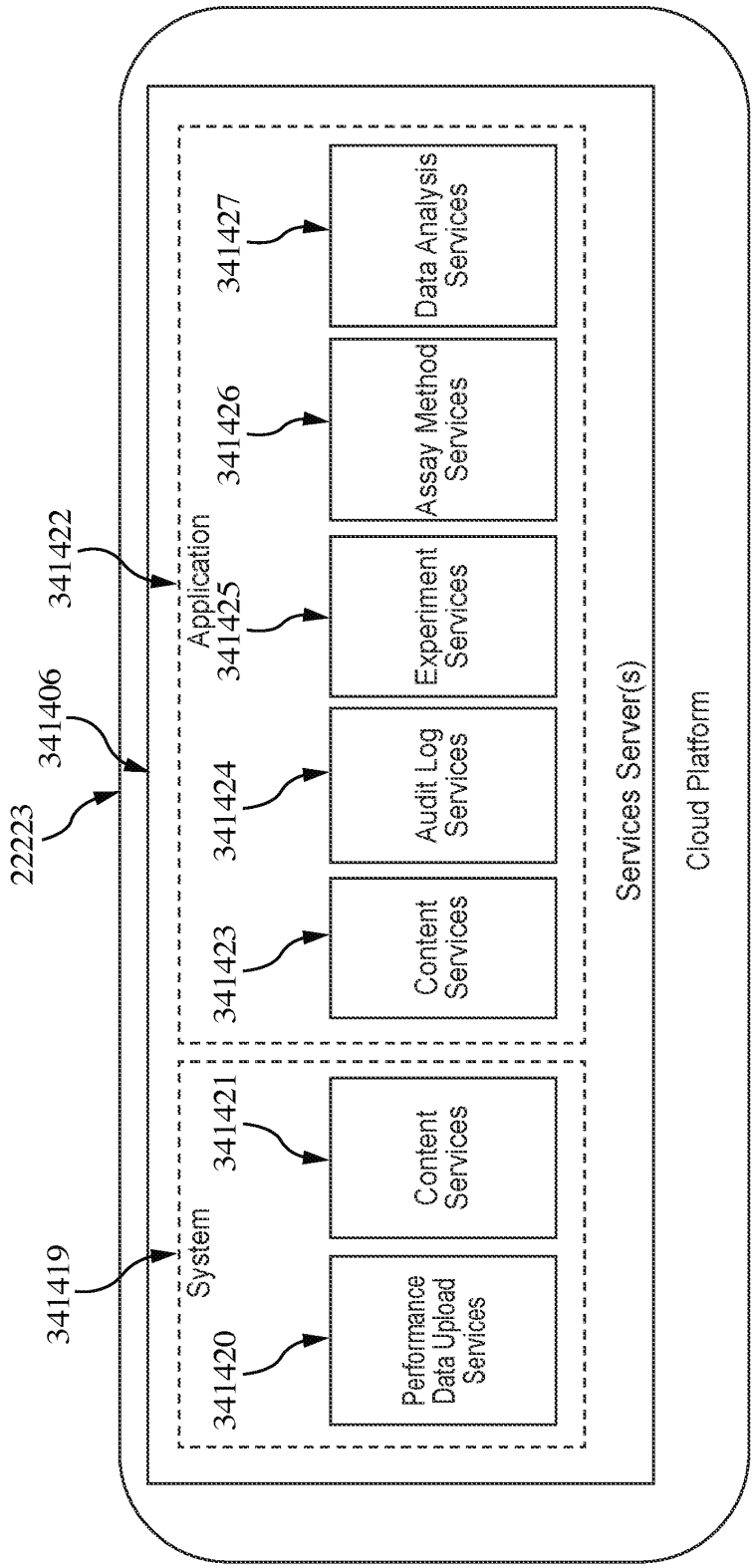
341419
22223
341406
341422
System
Application
341420
Performance Data Upload Services
341421
Content Services
341423
Content Services
341424
Audit Log Services
341425
Experiment Services
341426
Assay Method Services
341427
Data Analysis Services
Services Server(s)
Cloud Platform

FIG. 34B

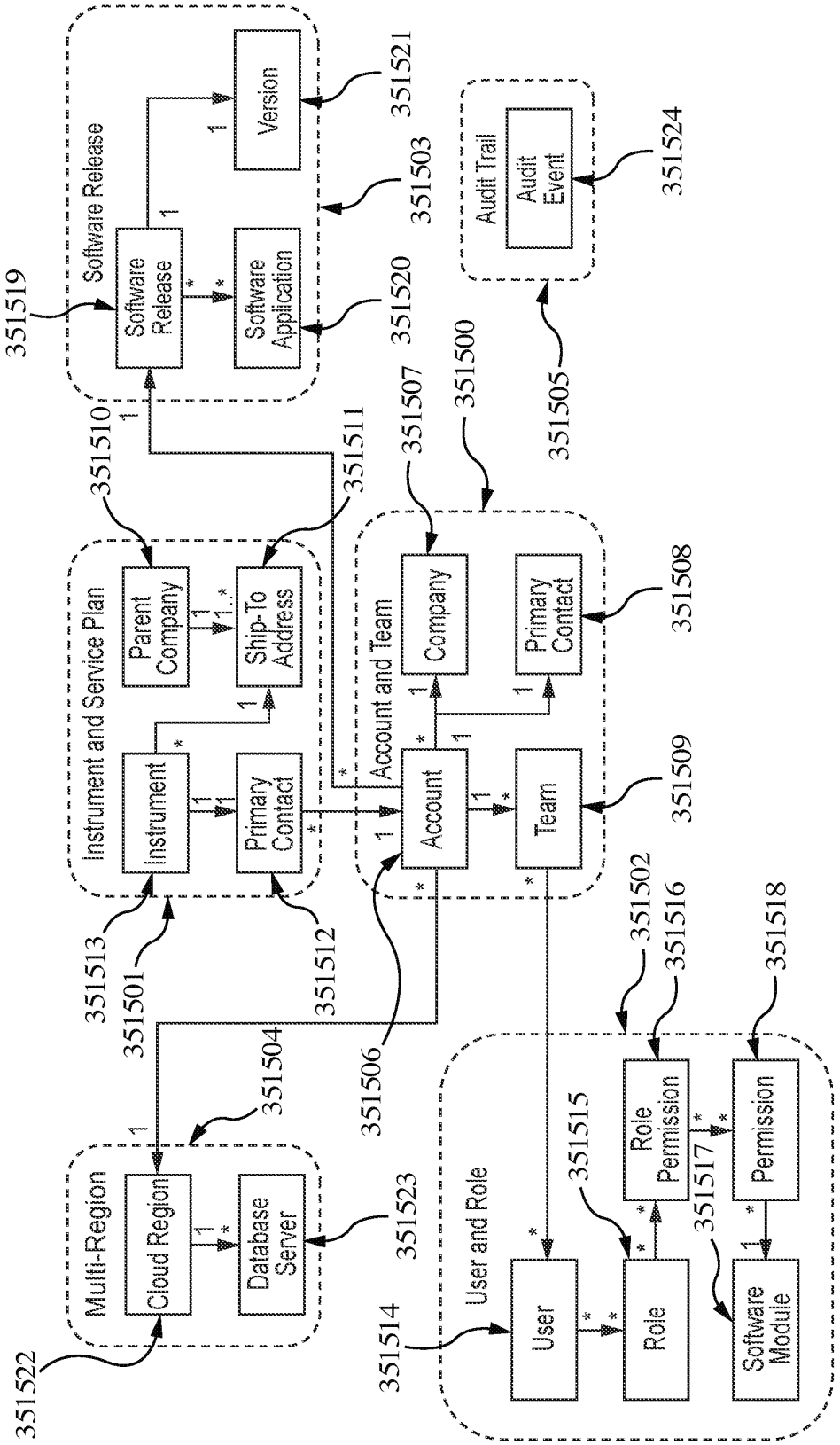
Software Release
Software Release
Version
Software Application
Audit Trail
Audit Event
Instrument and Service Plan
Parent Company
Ship-To Address
Instrument
Primary Contact
Account and Team
Company
Primary Contact
Account
Team
Multi-Region
Cloud Region
Database Server
User and Role
User
Role
Role Permission
Permission
Software Module
351519
351521
351503
351520
351524
351505
351510
351511
351507
351500
351508
351513
351501
351512
351506
351509
351504
351523
351522
351514
351515
351502
351516
351518
351517

FIG. 35A

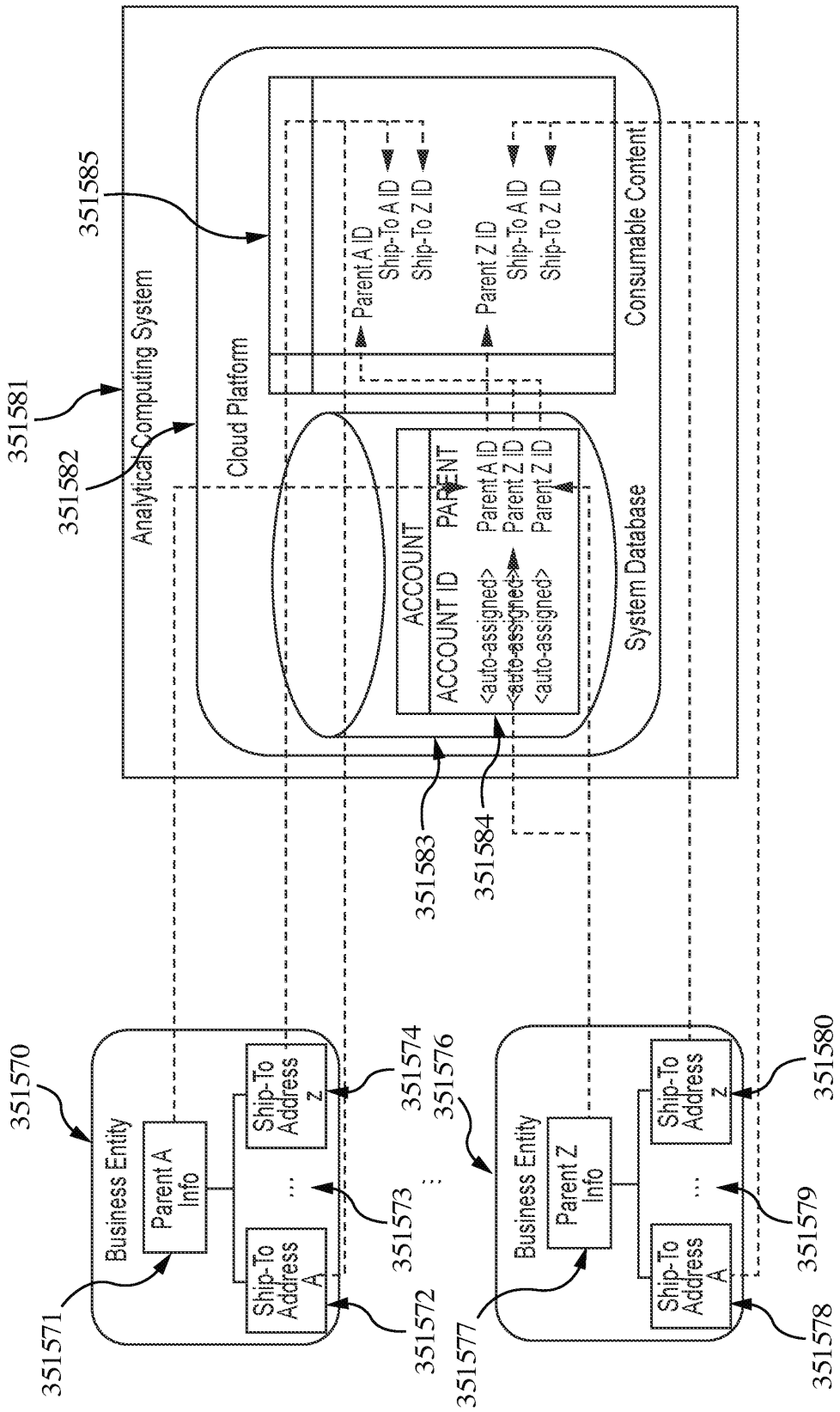
351581
351582
Analytical Computing System
Cloud Platform
351585
Parent A ID
Ship-To A ID
Ship-To Z ID
Parent Z ID
Ship-To A ID
Ship-To Z ID
Consumable Content
ACCOUNT
ACCOUNT ID
PARENT
<auto-assigned>
Parent A ID
<auto-assigned>
Parent Z ID
<auto-assigned>
Parent Z ID
System Database
351583
351584
351570
Business Entity
Parent A Info
Ship-To Address A
Ship-To Address Z
351571
351572
351573
351574
351576
Business Entity
Parent Z Info
Ship-To Address A
Ship-To Address Z
351577
351578
351579
351580

FIG. 35B

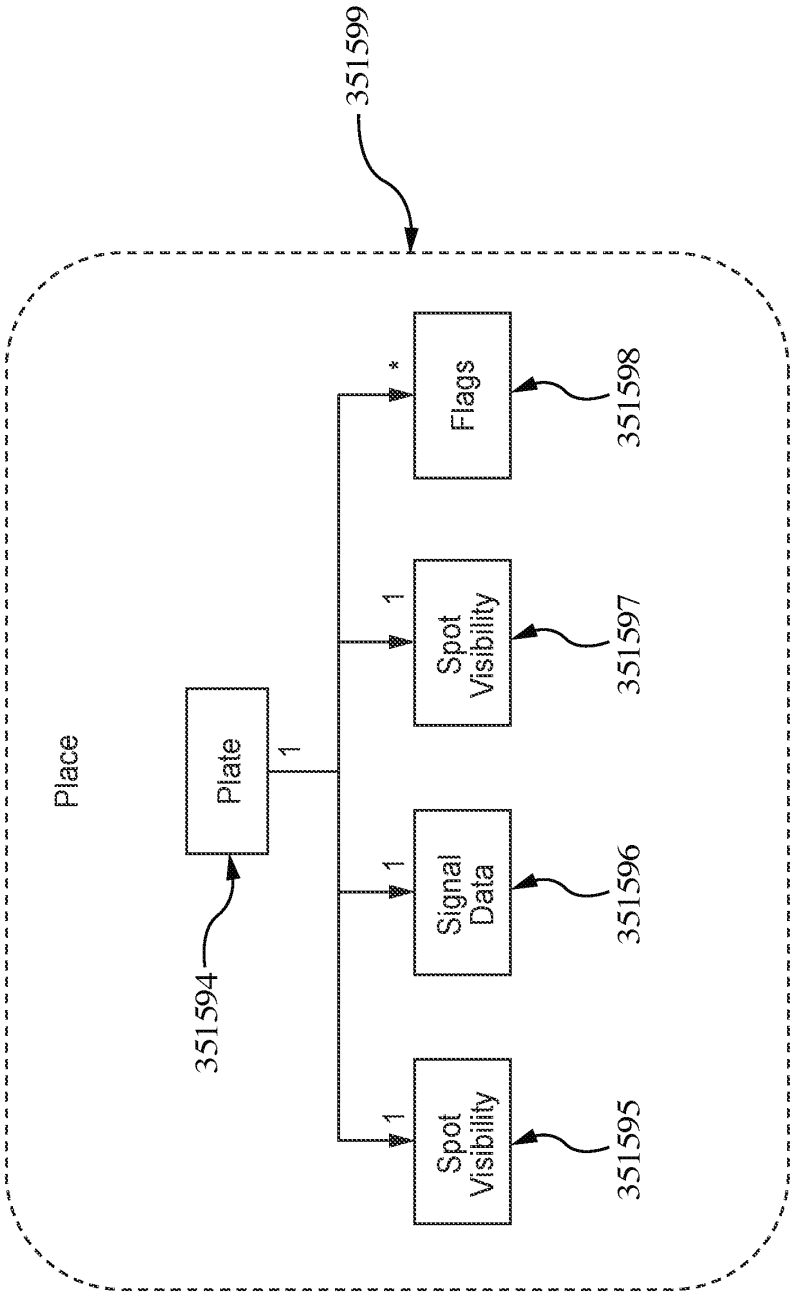
351599
Place
Plate
1
351594
1
Spot Visibility
351595
1
Signal Data
351596
1
Spot Visibility
351597
*
Flags
351598

FIG. 35C

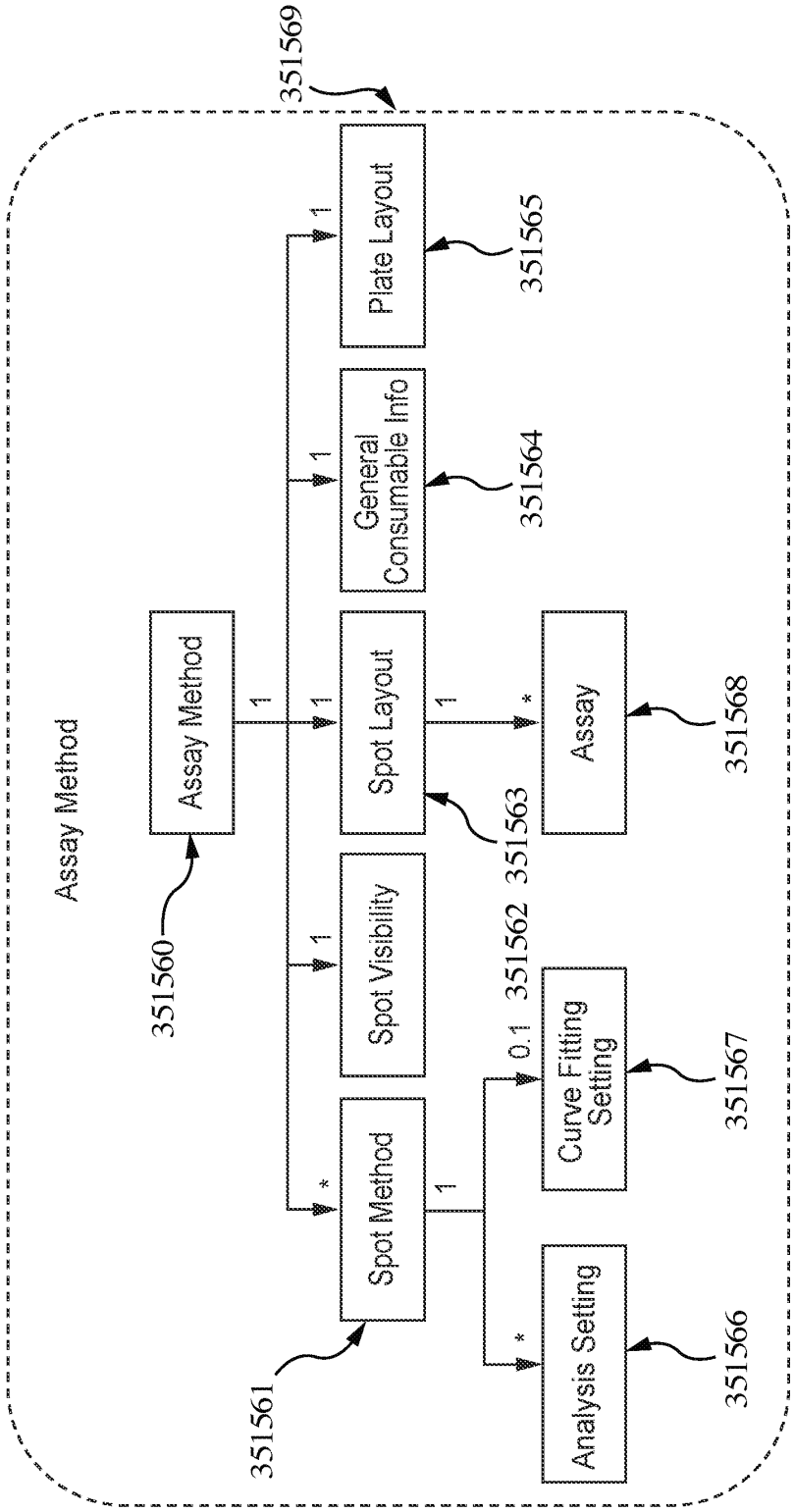
Assay Method
351569
Assay Method
351560
Plate Layout
351565
General Consumable Info
351564
Spot Layout
351563
Assay
351568
Spot Visibility
351562
Spot Method
351561
Curve Fitting Setting
351567
Analysis Setting
351566
1
*
0.1

FIG. 35D

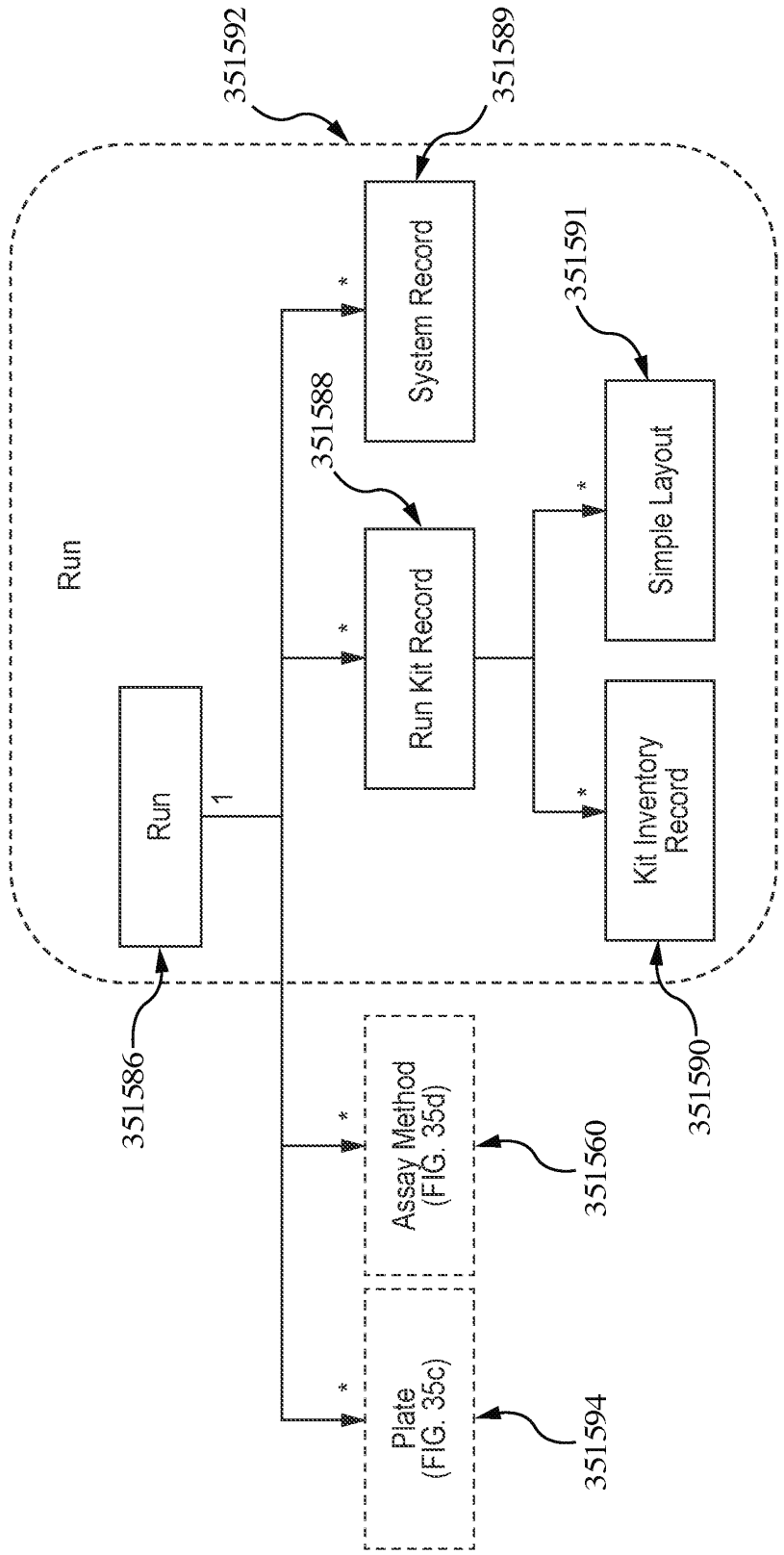
351592
351589
Run
System Record
351588
351591
Run Kit Record
Simple Layout
Run
1
Kit Inventory Record
351586
351590
Assay Method (FIG. 35d)
351560
Plate (FIG. 35c)
351594
*

FIG. 35E

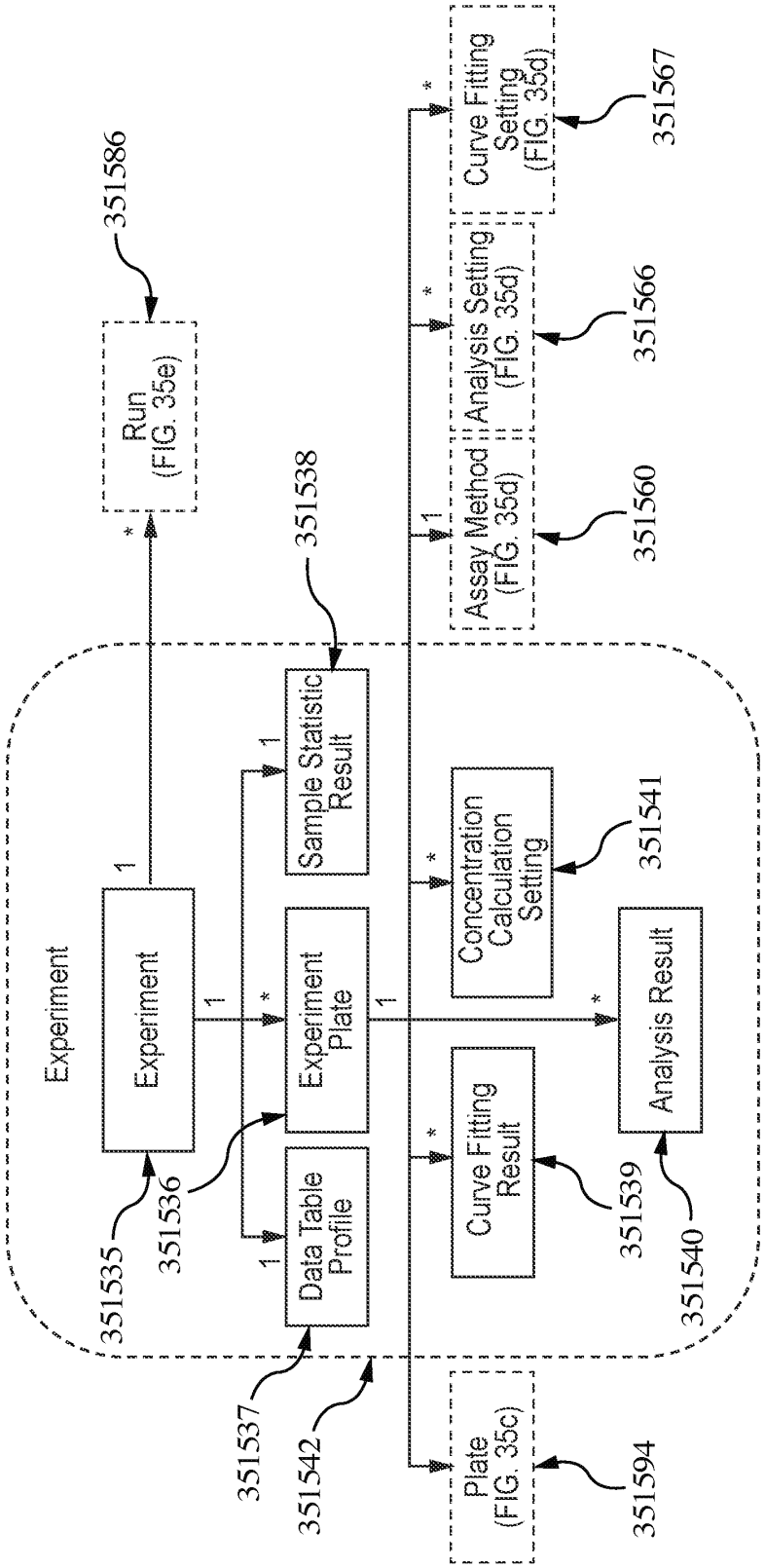
Experiment
Experiment
Experiment Plate
Data Table Profile
Sample Statistic Result
Run (FIG. 35e)
Assay Method (FIG. 35d)
Analysis Setting (FIG. 35d)
Curve Fitting Setting (FIG. 35d)
Concentration Calculation Setting
Curve Fitting Result
Analysis Result
Plate (FIG. 35c)
351535
351536
351537
351538
351539
351540
351541
351542
351560
351566
351567
351586
351594
1
*

FIG. 35F

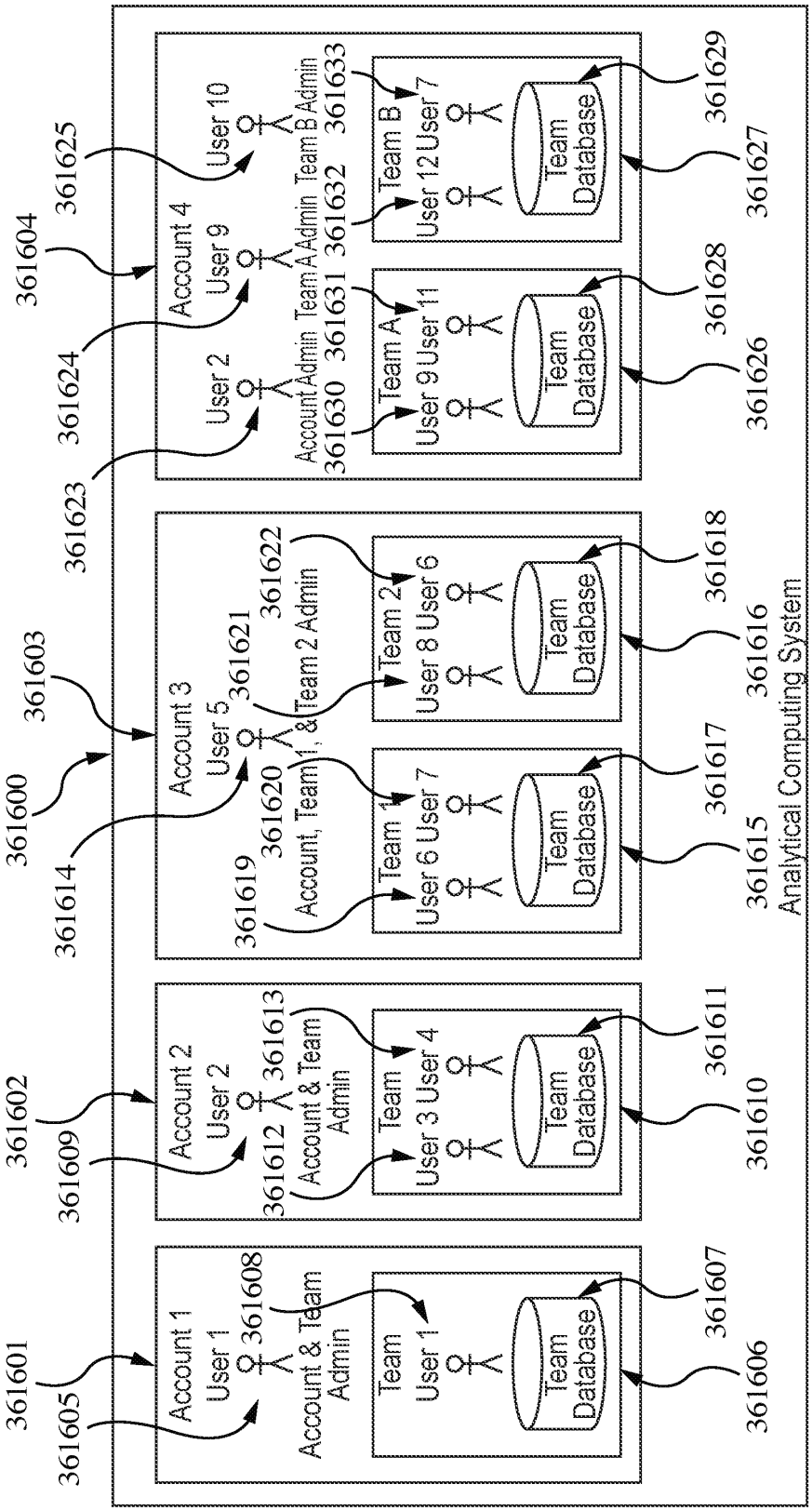
361601
361605
Account 1
User 1
361608
Account & Team Admin
Team
User 1
Team Database
361606
361607
361602
361609
Account 2
User 2
361612
361613
Account & Team Admin
Team
User 3 User 4
Team Database
361610
361611
361603
361600
361614
Account 3
User 5
361619
361620
Account, Team 1, & Team 2 Admin
361621
361622
Team 1
User 6 User 7
Team Database
361615
361617
Team 2
User 8 User 6
Team Database
361616
361618
361604
361625
361623
361624
Account 4
User 2
User 9
User 10
Account Admin
361630
Team A Admin
361631
Team B Admin
361632
361633
Team A
User 9 User 11
Team Database
361626
361628
Team B
User 12 User 7
Team Database
361627
361629
Analytical Computing System

FIG. 36A

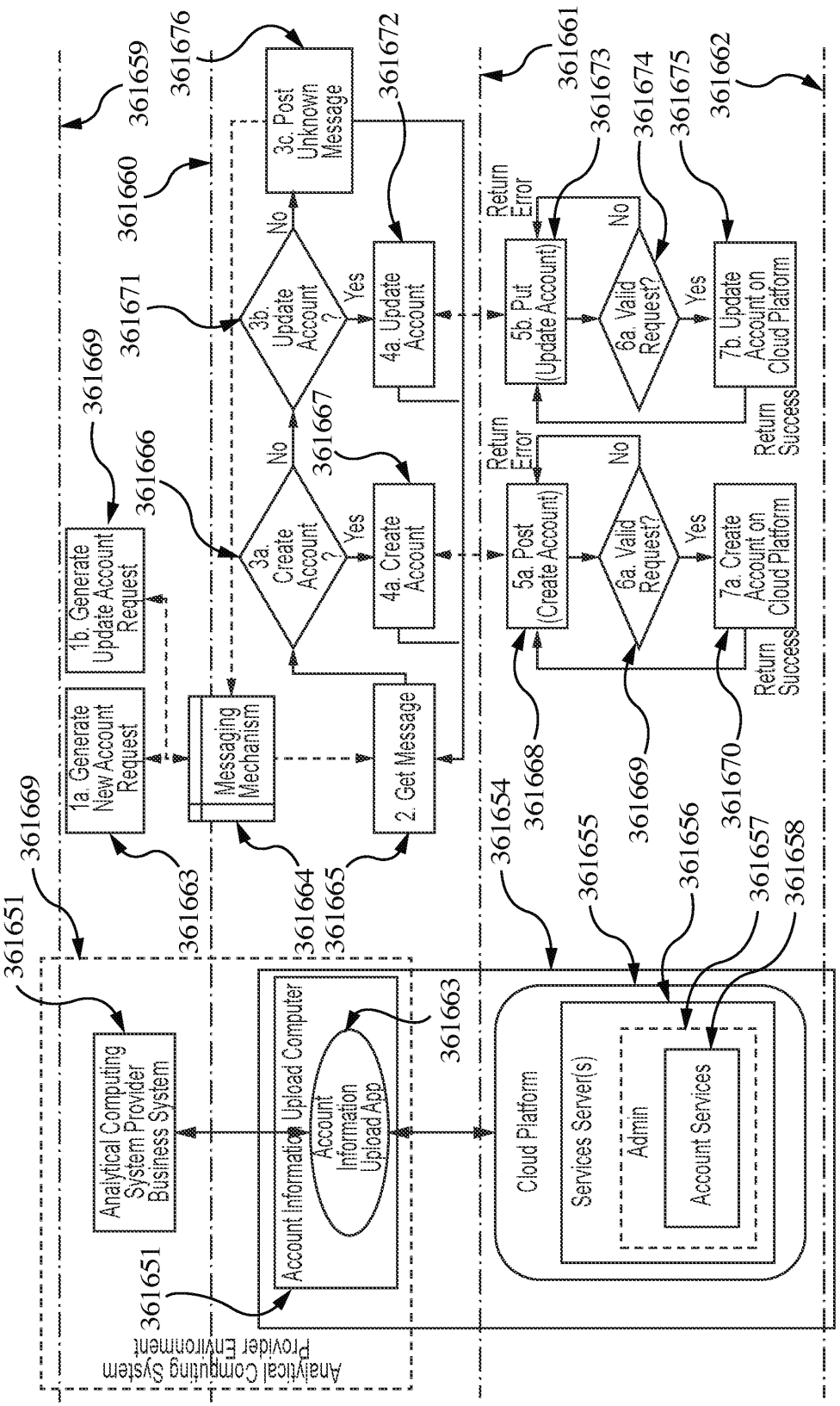
361659
361660
361676
361672
361661
361673
361674
361675
361662
361671
361669
361666
361667
361668
361669
361670
361654
361655
361656
361657
361658
361651
361663
361664
361665
361651
361663
1a. Generate New Account Request
1b. Generate Update Account Request
Messaging Mechanism
2. Get Message
3a. Create Account ?
3b. Update Account ?
3c. Post Unknown Message
4a. Create Account
4a. Update Account
5a. Post (Create Account)
5b. Put (Update Account)
6a. Valid Request?
7a. Create Account on Cloud Platform
7b. Update Account on Cloud Platform
Yes
No
Return Error
Return Success
Analytical Computing System Provider Business System
Account Information Upload Computer
Account Information Upload App
Cloud Platform
Services Server(s)
Admin
Account Services
Analytical Computing System Provider Environment

FIG. 36B

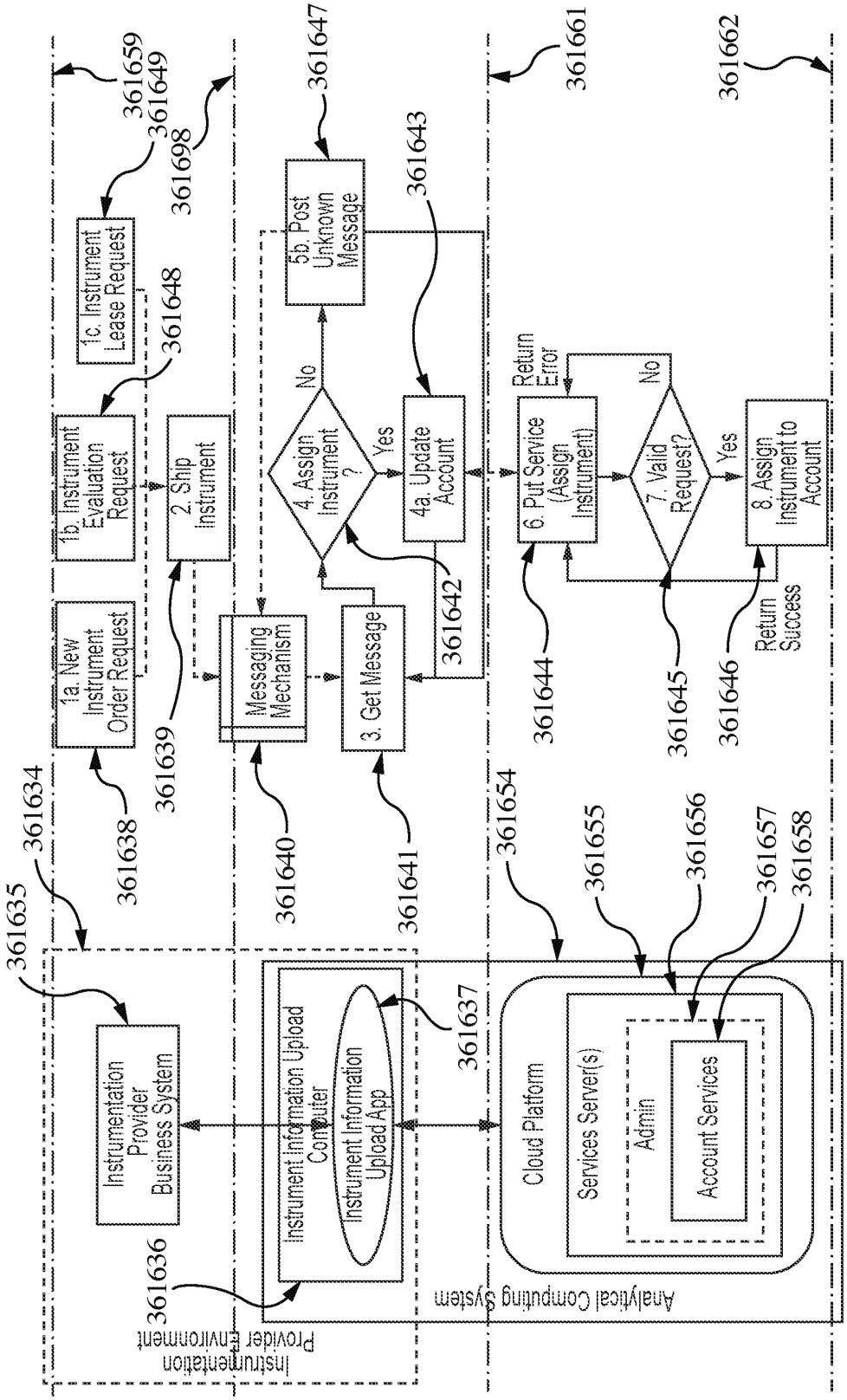
361659
361649
361698
361647
361661
361662
1c. Instrument Lease Request
361648
1b. Instrument Evaluation Request
2. Ship Instrument
4. Assign Instrument ?
No
Yes
5b. Post Unknown Message
361643
4a. Update Account
Return Error
6. Put Service (Assign Instrument)
7. Valid Request?
No
Yes
8. Assign Instrument to Account
1a. New Instrument Order Request
Messaging Mechanism
3. Get Message
361642
361639
361638
361640
361641
361644
361645
361646
Return Success
361634
361635
361654
361655
361656
361657
361658
Instrumentation Provider Business System
Instrument Information Upload Computer
Instrument Information Upload App
361637
Cloud Platform
Services Server(s)
Admin
Account Services
361636
Analytical Computing System
Instrumentation Provider Environment

FIG. 36C

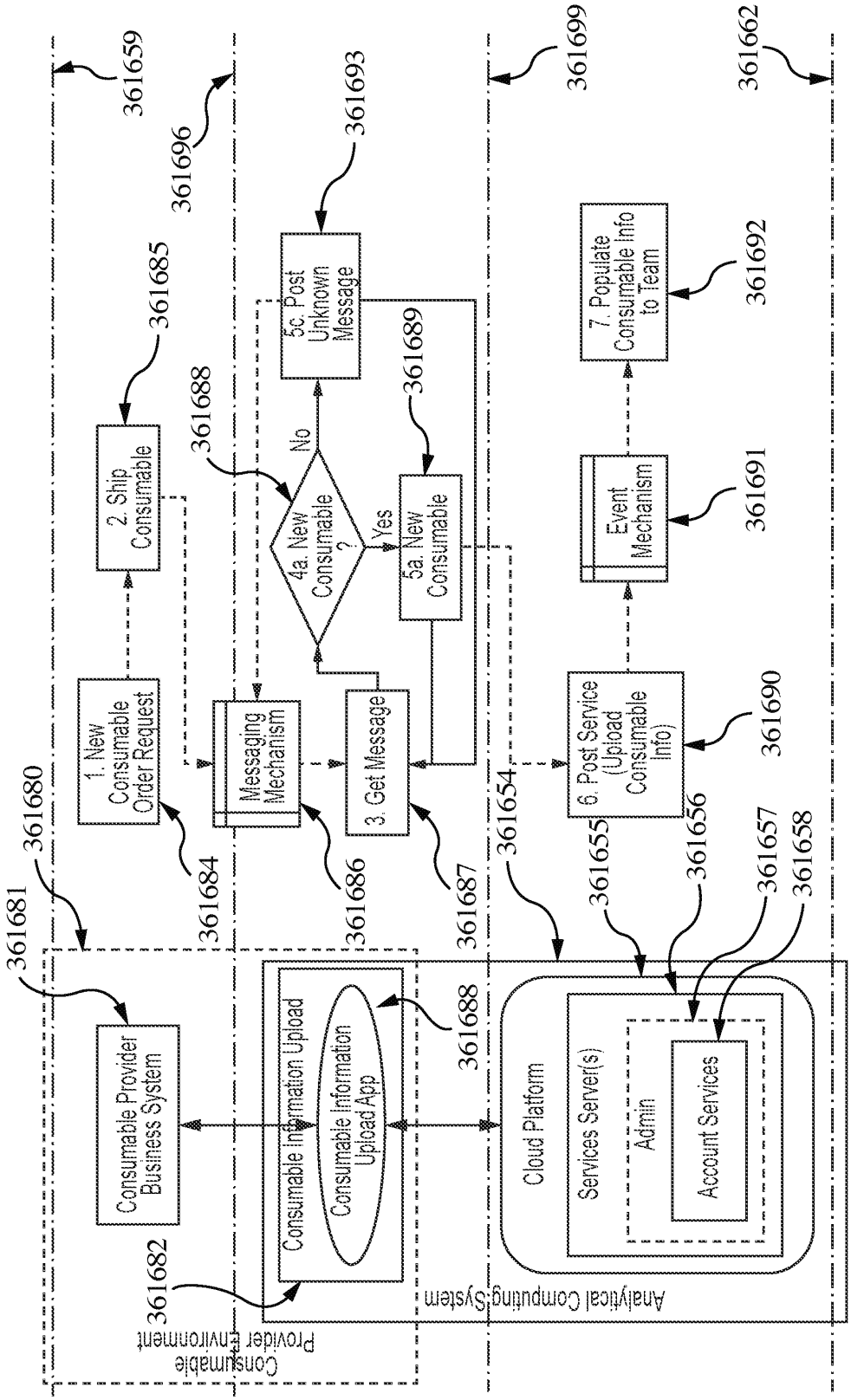
361659
361696
361693
361699
361662
361685
361688
361689
361692
361691
361690
361680
361681
361684
361686
361687
361654
361655
361656
361657
361658
361682
361688
1. New Consumable Order Request
2. Ship Consumable
Messaging Mechanism
3. Get Message
4a. New Consumable ?
No
Yes
5a. New Consumable
5c. Post Unknown Message
6. Post Service (Upload Consumable Info)
Event Mechanism
7. Populate Consumable Info to Team
Consumable Provider Business System
Consumable Information Upload
Consumable Information Upload App
Cloud Platform
Services Server(s)
Admin
Account Services
Consumable Provider Environment
Analytical Computing System

FIG. 36D

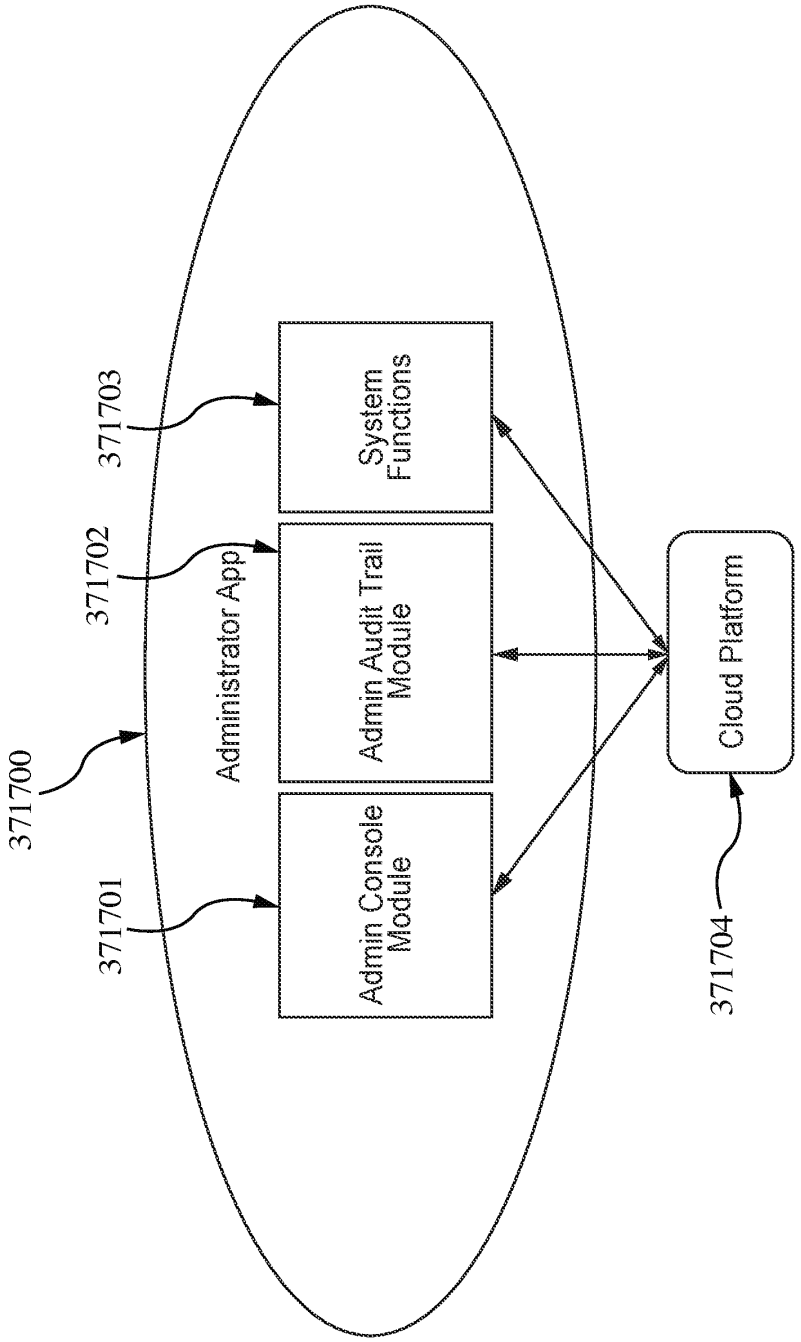
371700
Administrator App
371701
Admin Console Module
371702
Admin Audit Trail Module
371703
System Functions
371704
Cloud Platform

FIG. 37

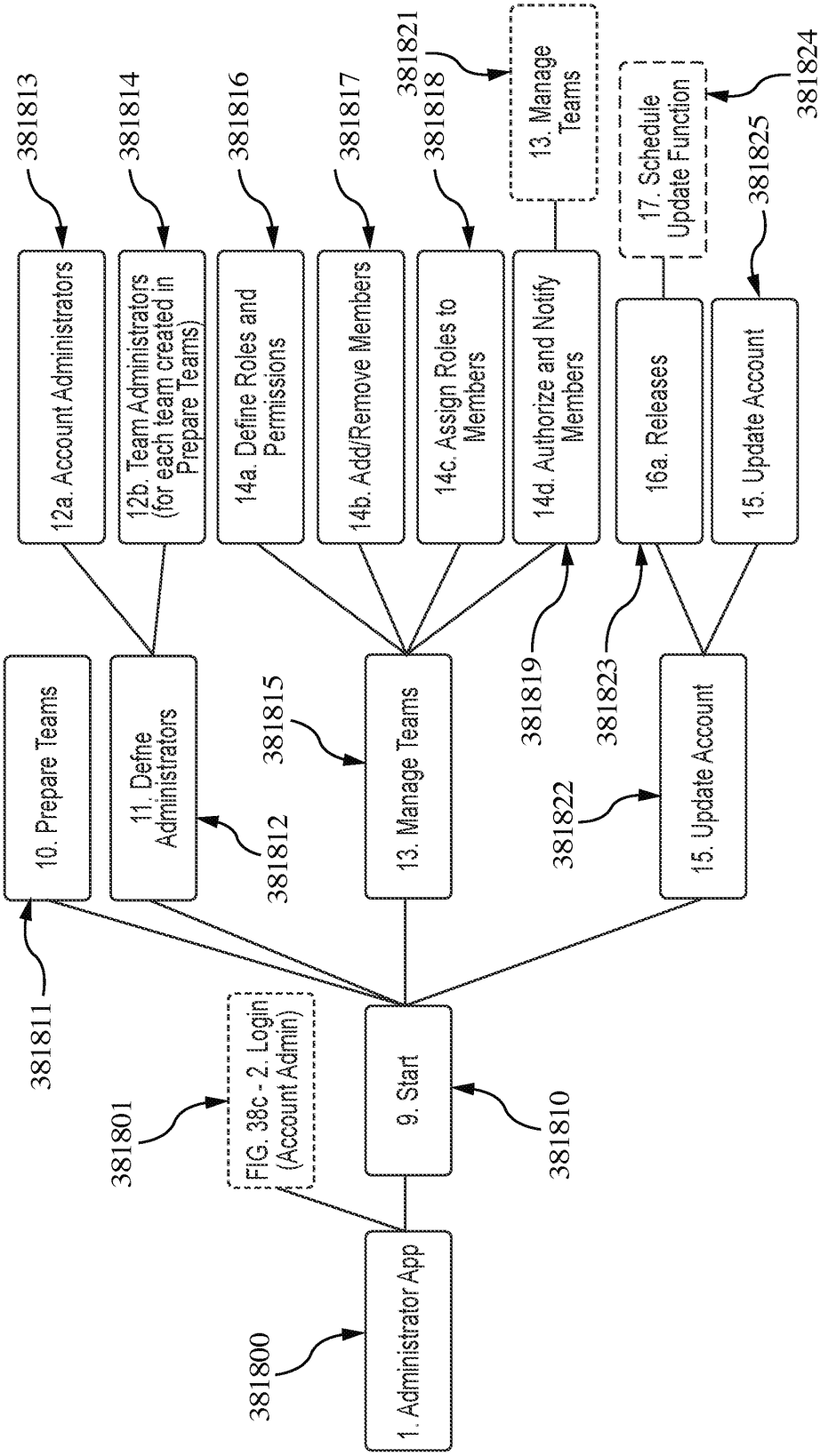
1. Administrator App
381800
FIG. 38c - 2. Login (Account Admin)
381801
9. Start
381810
10. Prepare Teams
381811
11. Define Administrators
381812
13. Manage Teams
381815
15. Update Account
381822
12a. Account Administrators
381813
12b. Team Administrators (for each team created in Prepare Teams)
381814
14a. Define Roles and Permissions
381816
14b. Add/Remove Members
381817
14c. Assign Roles to Members
381818
14d. Authorize and Notify Members
381819
13. Manage Teams
381821
16a. Releases
381823
15. Update Account
381825
17. Schedule Update Function
381824

FIG. 38A

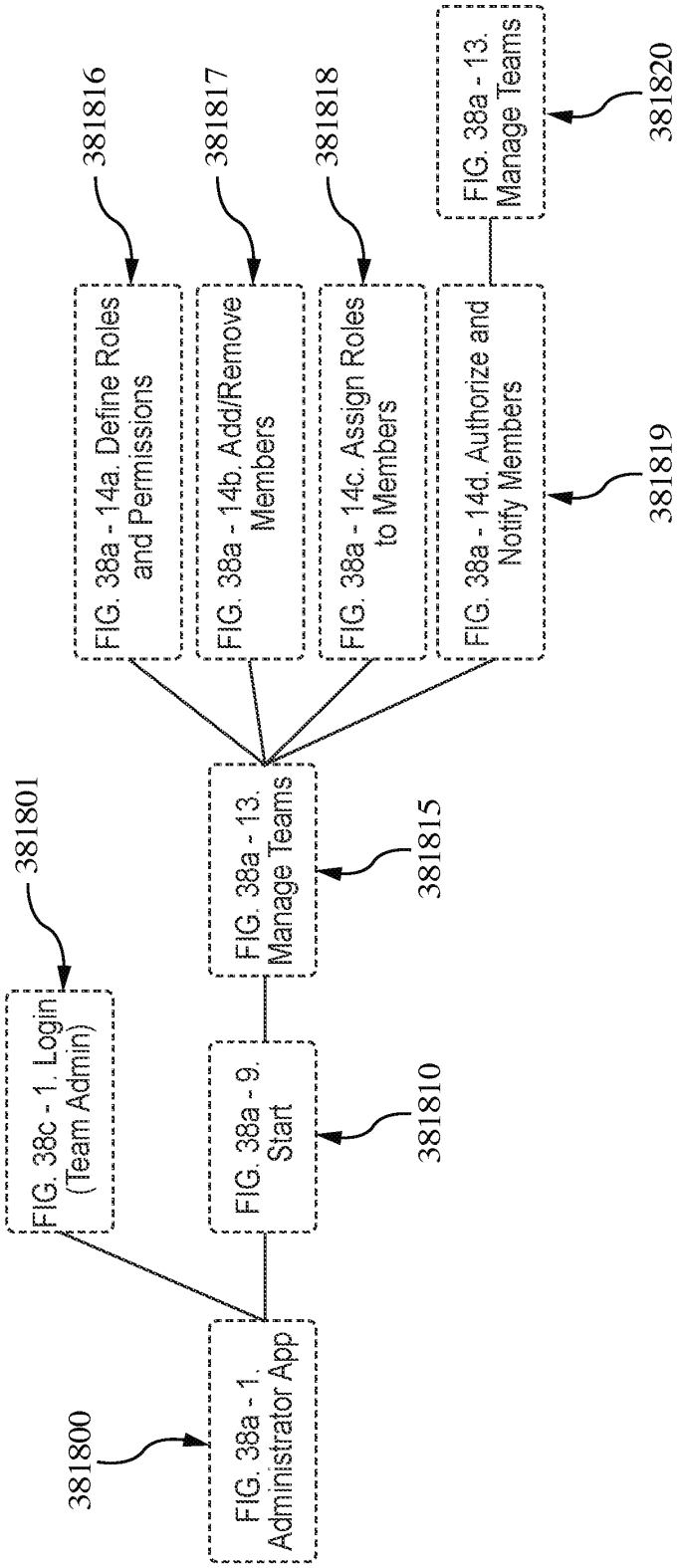
381800
FIG. 38a - 1. Administrator App
381801
FIG. 38c - 1. Login (Team Admin)
FIG. 38a - 9. Start
381810
FIG. 38a - 13. Manage Teams
381815
381816
FIG. 38a - 14a. Define Roles and Permissions
381817
FIG. 38a - 14b. Add/Remove Members
381818
FIG. 38a - 14c. Assign Roles to Members
FIG. 38a - 14d. Authorize and Notify Members
381819
FIG. 38a - 13. Manage Teams
381820

FIG. 38B

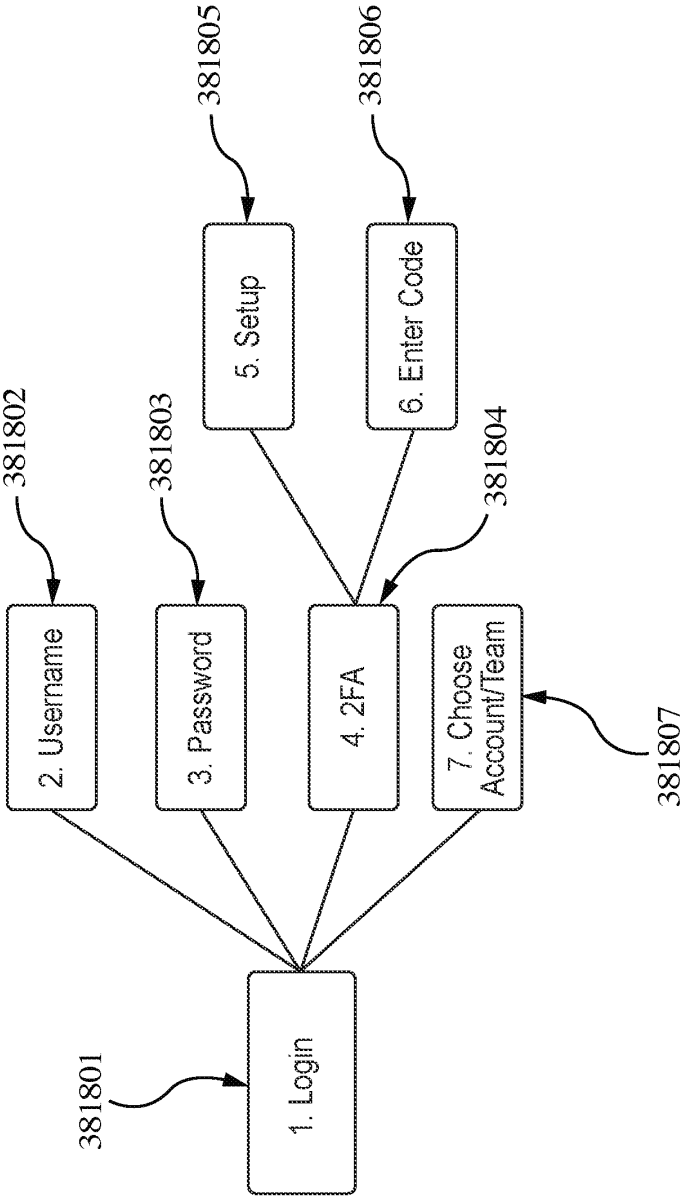
381801
1. Login
381802
2. Username
381803
3. Password
381804
4. 2FA
381805
5. Setup
381806
6. Enter Code
381807
7. Choose Account/Team

FIG. 38C

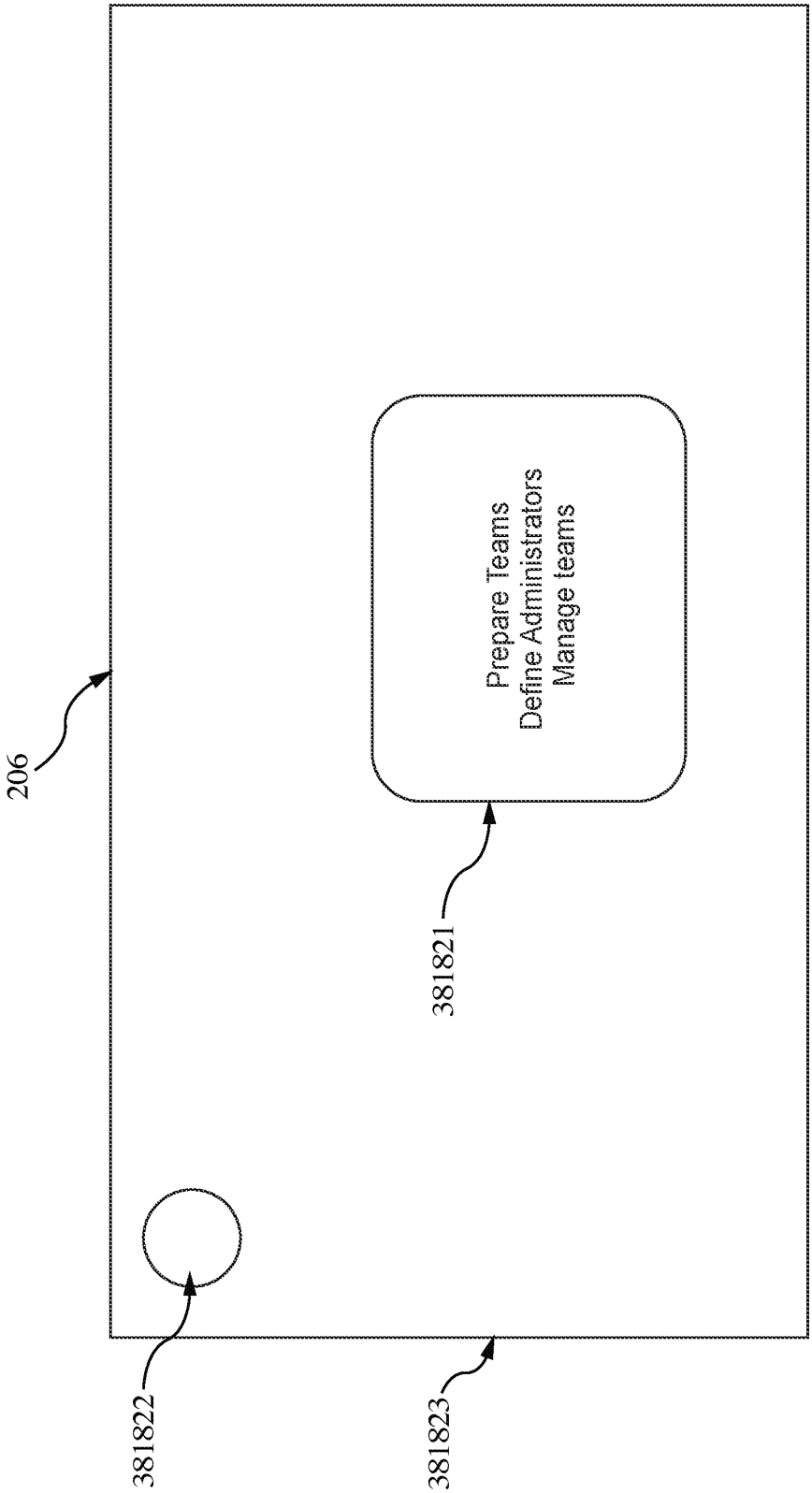
206
Prepare Teams
Define Administrators
Manage teams
381821
381822
381823

FIG. 38D

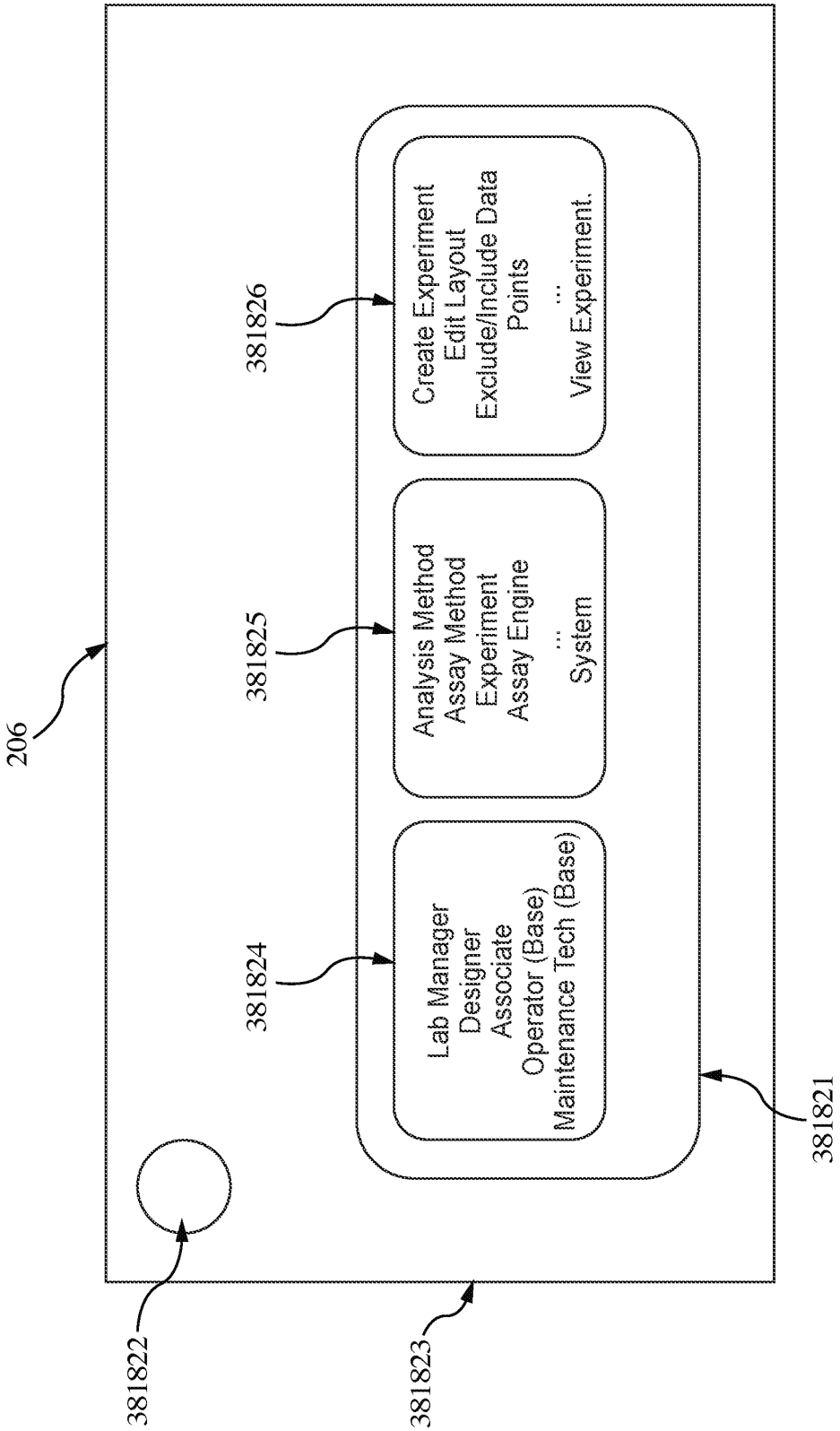
206
381822
381823
381824
Lab Manager
Designer
Associate
Operator (Base)
Maintenance Tech (Base)
381825
Analysis Method
Assay Method
Experiment
Assay Engine
...
System
381826
Create Experiment
Edit Layout
Exclude/Include Data Points
...
View Experiment.
381821

FIG. 38E

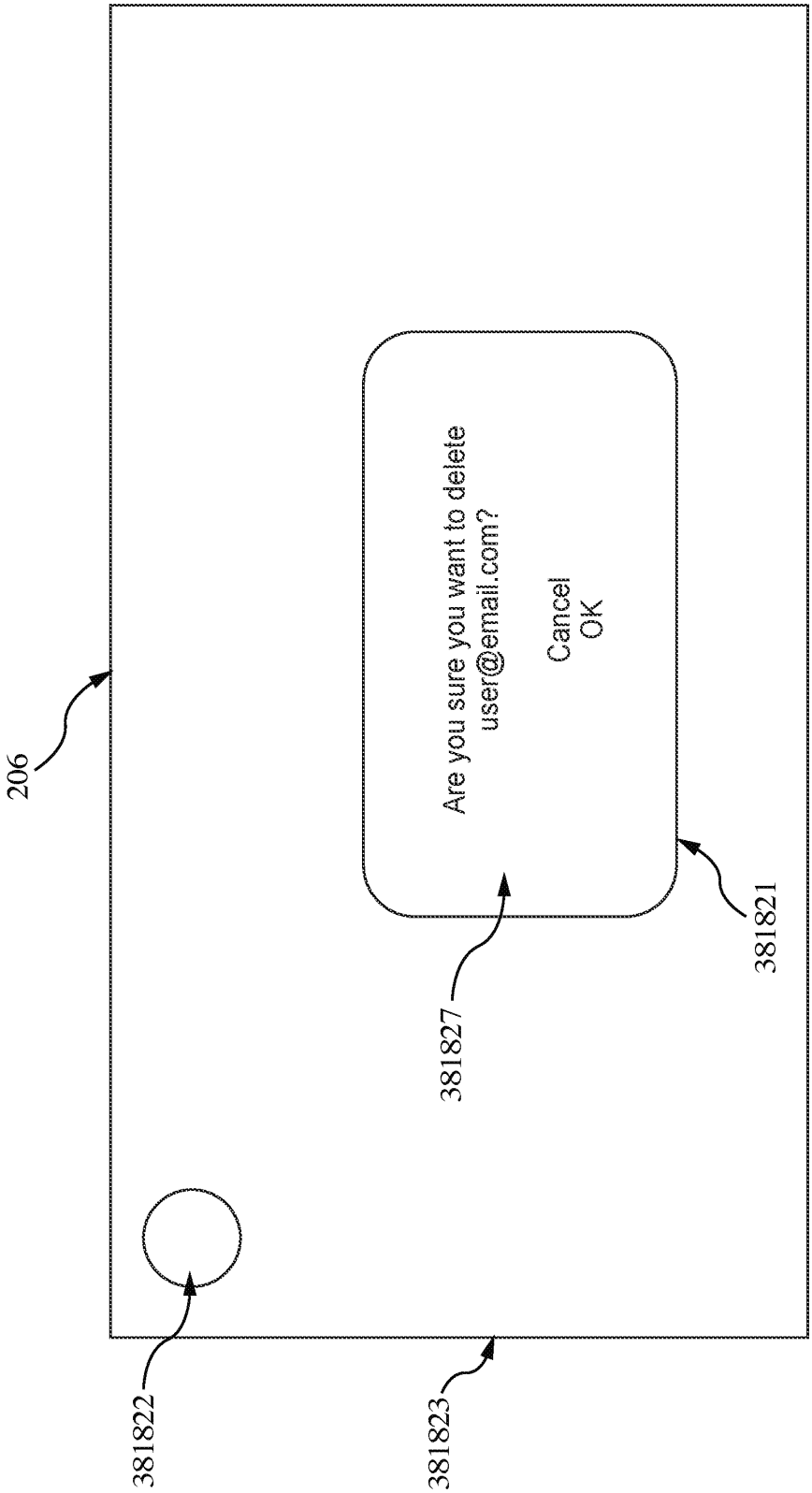
206
Are you sure you want to delete
user@email.com?
Cancel
OK
381821
381827
381822
381823

FIG. 38F

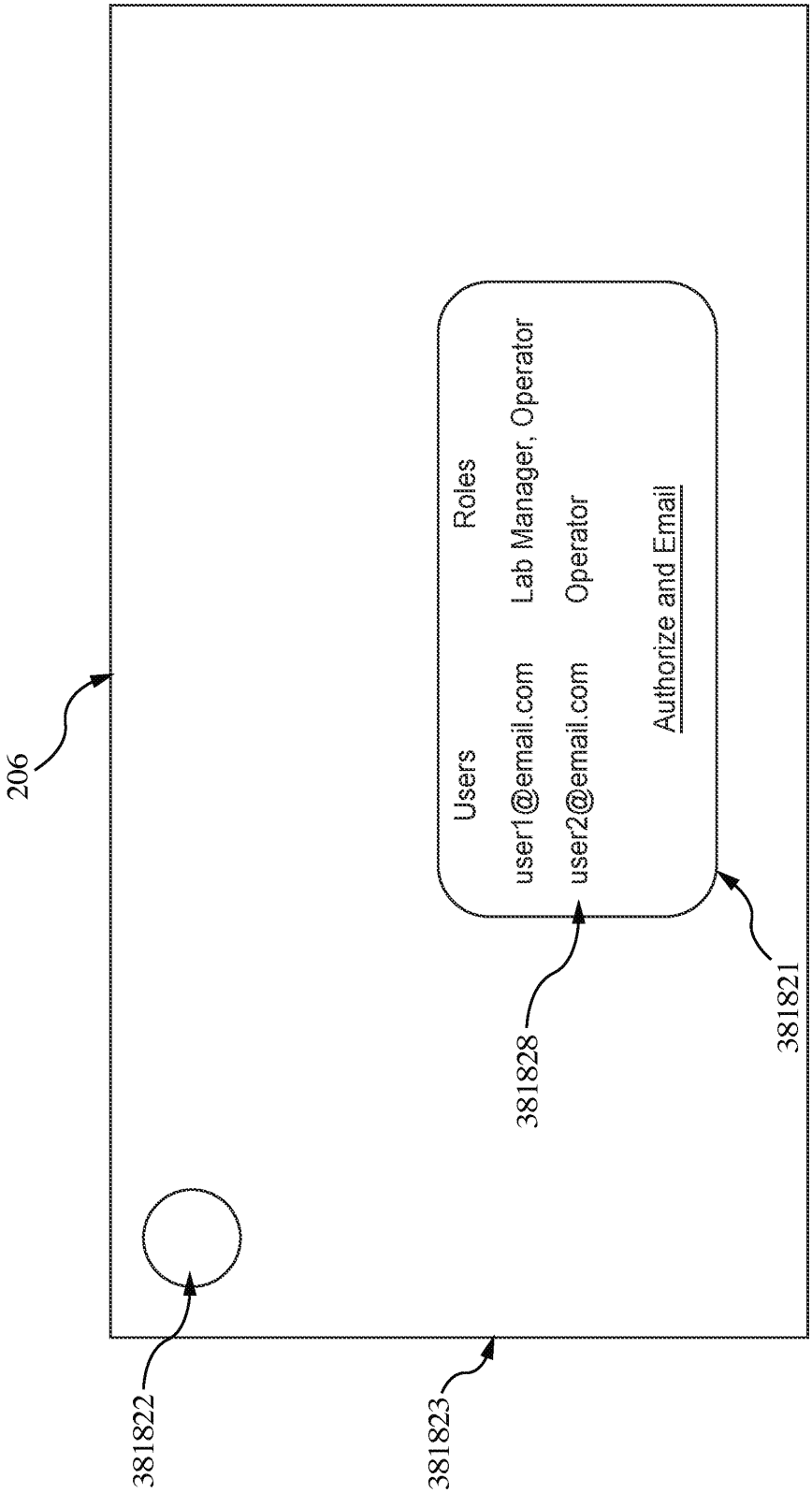
206
Users
Roles
user1@email.com
Lab Manager, Operator
user2@email.com
Operator
Authorize and Email
381828
381821
381822
381823

FIG. 38G

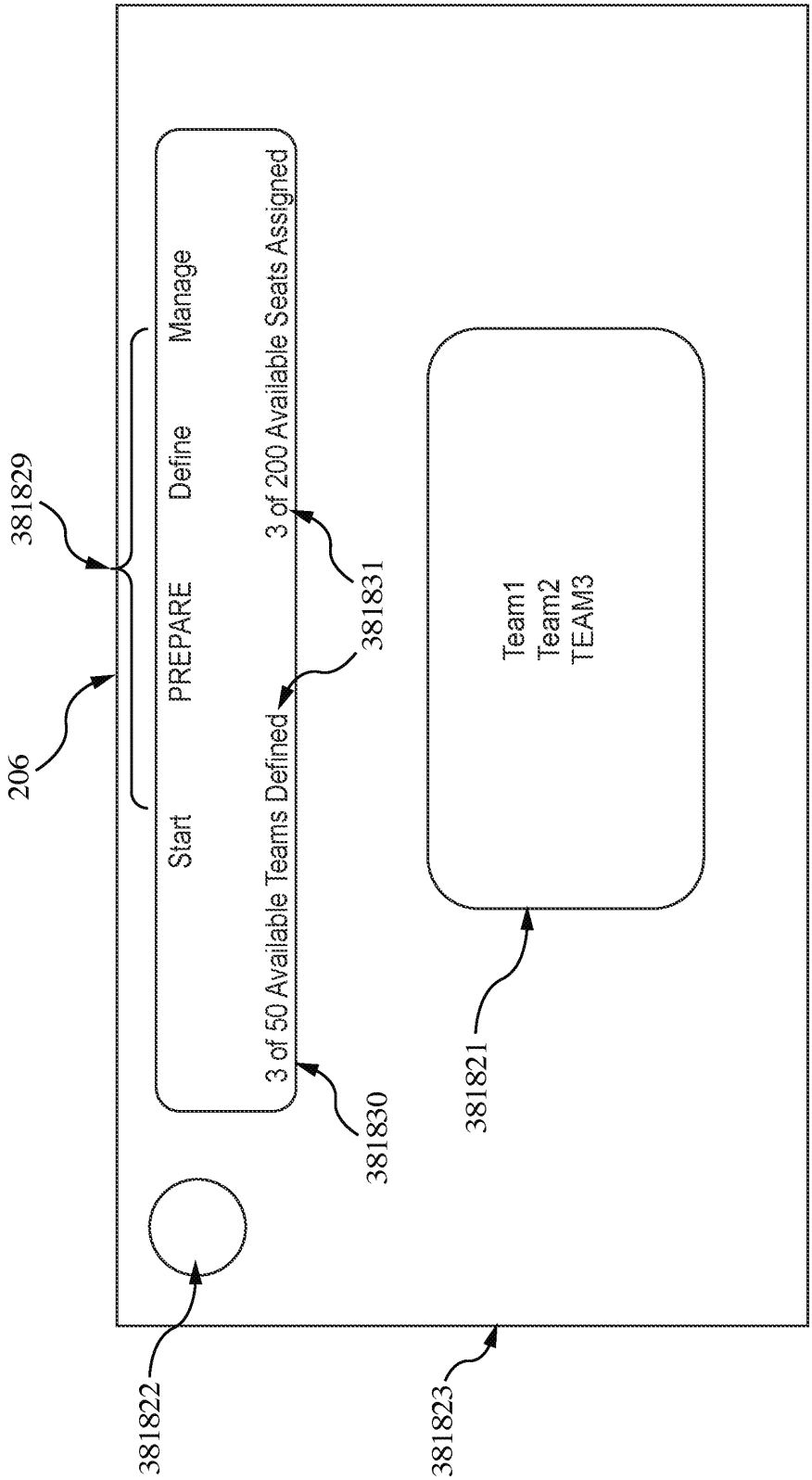
381829
206
Start
PREPARE
Define
Manage
3 of 50 Available Teams Defined
3 of 200 Available Seats Assigned
381831
381830
Team1
Team2
TEAM3
381821
381822
381823

FIG. 38H

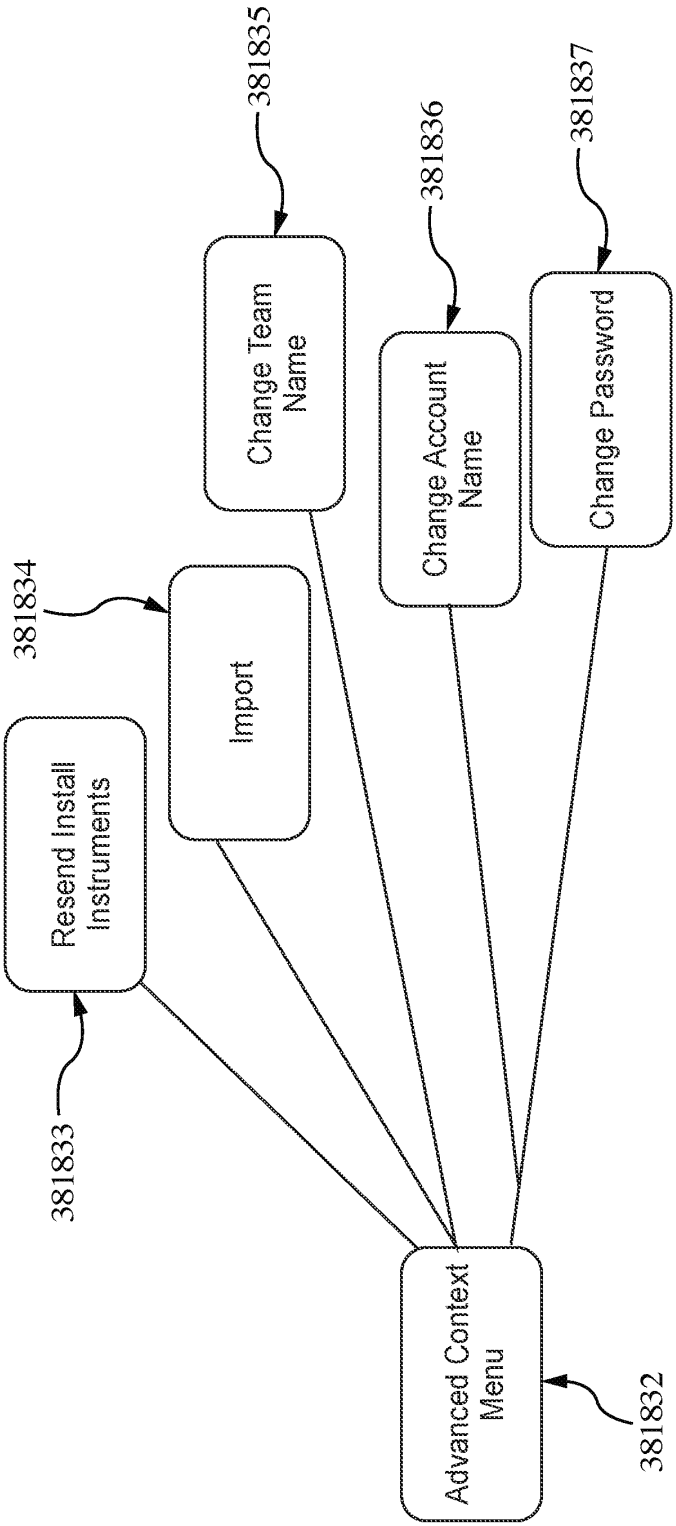
Resend Install Instruments
381833
Import
381834
Change Team Name
381835
Change Account Name
381836
Change Password
381837
Advanced Context Menu
381832

FIG. 38I

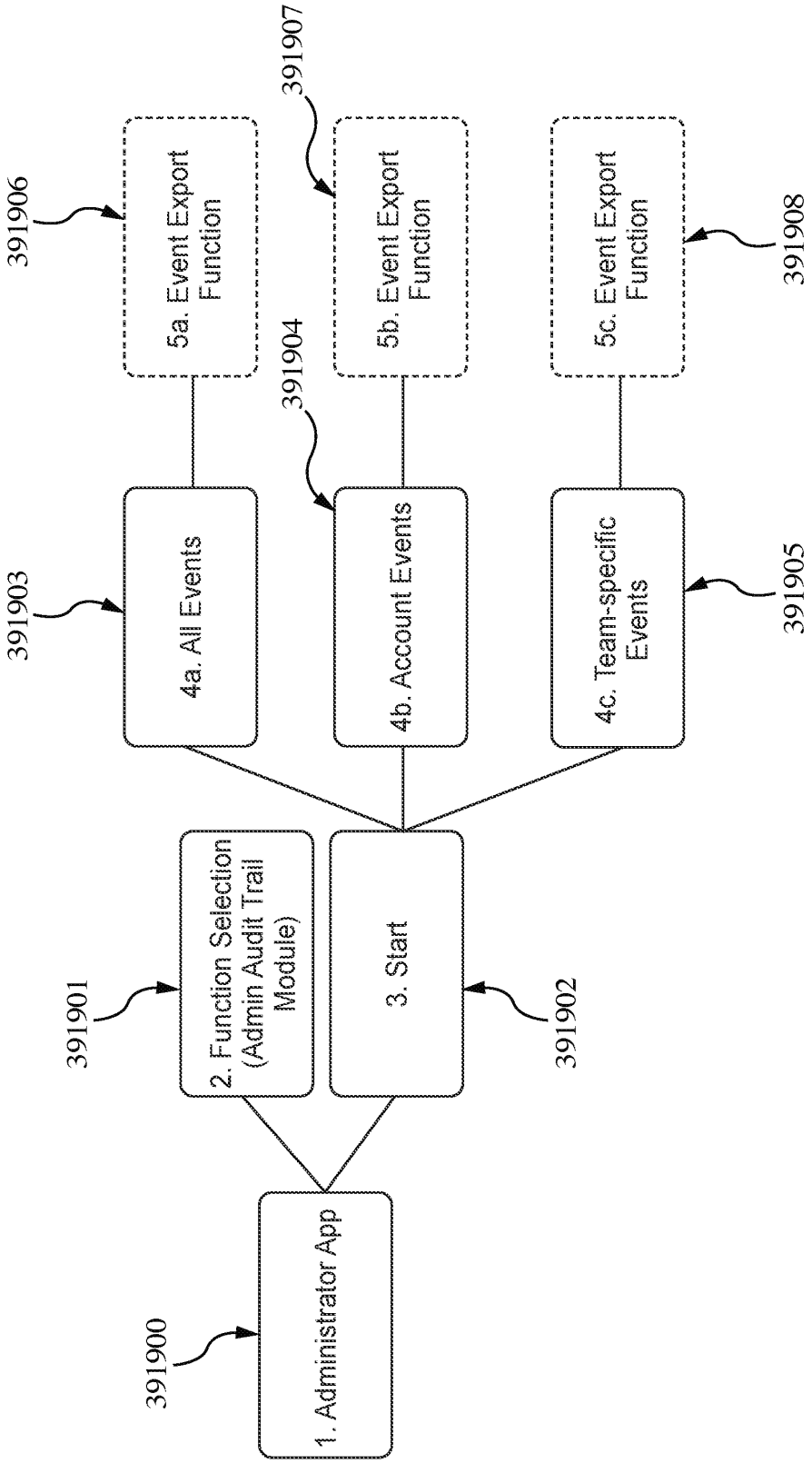
391900
1. Administrator App
391901
2. Function Selection (Admin Audit Trail Module)
3. Start
391902
391903
4a. All Events
391904
4b. Account Events
4c. Team-specific Events
391905
391906
5a. Event Export Function
391907
5b. Event Export Function
5c. Event Export Function
391908

FIG. 39A

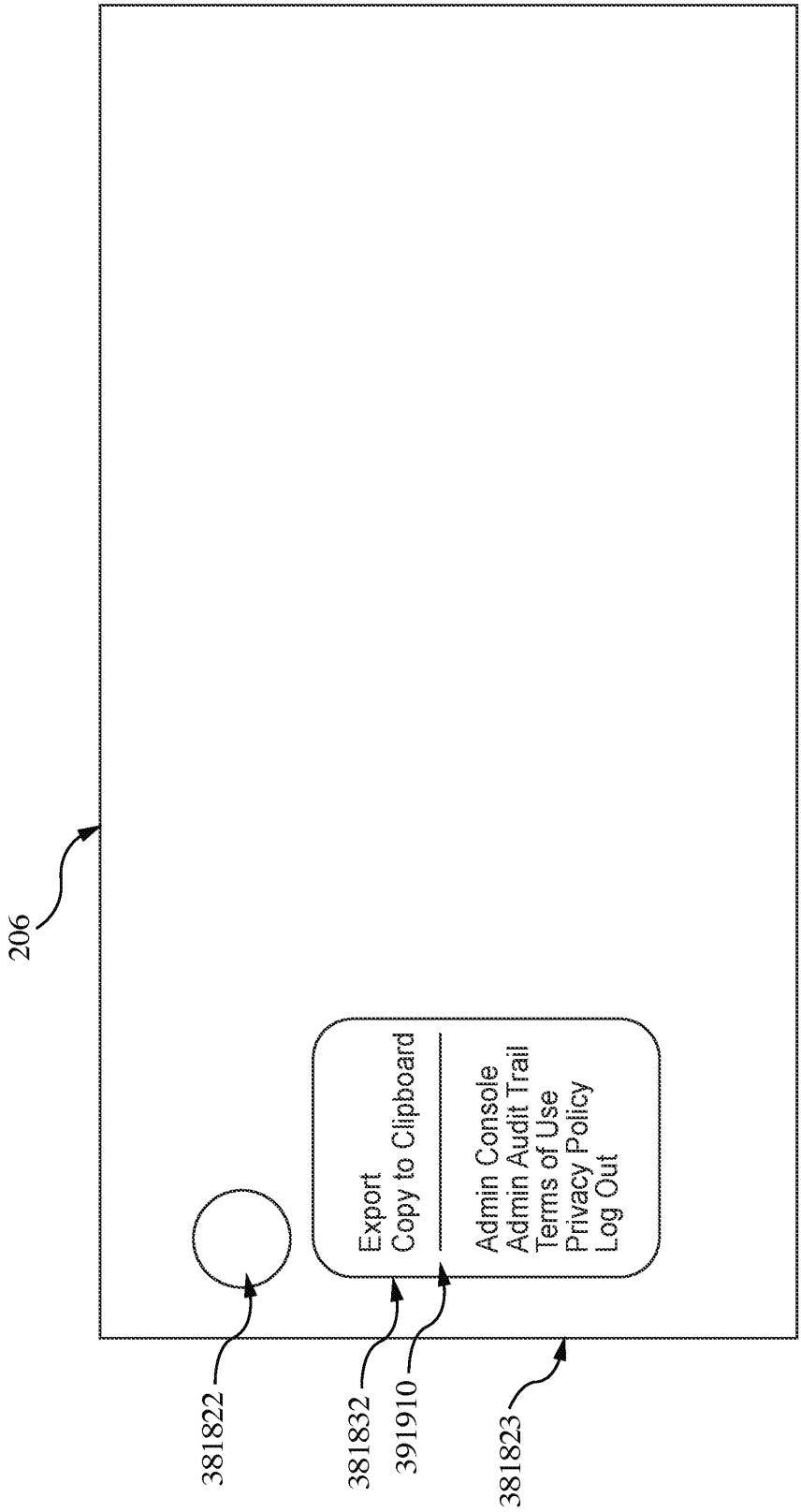
206
381822
Export
Copy to Clipboard
Admin Console
Admin Audit Trail
Terms of Use
Privacy Policy
Log Out
381832
391910
381823

FIG. 39B

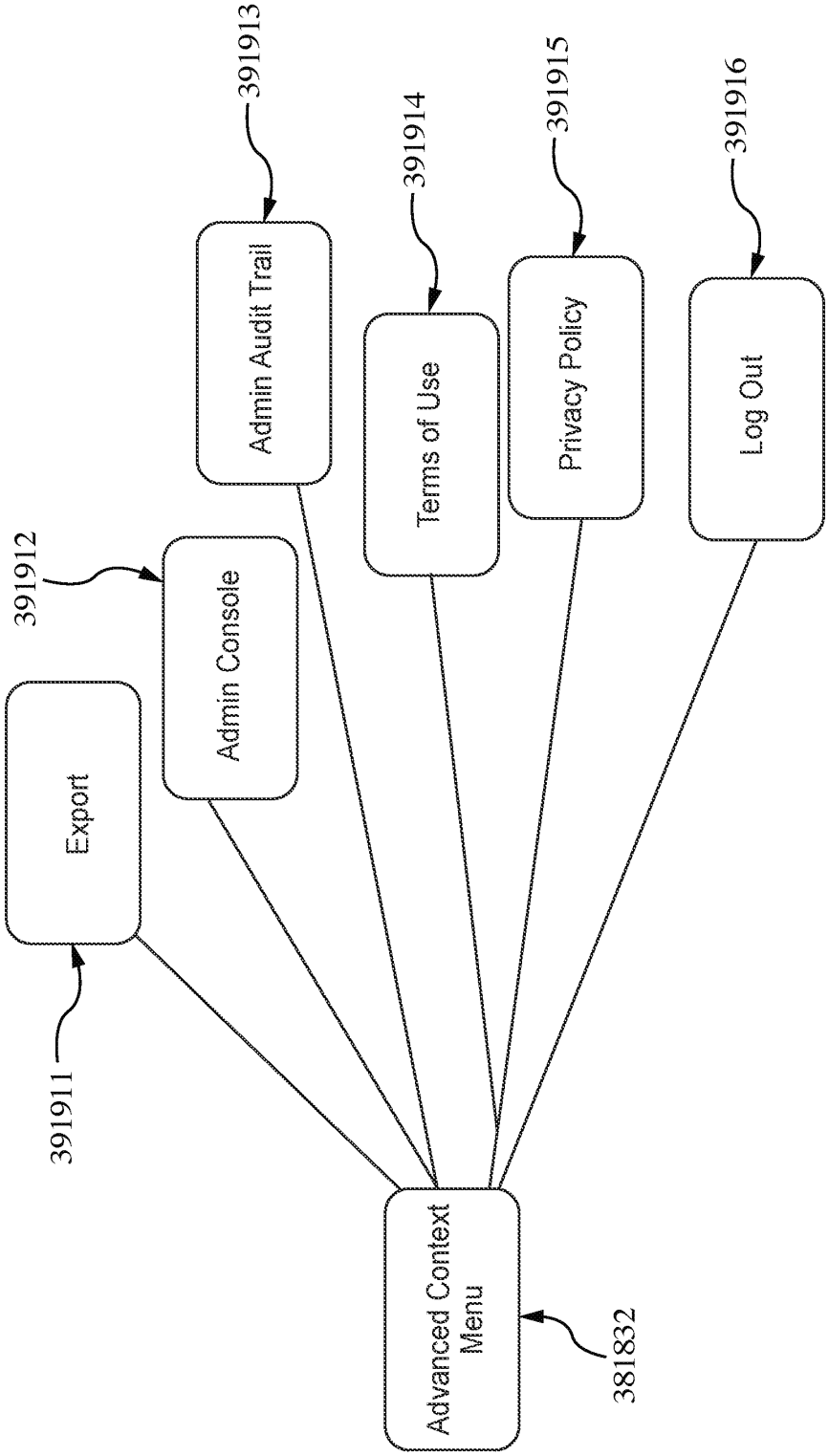
391911
Export
391912
Admin Console
391913
Admin Audit Trail
391914
Terms of Use
391915
Privacy Policy
391916
Log Out
Advanced Context Menu
381832

FIG. 39C

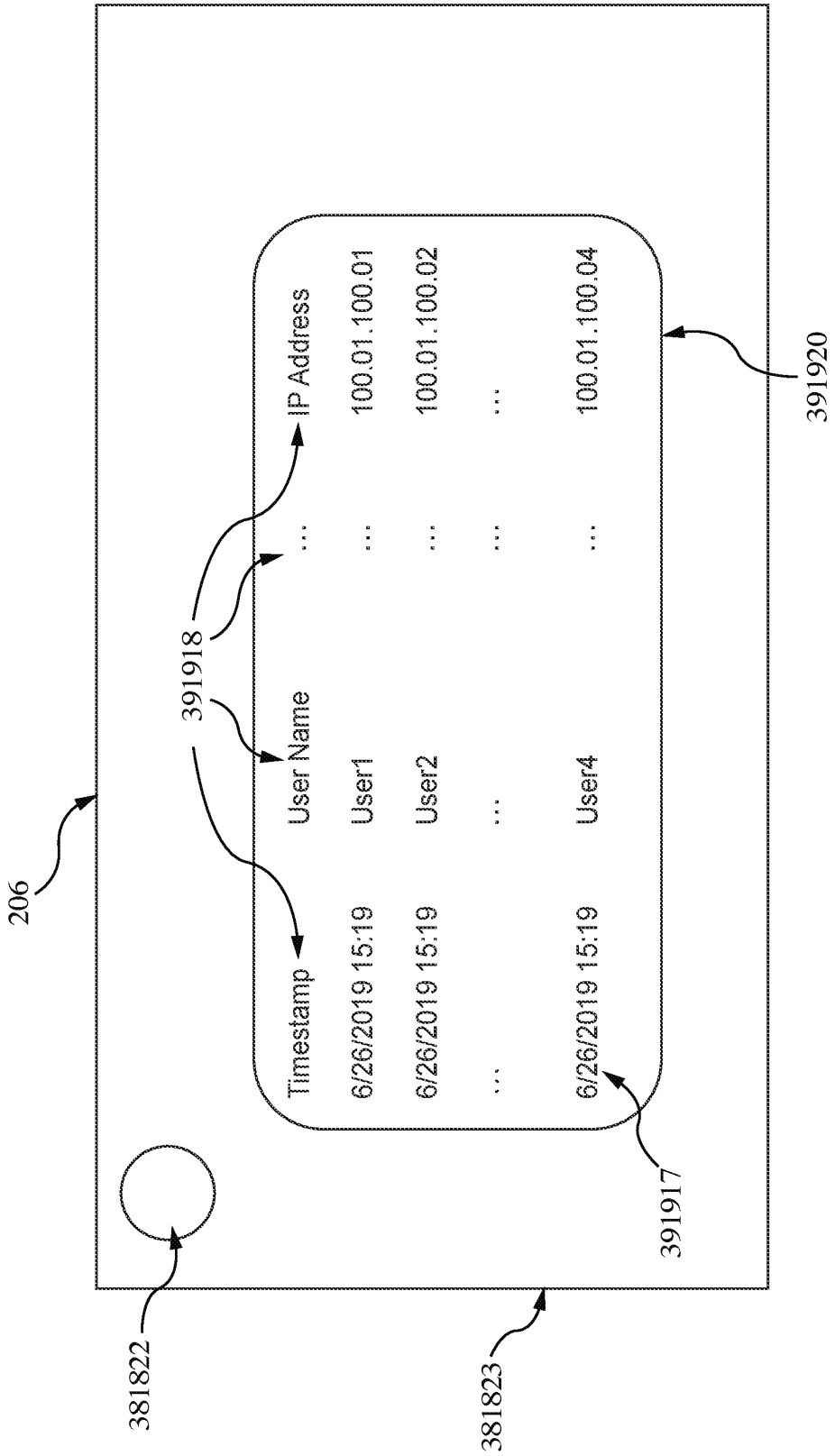
206
381822
381823
391918
391917
391920
Timestamp
User Name
IP Address
6/26/2019 15:19
User1
100.01.100.01
6/26/2019 15:19
User2
100.01.100.02
...
...
...
...
6/26/2019 15:19
User4
100.01.100.04

FIG. 39D

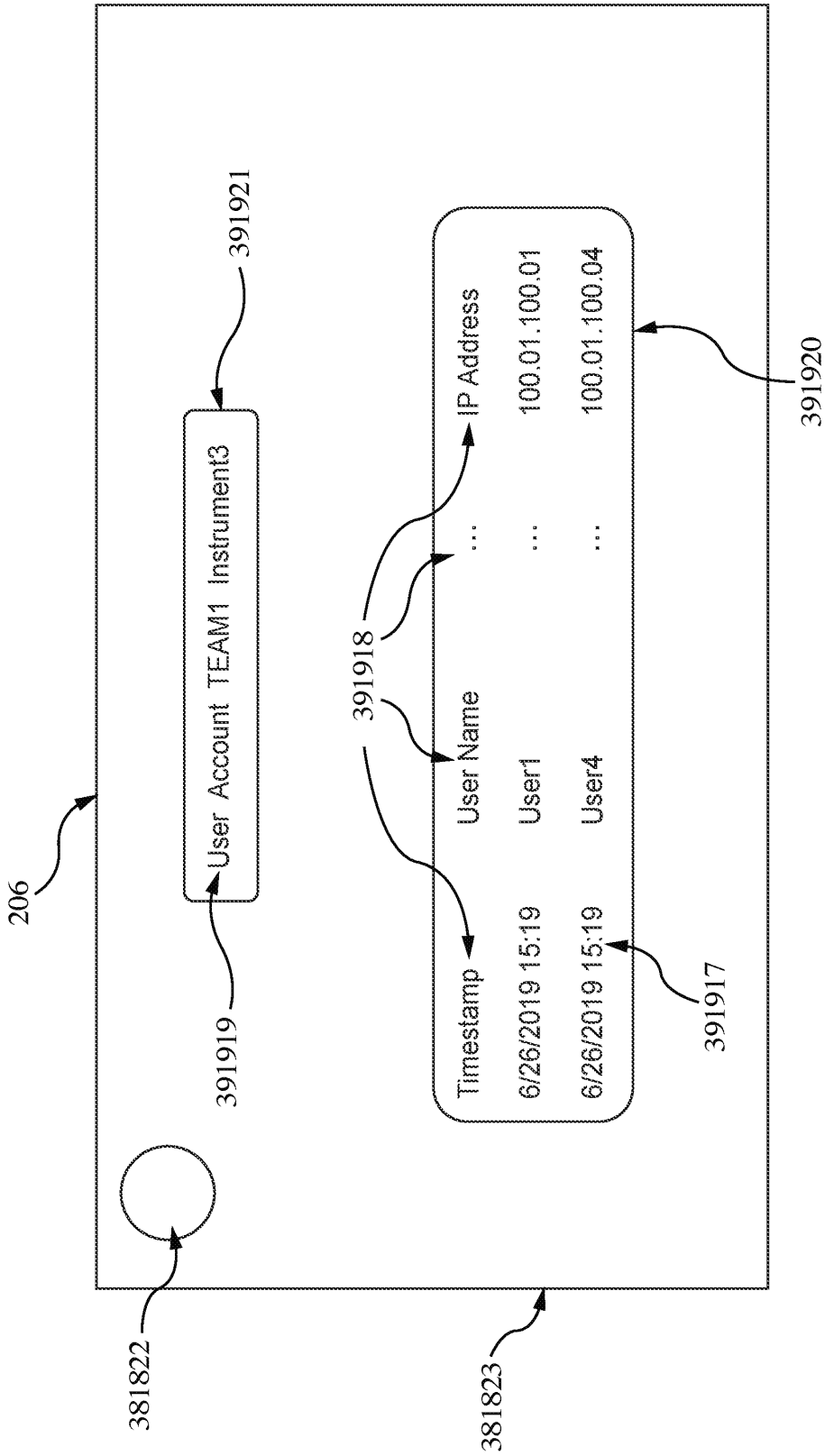
206
User Account TEAM1 Instrument3
391921
391919
Timestamp
User Name
IP Address
6/26/2019 15:19
User1
100.01.100.01
6/26/2019 15:19
User4
100.01.100.04
391918
391917
391920
381822
381823

FIG. 39E

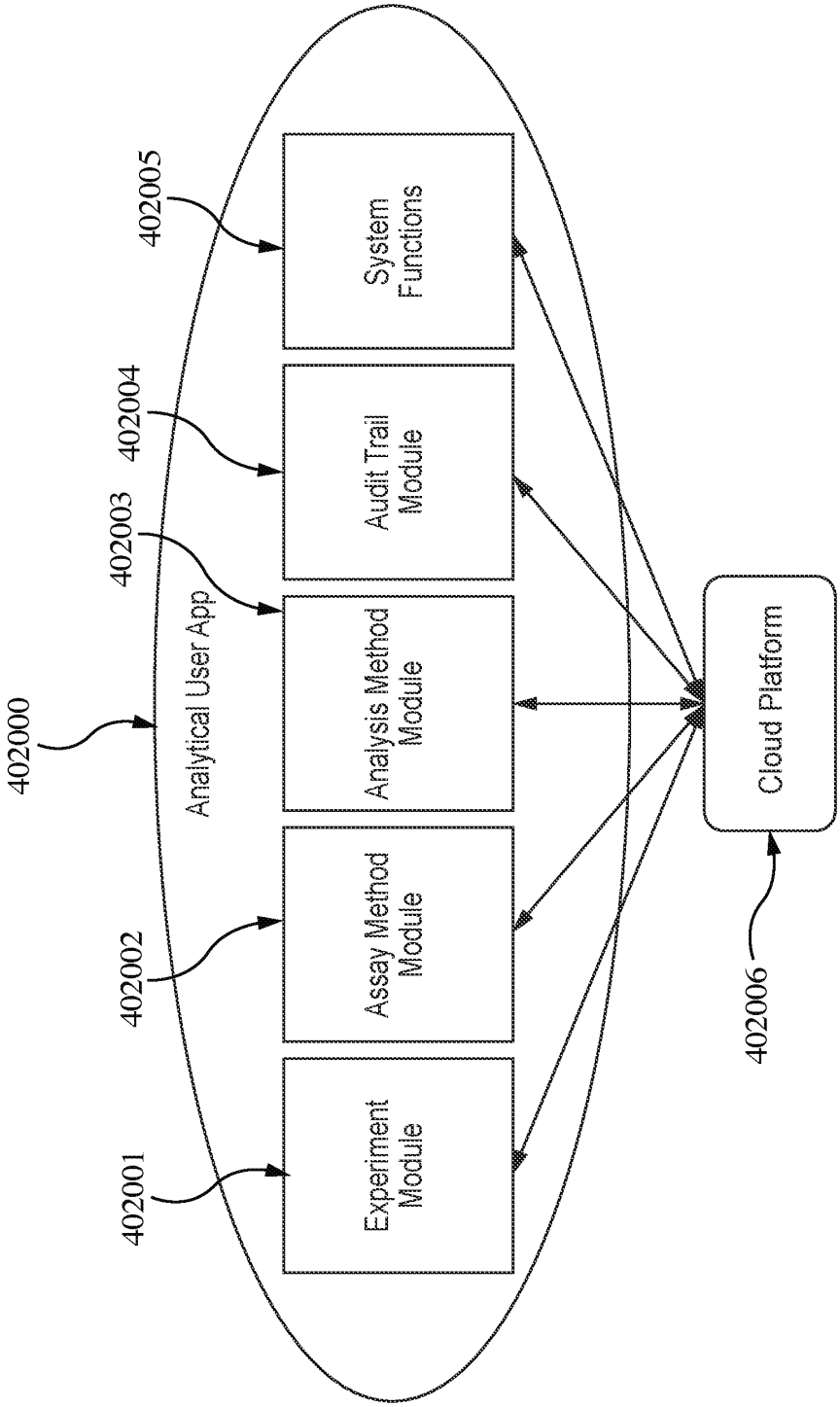
402000
Analytical User App
402001
Experiment Module
402002
Assay Method Module
402003
Analysis Method Module
402004
Audit Trail Module
402005
System Functions
402006
Cloud Platform

FIG. 40

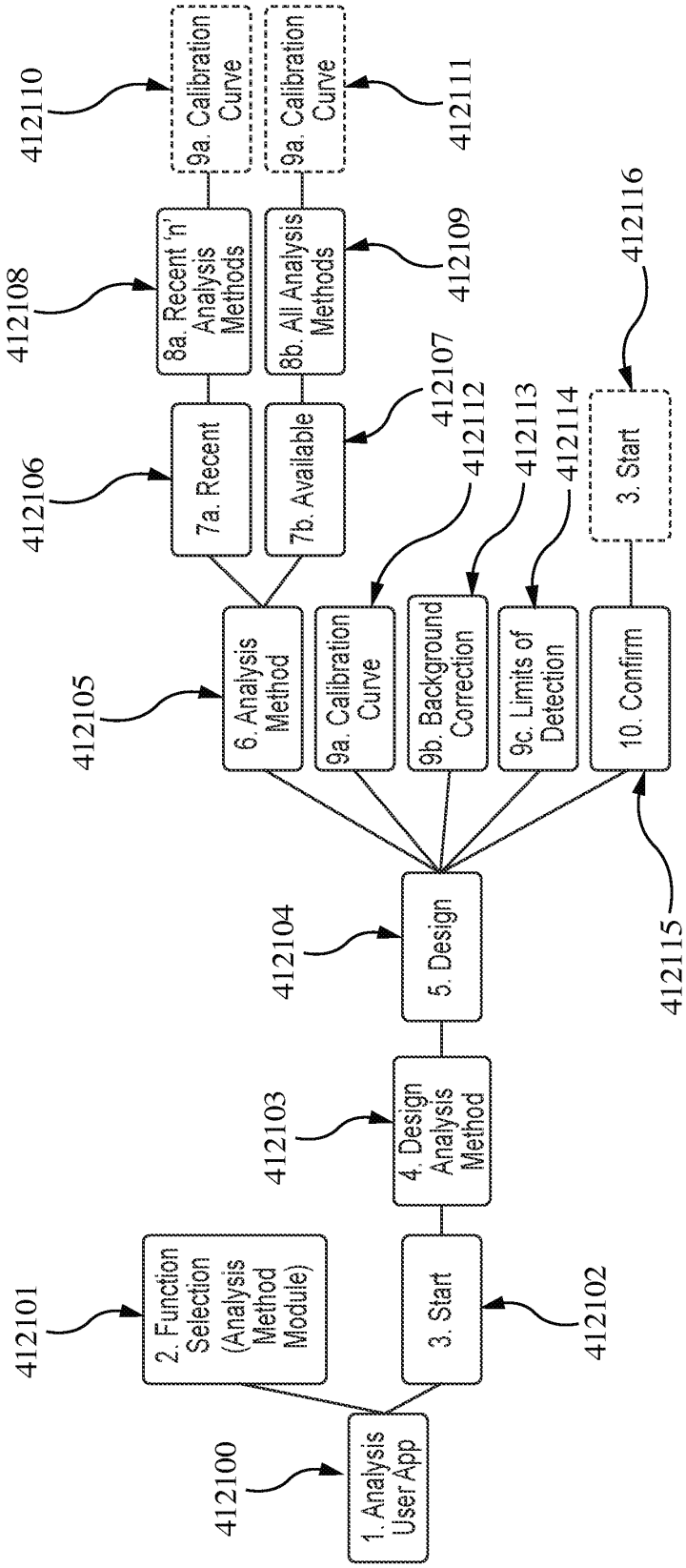
412100
1. Analysis User App
412101
2. Function Selection (Analysis Method Module)
412102
3. Start
412103
4. Design Analysis Method
412104
5. Design
412105
6. Analysis Method
412106
7a. Recent
7b. Available
412107
412108
8a. Recent 'n' Analysis Methods
8b. All Analysis Methods
412109
412110
9a. Calibration Curve
9a. Calibration Curve
412111
412112
9a. Calibration Curve
412113
9b. Background Correction
412114
9c. Limits of Detection
412115
10. Confirm
412116
3. Start

FIG. 41

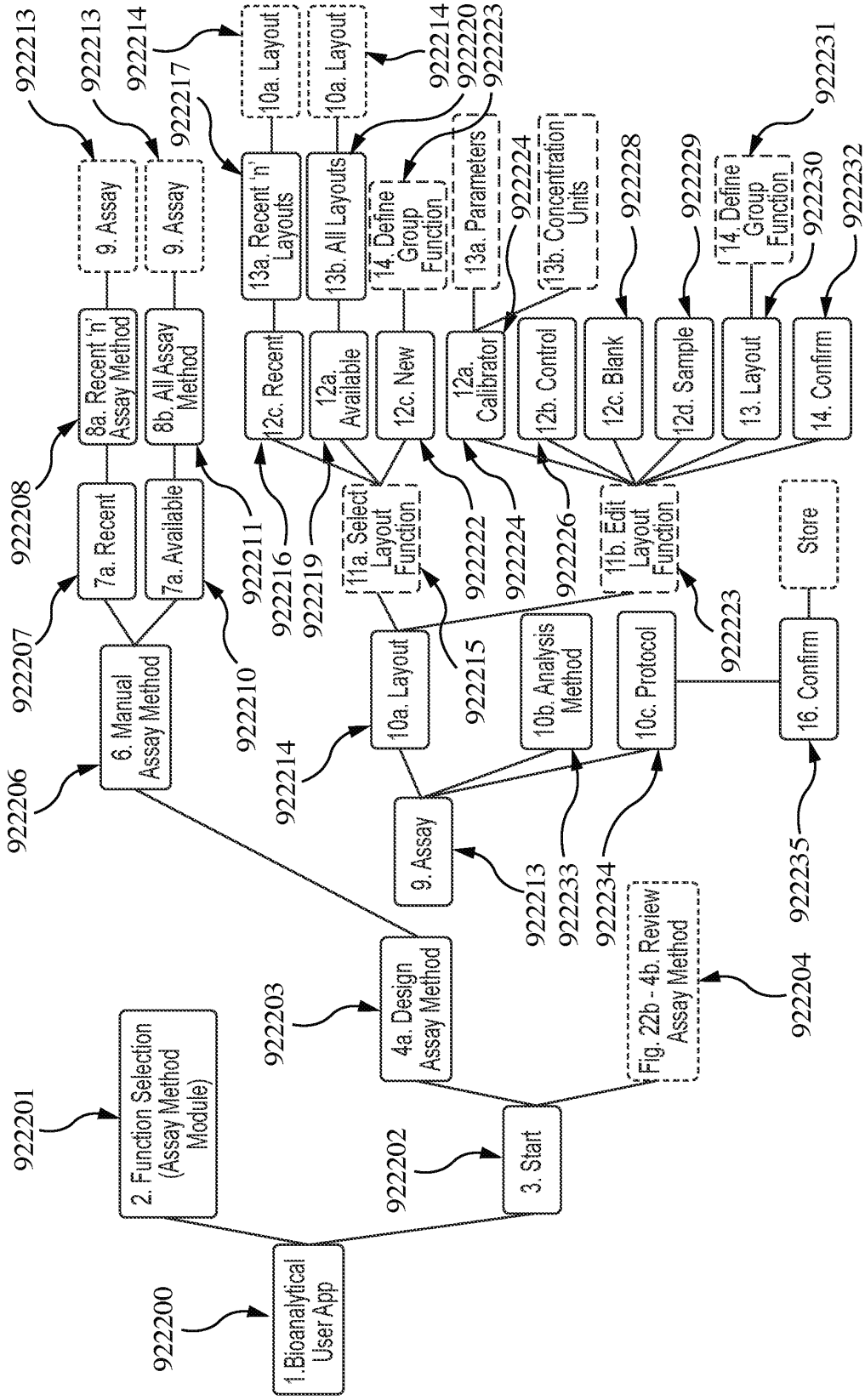
1.Bioanalytical User App
2. Function Selection (Assay Method Module)
3. Start
4a. Design Assay Method
Fig. 22b - 4b. Review Assay Method
6. Manual Assay Method
7a. Recent
7a. Available
8a. Recent 'n' Assay Method
8b. All Assay Method
9. Assay
9. Assay
9. Assay
10a. Layout
10a. Layout
10a. Layout
10b. Analysis Method
10c. Protocol
11a. Select Layout Function
11b. Edit Layout Function
12a. Calibrator
12a. Available
12b. Control
12c. Recent
12c. New
12c. Blank
12d. Sample
13a. Recent 'n' Layouts
13a. Parameters
13b. All Layouts
13b. Concentration Units
13. Layout
14. Define Group Function
14. Define Group Function
14. Confirm
16. Confirm
Store
922200
922201
922202
922203
922204
922206
922207
922208
922210
922211
922213
922213
922213
922214
922214
922214
922215
922216
922217
922219
922220
922222
922223
922223
922224
922224
922226
922228
922229
922230
922231
922232
922233
922234
922235

FIG. 42A

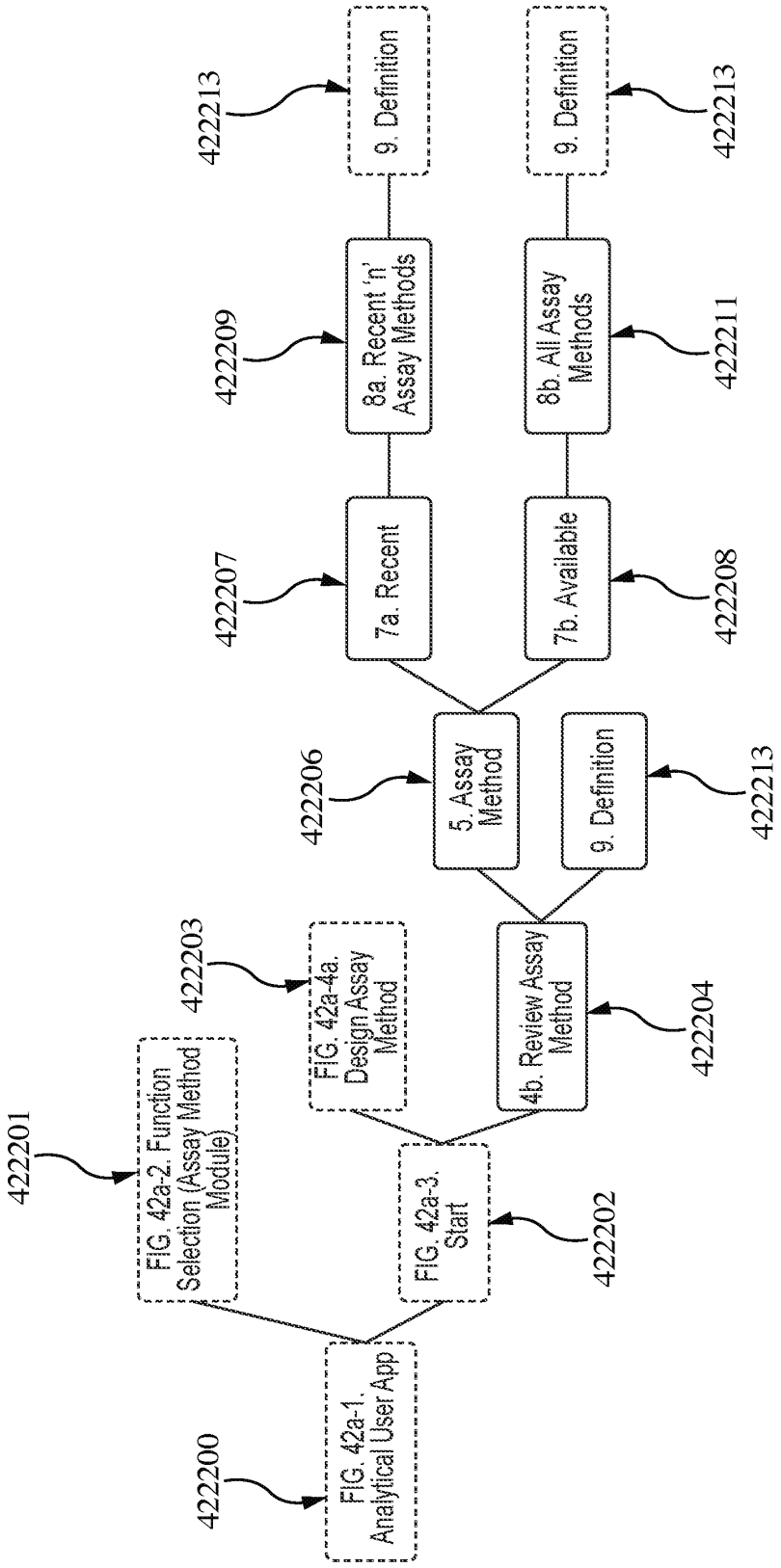
422200
FIG. 42a-1. Analytical User App
422201
FIG. 42a-2. Function Selection (Assay Method Module)
422202
FIG. 42a-3. Start
422203
FIG. 42a-4a. Design Assay Method
422204
4b. Review Assay Method
422206
5. Assay Method
422207
7a. Recent
422208
7b. Available
422209
8a. Recent 'n' Assay Methods
422211
8b. All Assay Methods
422213
9. Definition
422213
9. Definition
422213

FIG. 42B

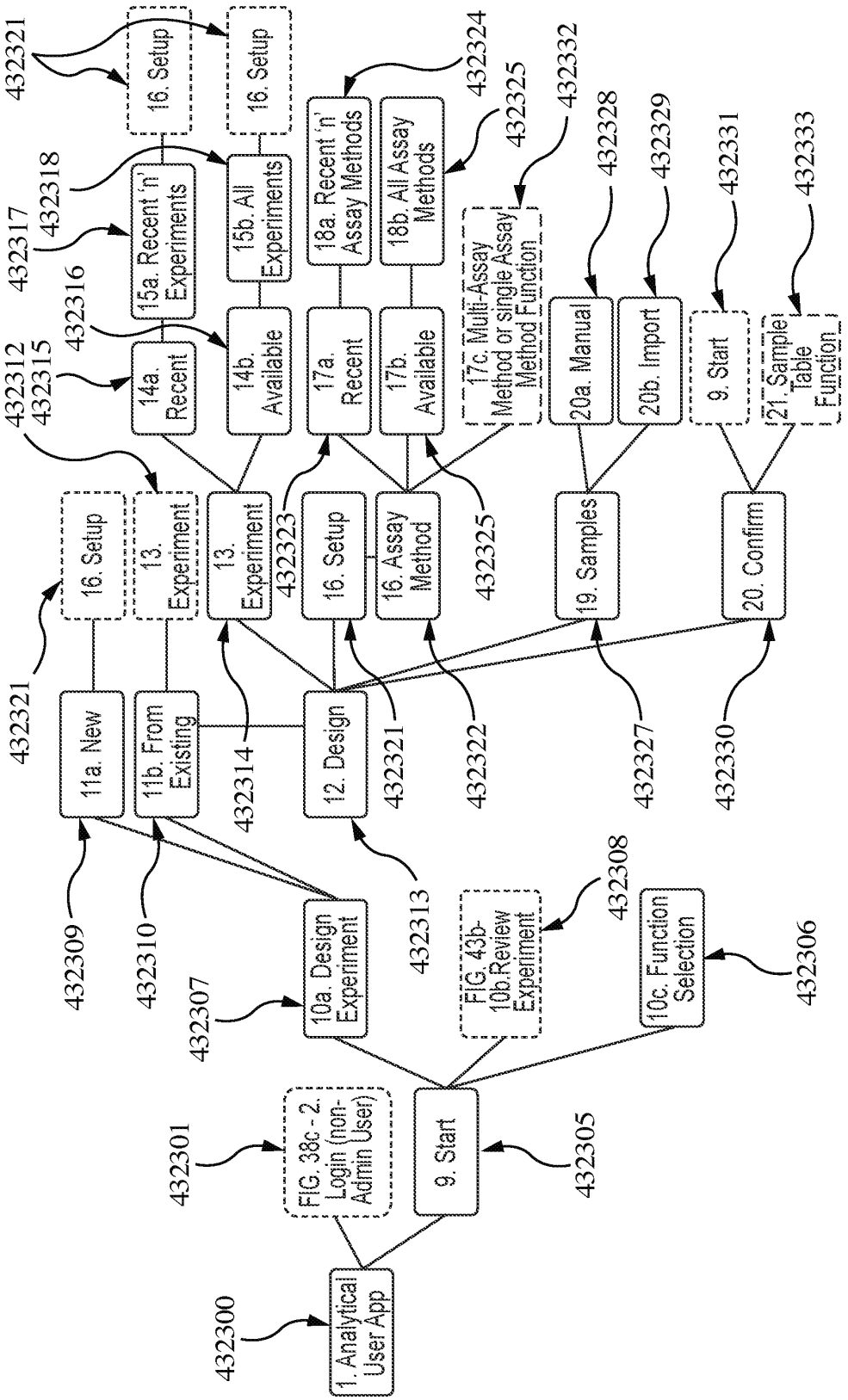
1. Analytical User App
432300
FIG. 38c - 2. Login (non-Admin User)
432301
9. Start
432305
10a. Design Experiment
432307
FIG. 43b-10b.Review Experiment
432308
10c. Function Selection
432306
11a. New
432309
11b. From Existing
432310
12. Design
432313
13. Experiment
432314
16. Setup
432321
14a. Recent
432312
432315
14b. Available
432316
15a. Recent 'n' Experiments
432317
15b. All Experiments
432318
16. Setup
432321
16. Setup
432321
13. Experiment
432323
16. Assay Method
432322
17a. Recent
17b. Available
432325
18a. Recent 'n' Assay Methods
432324
18b. All Assay Methods
432325
17c. Multi-Assay Method or single Assay Method Function
432332
19. Samples
432327
20a. Manual
432328
20b. Import
432329
20. Confirm
432330
9. Start
432331
21. Sample Table Function
432333

FIG. 43A

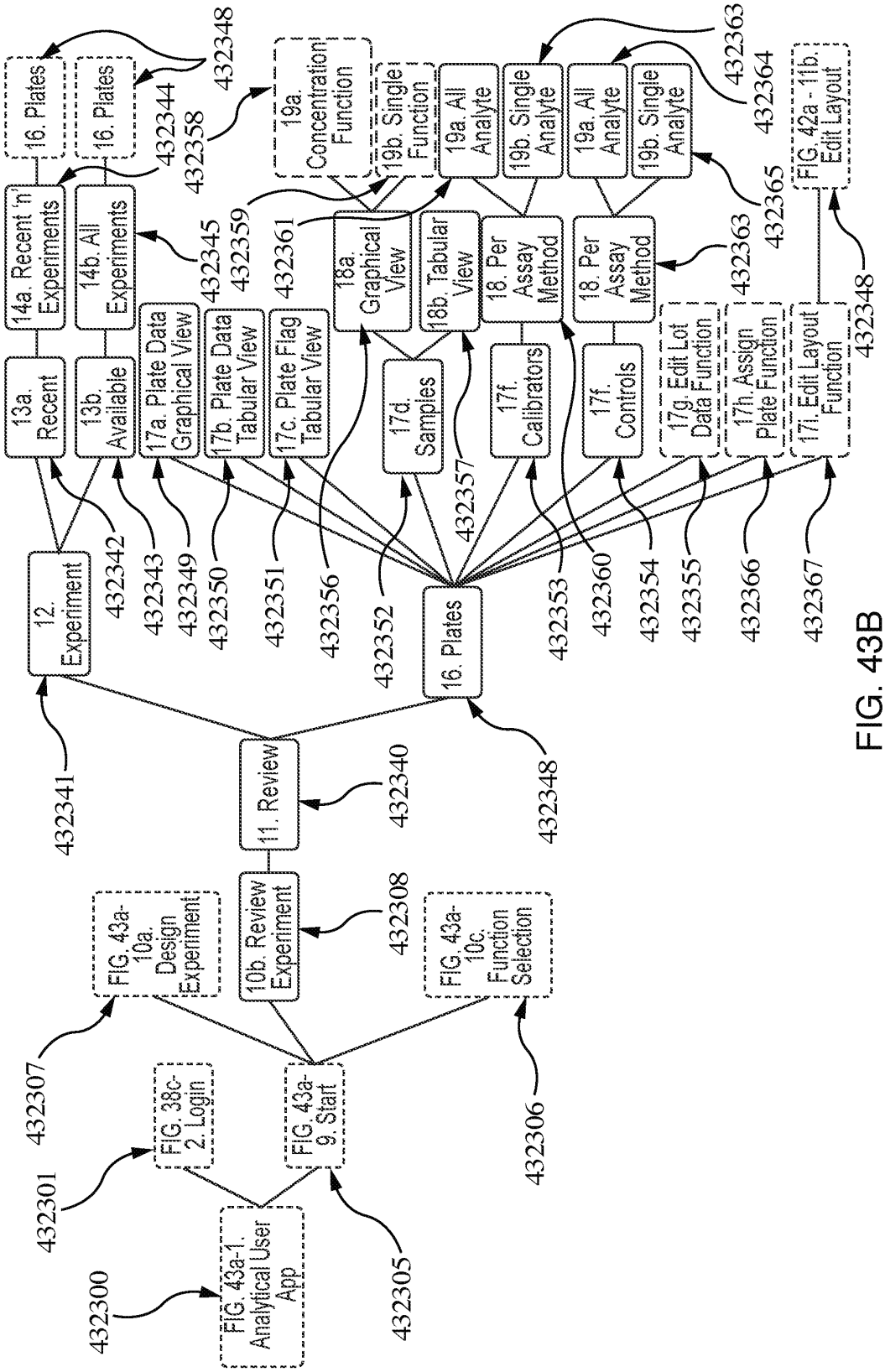
FIG. 43a-1. Analytical User App
FIG. 38c-2. Login
FIG. 43a-9. Start
FIG. 43a-10a. Design Experiment
10b. Review Experiment
FIG. 43a-10c. Function Selection
11. Review
12. Experiment
16. Plates
13a. Recent
13b. Available
14a. Recent 'n' Experiments
14b. All Experiments
16. Plates
16. Plates
17a. Plate Data Graphical View
17b. Plate Data Tabular View
17c. Plate Flag Tabular View
17d. Samples
17f. Calibrators
17f. Controls
17g. Edit Lot Data Function
17h. Assign Plate Function
17i. Edit Layout Function
18a. Graphical View
18b. Tabular View
18. Per Assay Method
18. Per Assay Method
19a. Concentration Function
19b. Single Function
19a. All Analyte
19b. Single Analyte
19a. All Analyte
19b. Single Analyte
FIG. 42a - 11b. Edit Layout
432300
432301
432305
432306
432307
432308
432340
432341
432342
432343
432344
432345
432348
432348
432348
432349
432350
432351
432352
432353
432354
432355
432356
432357
432358
432359
432360
432361
432363
432363
432364
432365
432366
432367

FIG. 43B

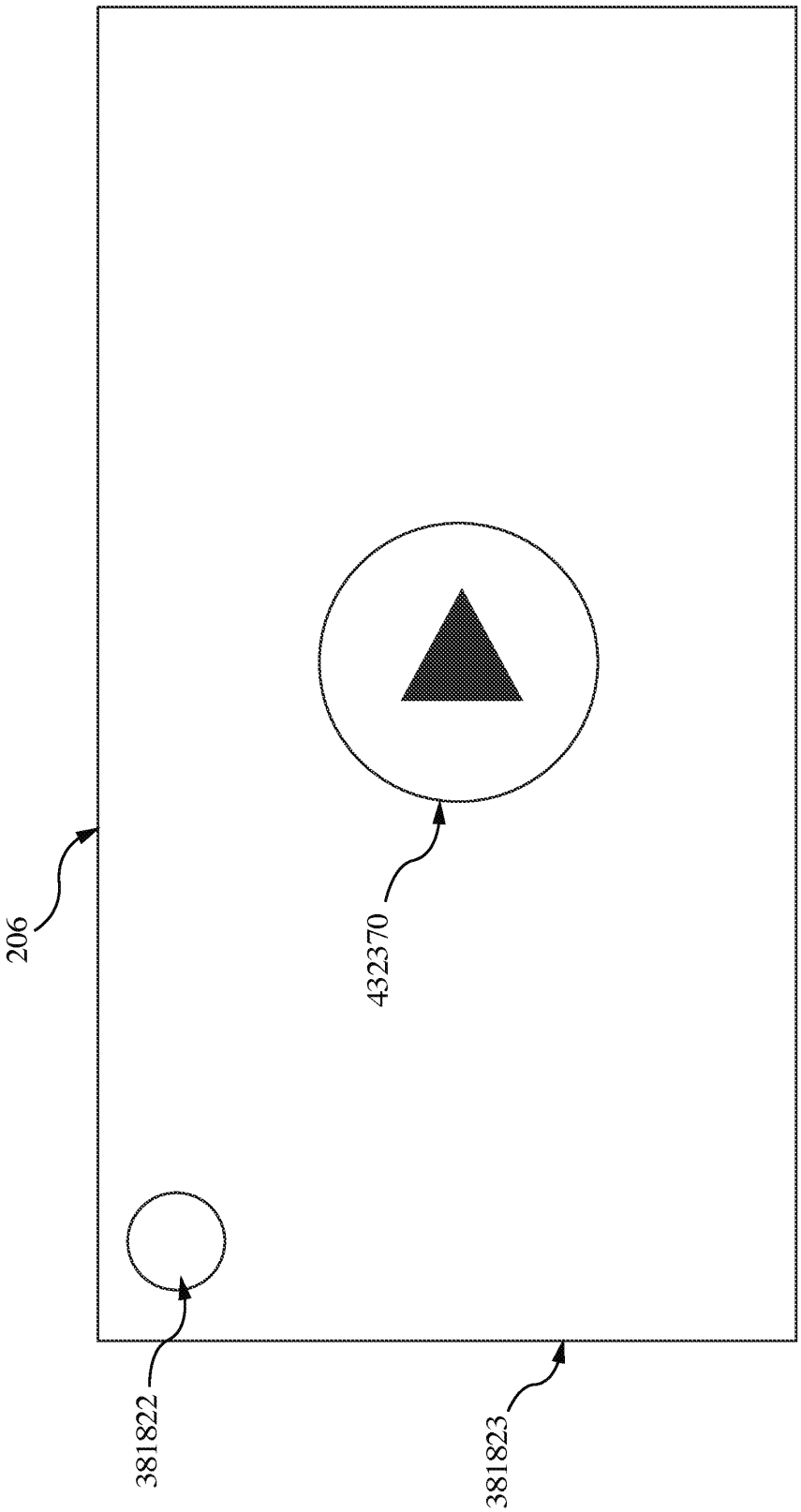

FIG. 43C

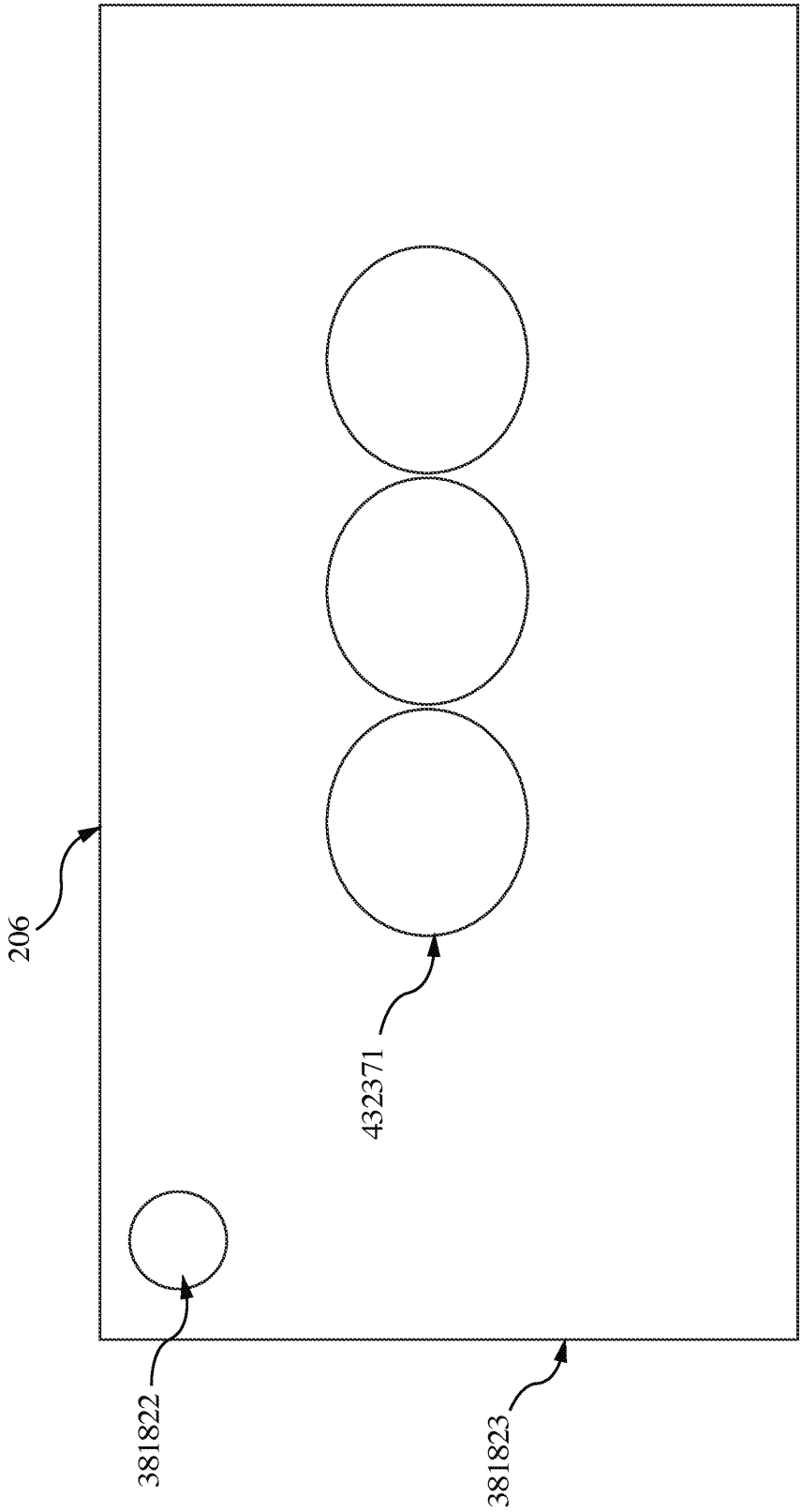

FIG. 43D

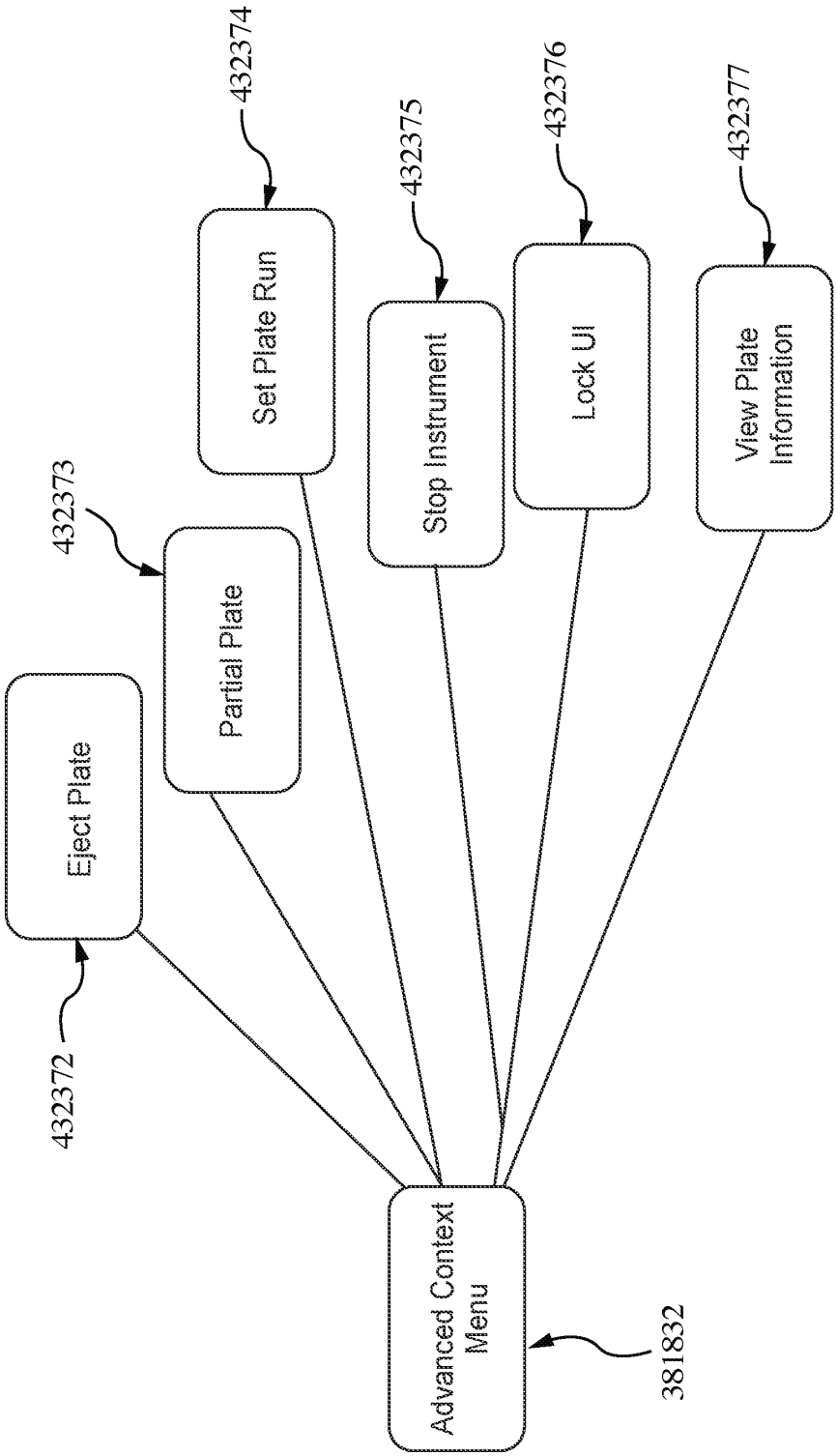
Eject Plate
432372
Partial Plate
432373
Set Plate Run
432374
Stop Instrument
432375
Lock UI
432376
View Plate Information
432377
Advanced Context Menu
381832

FIG. 43E

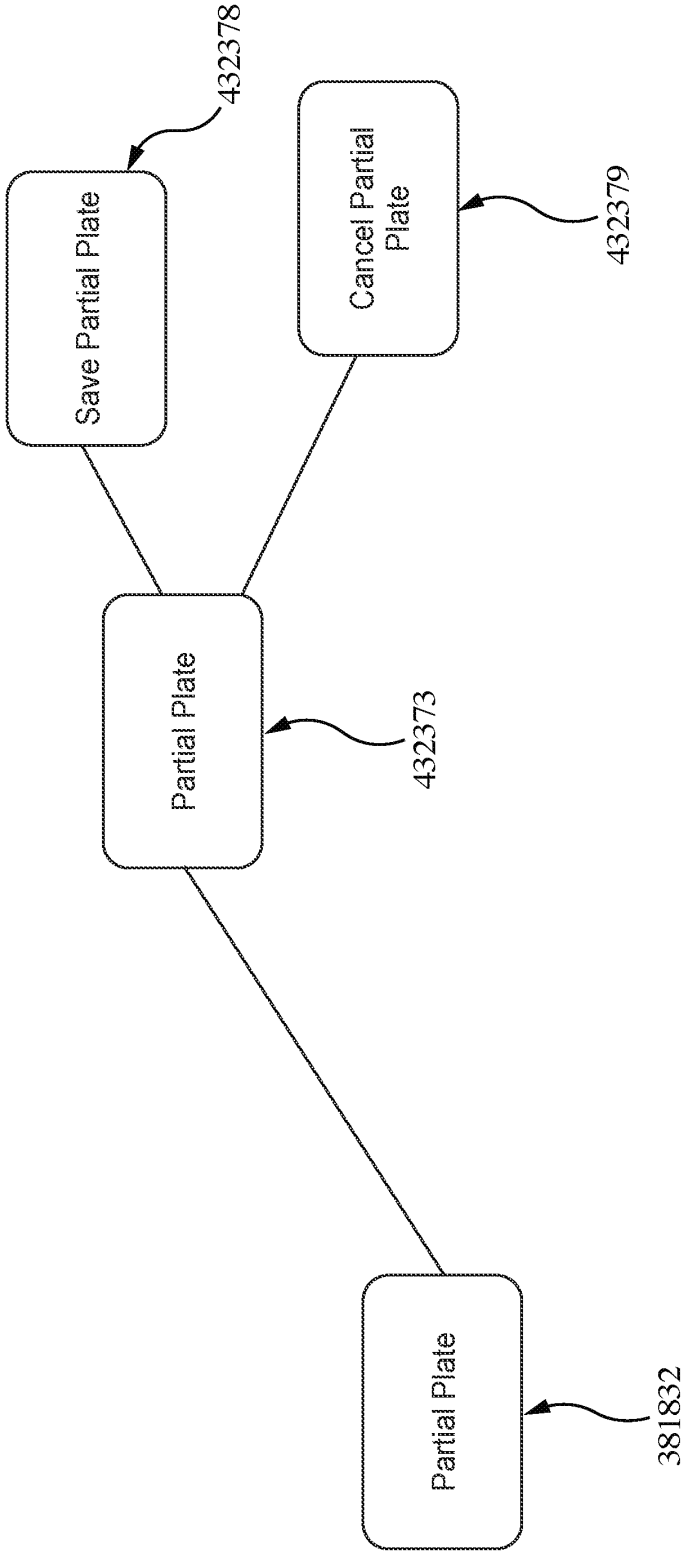
Save Partial Plate
432378
Cancel Partial Plate
432379
Partial Plate
432373
Partial Plate
381832

FIG. 43F

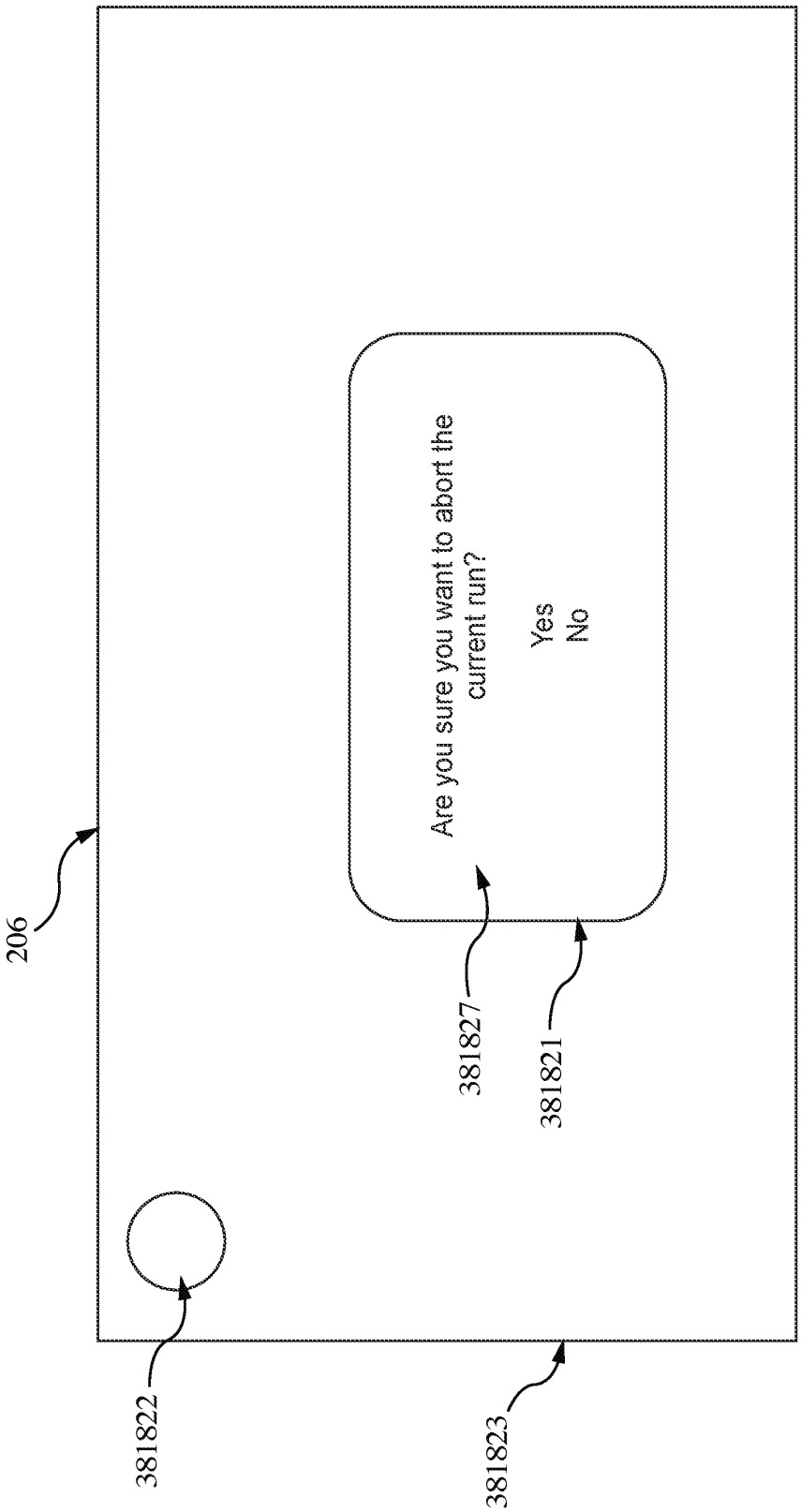
206
Are you sure you want to abort the current run?
Yes
No
381827
381821
381822
381823

FIG. 43G

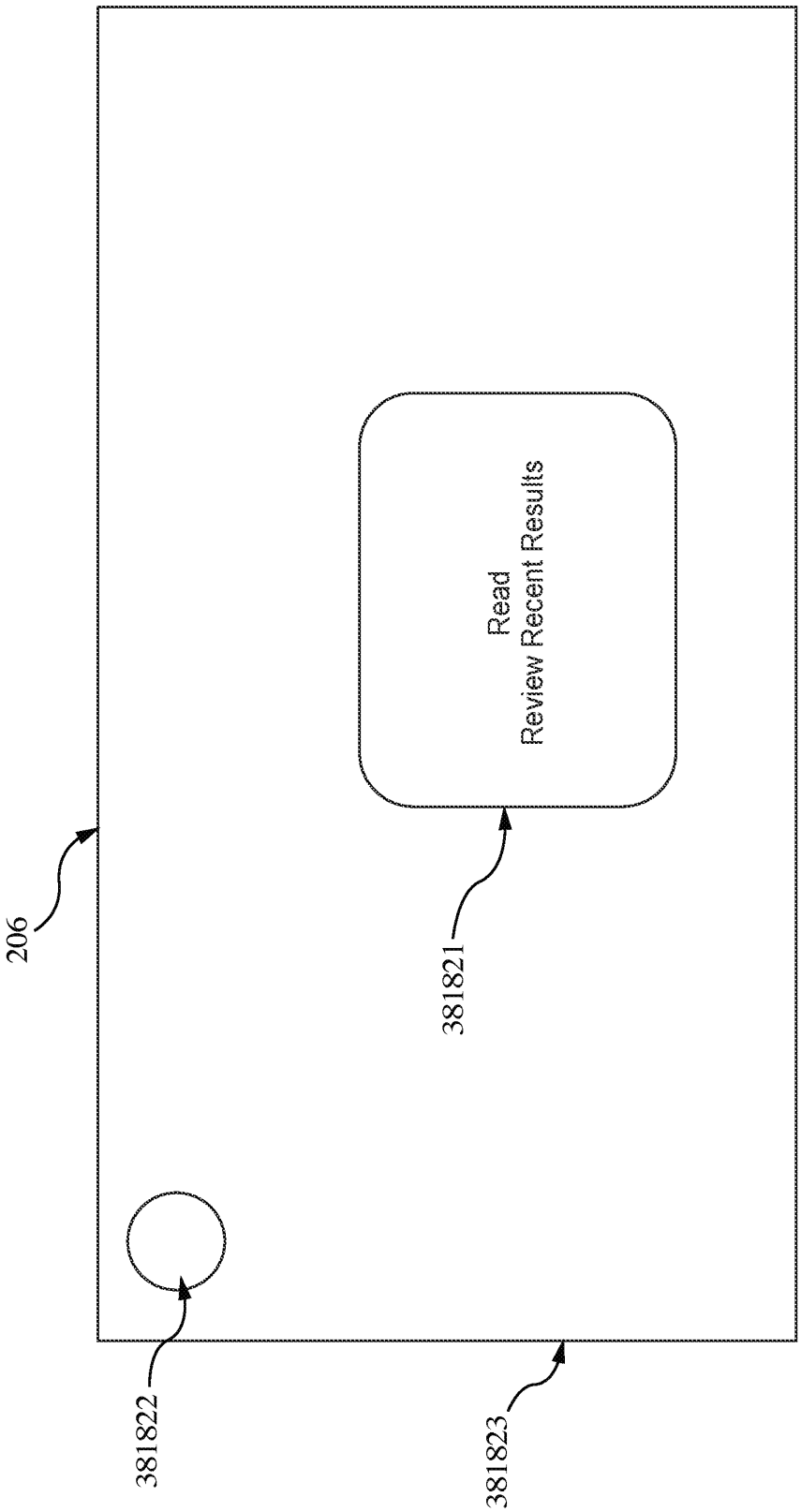

FIG. 43H

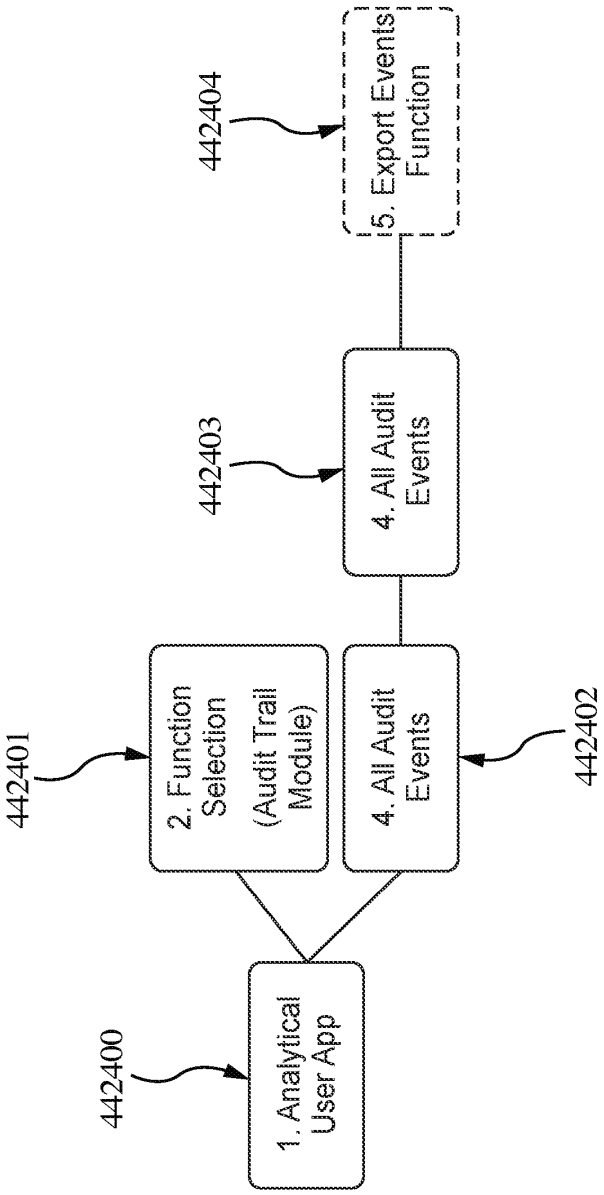
442400
1. Analytical User App
442401
2. Function Selection (Audit Trail Module)
4. All Audit Events
442402
442403
4. All Audit Events
442404
5. Export Events Function

FIG. 44

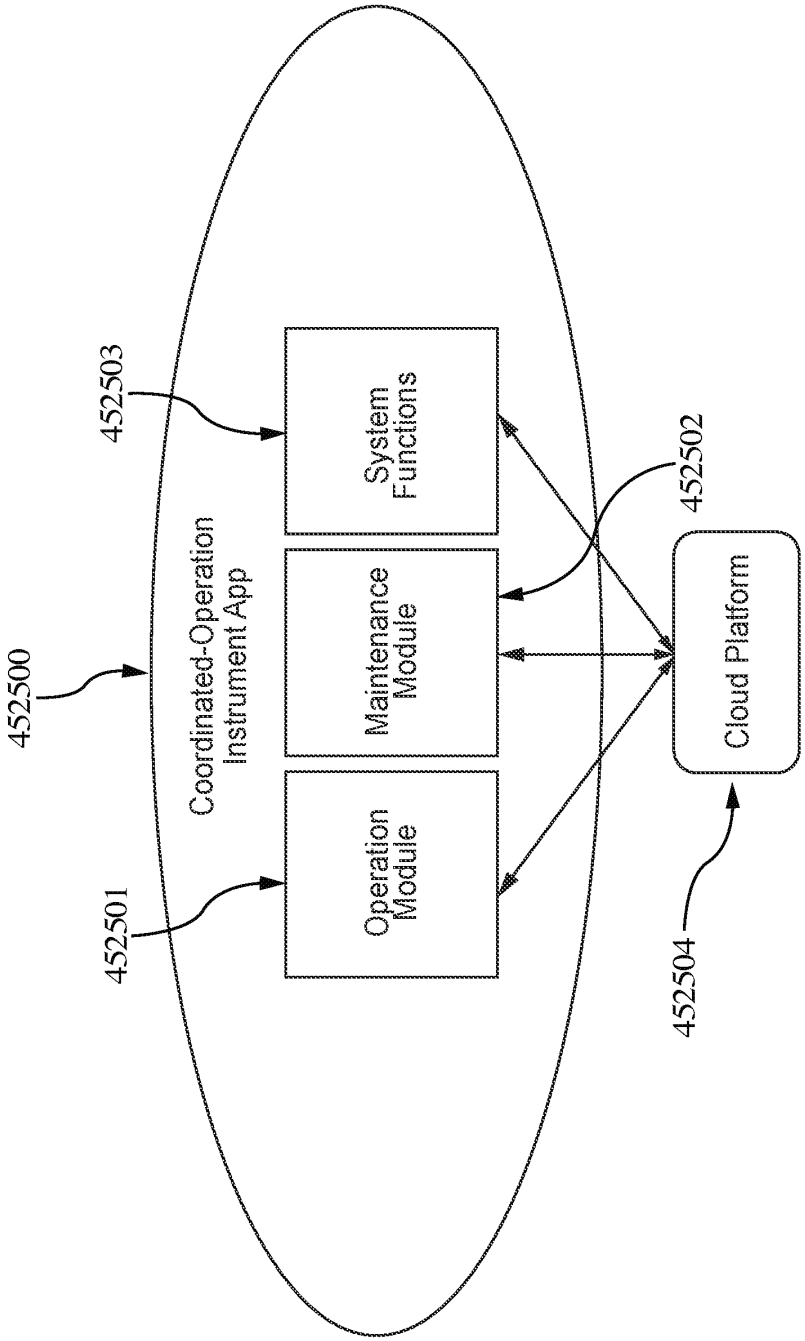
452500
Coordinated-Operation Instrument App
452501
Operation Module
452503
System Functions
Maintenance Module
452502
452504
Cloud Platform

FIG. 45

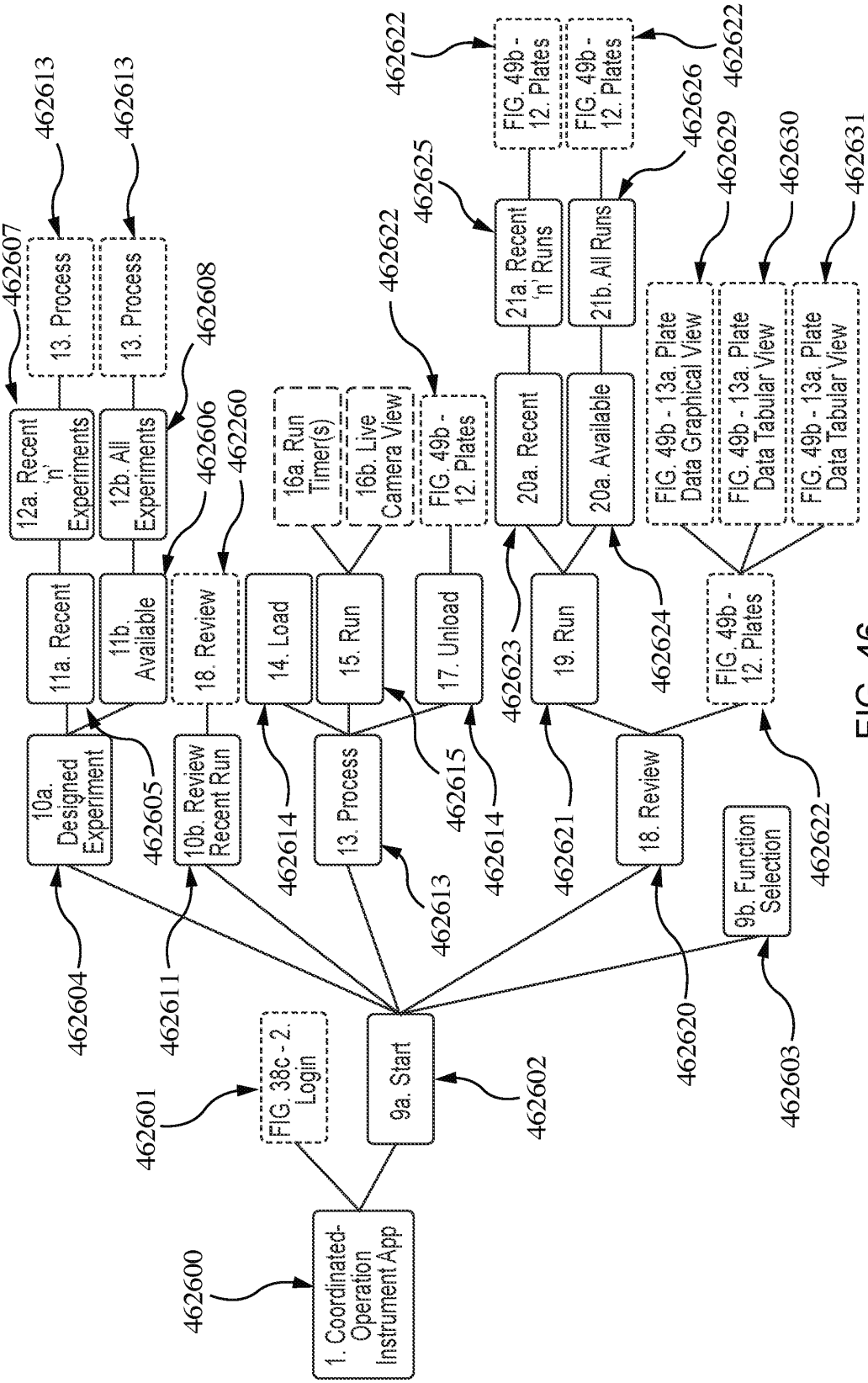
1. Coordinated-Operation Instrument App
462600
FIG. 38c - 2. Login
462601
9a. Start
462602
9b. Function Selection
462603
10a. Designed Experiment
462604
10b. Review Recent Run
462611
11a. Recent
11b. Available
462605
12a. Recent 'n' Experiments
12b. All Experiments
462606
462607
462608
13. Process
13. Process
462613
462613
462260
14. Load
462614
15. Run
462615
16a. Run Timer(s)
16b. Live Camera View
FIG. 49b - 12. Plates
462622
17. Unload
462614
18. Review
462620
19. Run
462621
20a. Recent
20a. Available
462623
21a. Recent 'n' Runs
21b. All Runs
462625
462626
FIG. 49b - 12. Plates
FIG. 49b - 12. Plates
462622
462622
FIG. 49b - 13a. Plate Data Graphical View
FIG. 49b - 13a. Plate Data Tabular View
FIG. 49b - 13a. Plate Data Tabular View
462629
462630
462631
462624
FIG. 49b - 12. Plates
462622
18. Review

FIG. 46

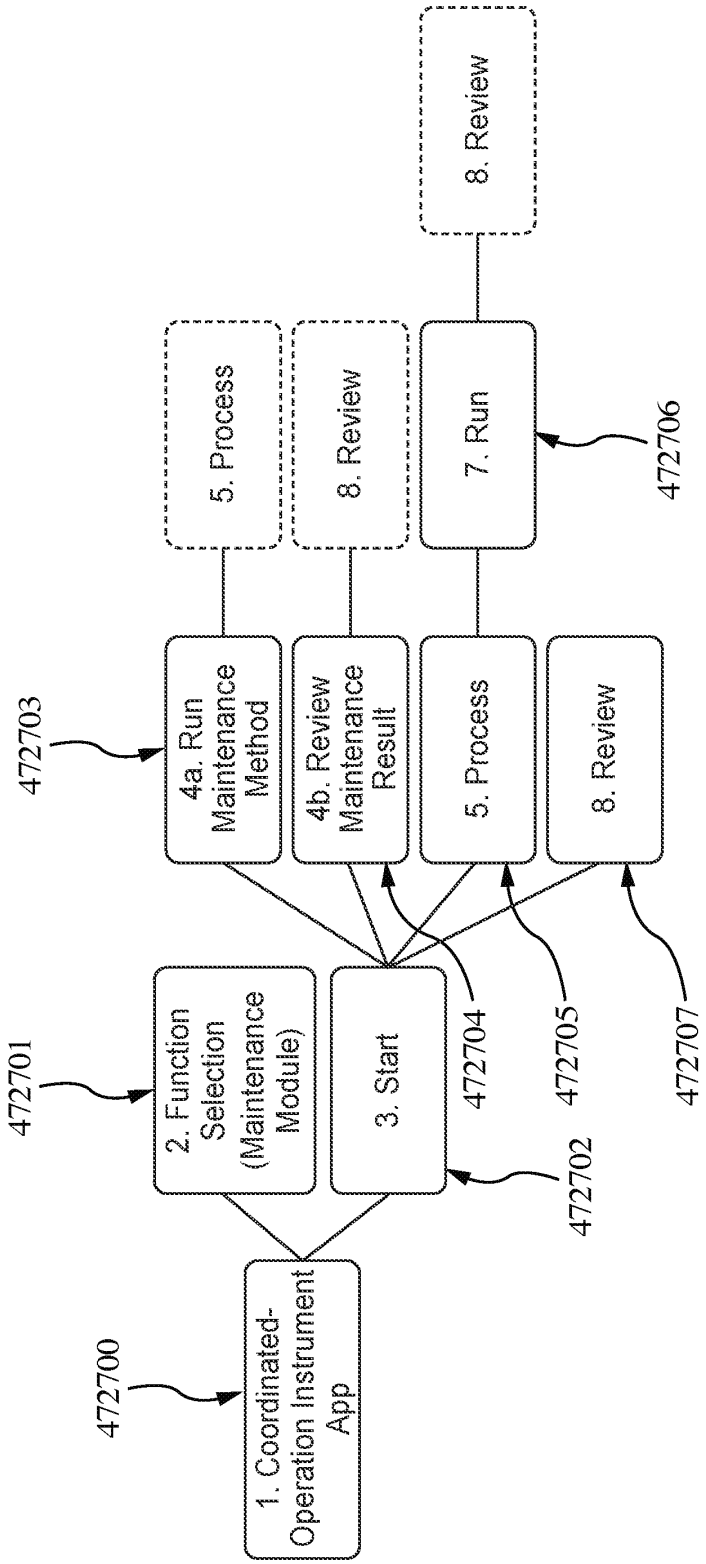
472700
1. Coordinated-Operation Instrument App
472701
2. Function Selection (Maintenance Module)
3. Start
472702
472703
4a. Run Maintenance Method
4b. Review Maintenance Result
5. Process
8. Review
472704
472705
472707
5. Process
8. Review
7. Run
472706
8. Review

FIG. 47

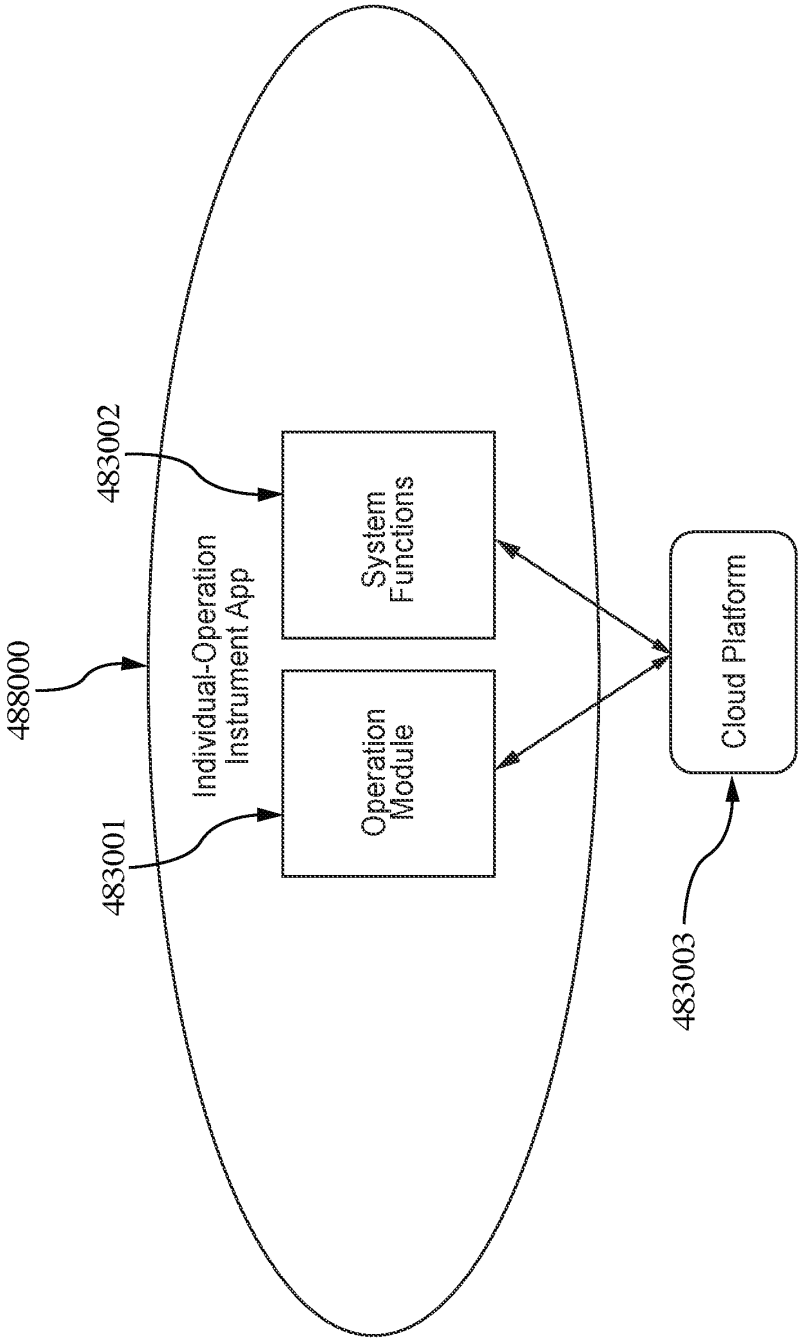
488000
Individual-Operation Instrument App
483001
Operation Module
483002
System Functions
Cloud Platform
483003

FIG. 48

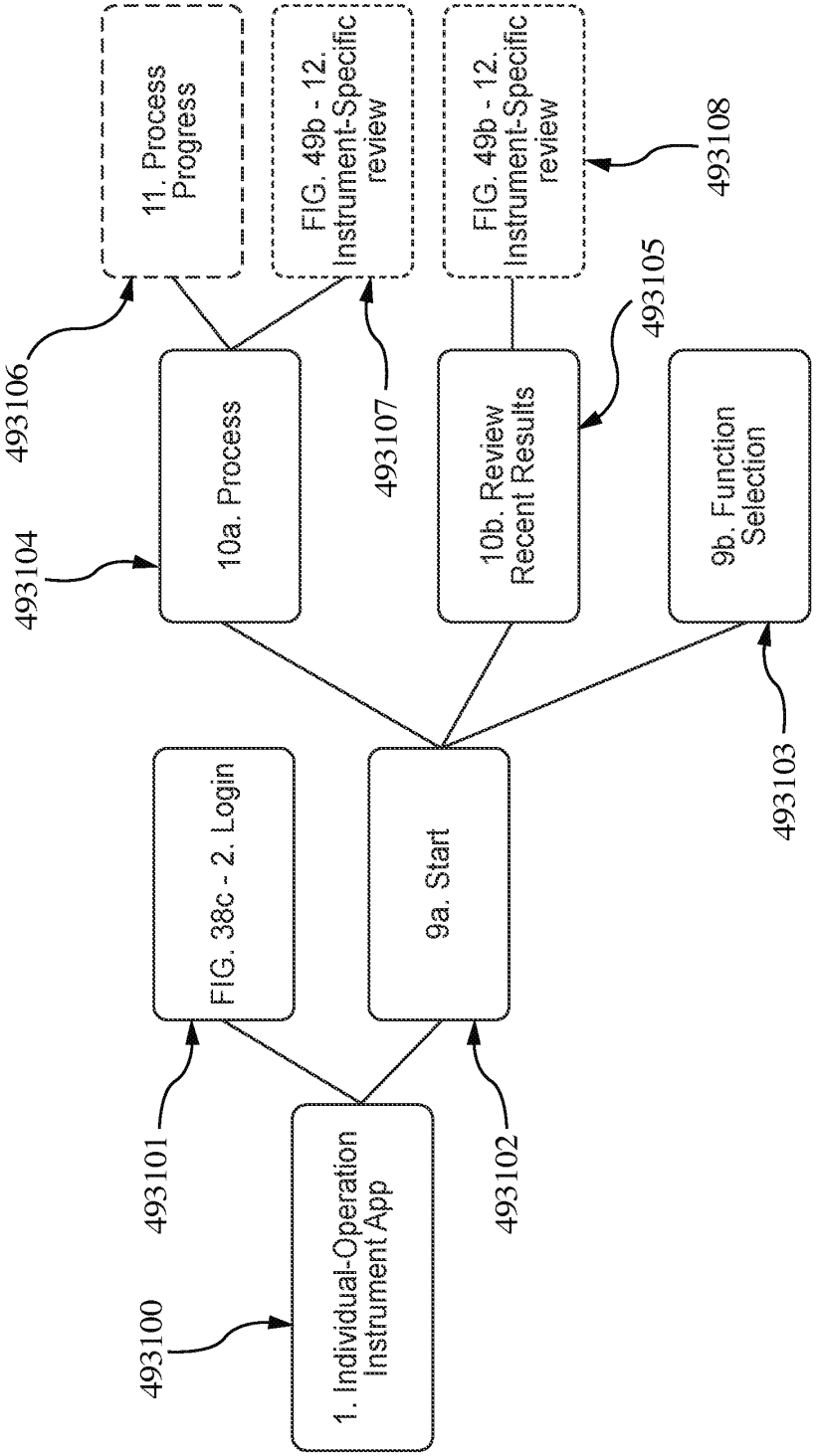
1. Individual-Operation Instrument App
493100
FIG. 38c - 2. Login
493101
9a. Start
493102
9b. Function Selection
493103
10a. Process
493104
10b. Review Recent Results
493105
11. Process Progress
493106
FIG. 49b - 12. Instrument-Specific review
493107
FIG. 49b - 12. Instrument-Specific review
493108

FIG. 49A

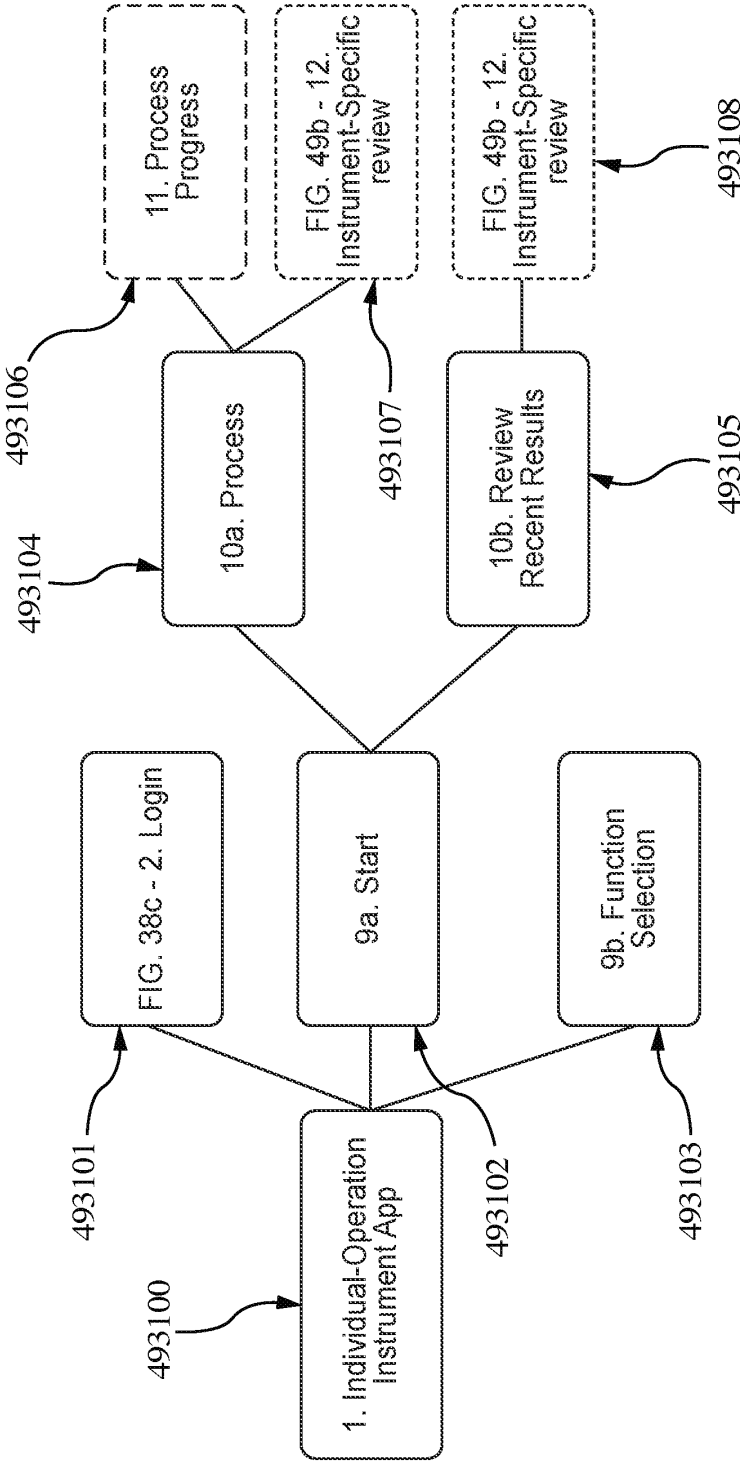
1. Individual-Operation Instrument App
493100
FIG. 38c - 2. Login
493101
9a. Start
493102
9b. Function Selection
493103
10a. Process
493104
10b. Review Recent Results
493105
11. Process Progress
493106
FIG. 49b - 12. Instrument-Specific review
493107
FIG. 49b - 12. Instrument-Specific review
493108

FIG. 49AA

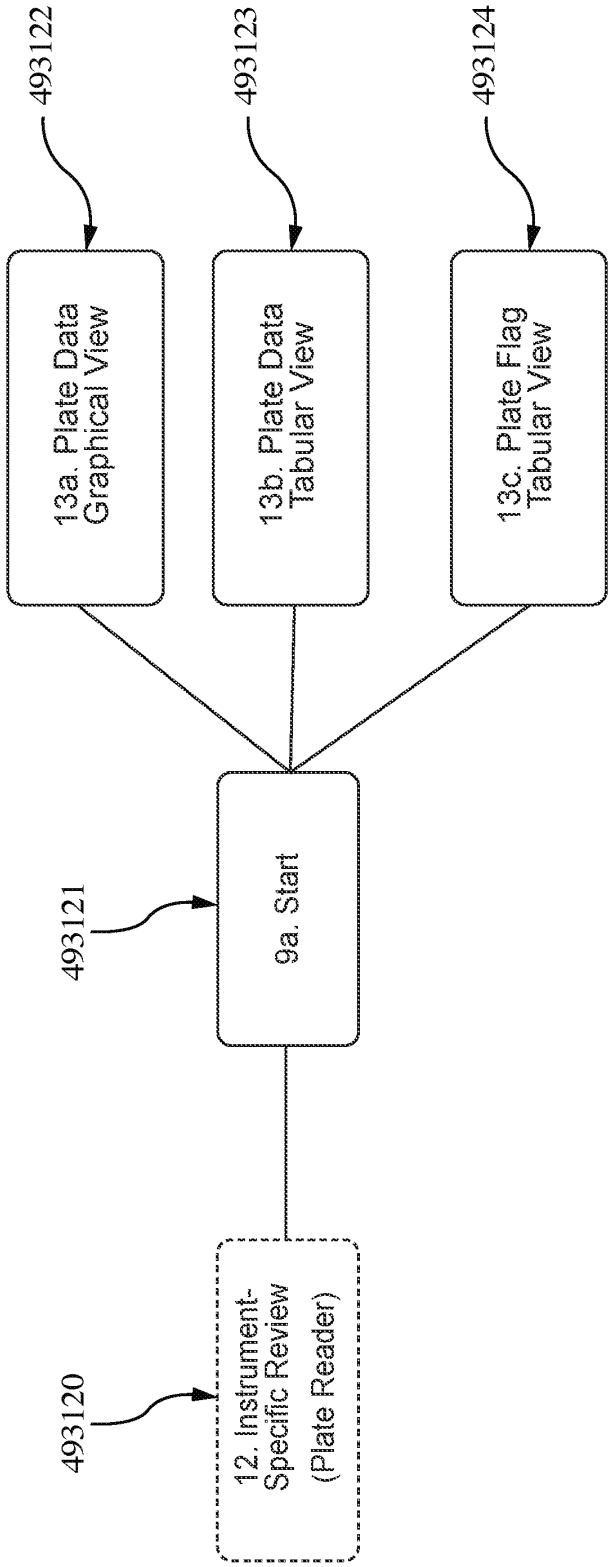
493120
12. Instrument-Specific Review (Plate Reader)
493121
9a. Start
493122
13a. Plate Data Graphical View
493123
13b. Plate Data Tabular View
493124
13c. Plate Flag Tabular View

FIG. 49B

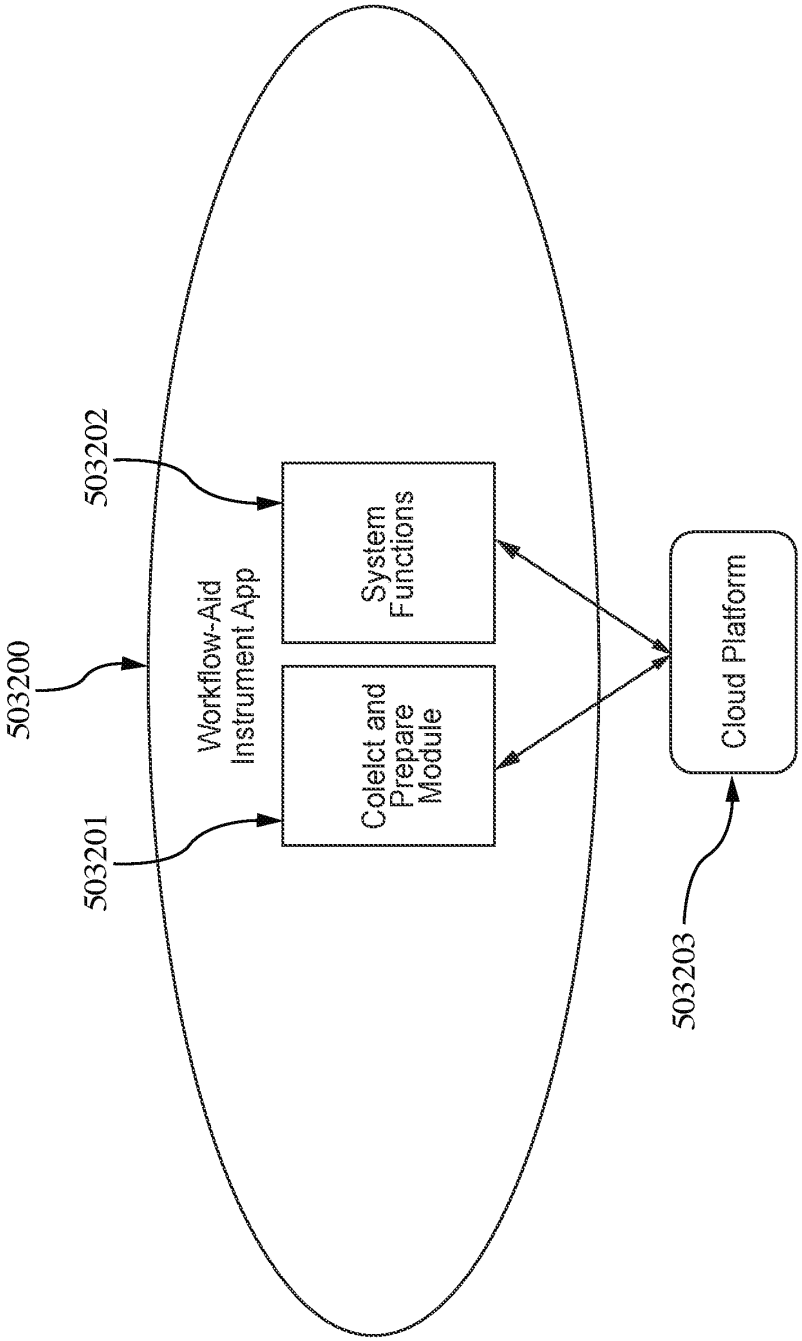
503200
503202
503201
Workflow-Aid Instrument App
System Functions
Coleict and Prepare Module
Cloud Platform
503203

FIG. 50

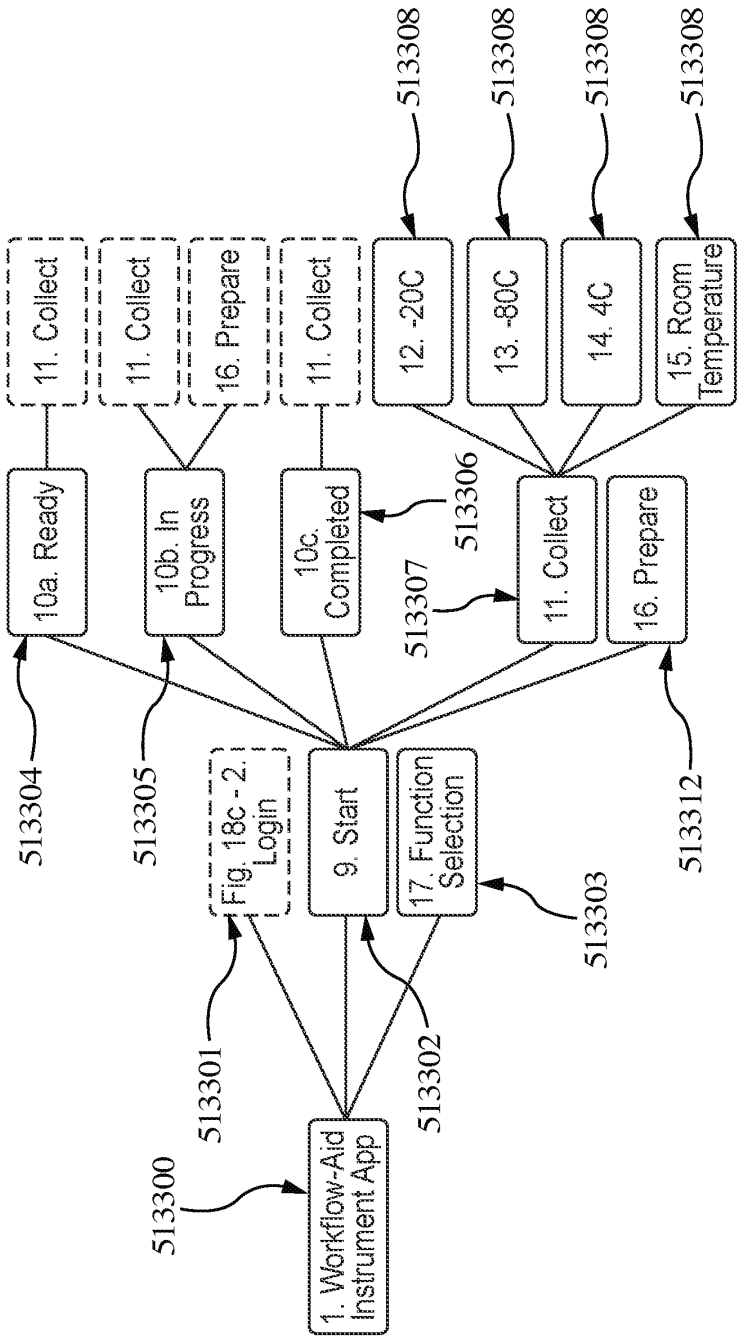
1. Workflow-Aid Instrument App
513300
513301
513302
Fig. 18c - 2. Login
9. Start
17. Function Selection
513303
513304
513305
513312
10a. Ready
10b. In Progress
10c. Completed
513306
513307
11. Collect
16. Prepare
11. Collect
11. Collect
16. Prepare
11. Collect
12. -20C
13. -80C
14. 4C
15. Room Temperature
513308
513308
513308
513308

FIG. 51

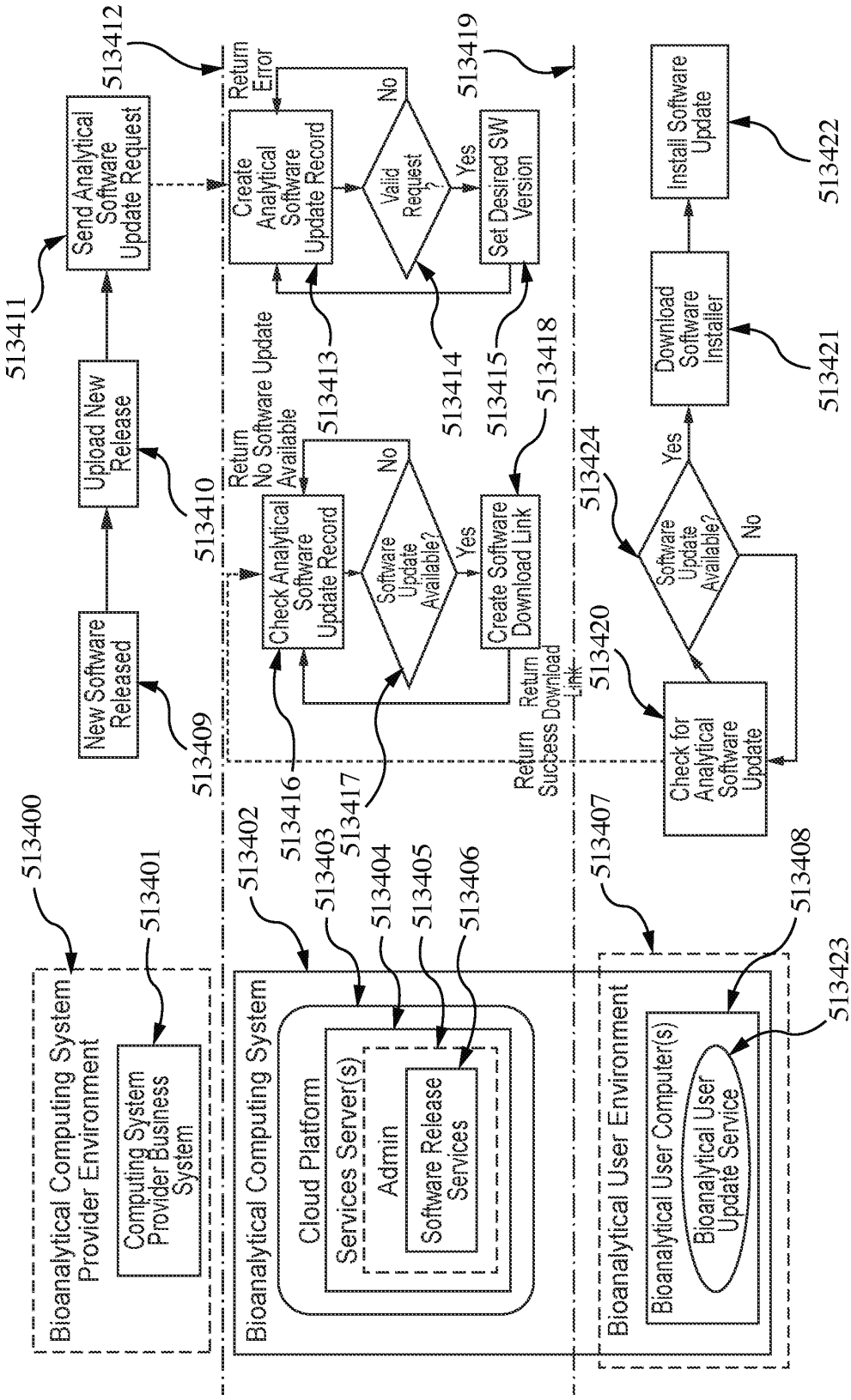
Bioanalytical Computing System Provider Environment
Computing System Provider Business System
Bioanalytical Computing System
Cloud Platform
Services Server(s)
Admin
Software Release Services
Bioanalytical User Environment
Bioanalytical User Computer(s)
Bioanalytical User Update Service
New Software Released
Upload New Release
Send Analytical Software Update Request
Check Analytical Software Update Record
Software Update Available?
Create Software Download Link
Create Analytical Software Update Record
Valid Request?
Set Desired SW Version
Return No Software Update Available
Return Error
Return Sucbess Download Link
Check for Analytical Software Update
Software Update Available?
Download Software Installer
Install Software Update
Yes
No
513400
513401
513402
513403
513404
513405
513406
513407
513408
513409
513410
513411
513412
513413
513414
513415
513416
513417
513418
513419
513420
513421
513422
513423
513424

FIG. 52

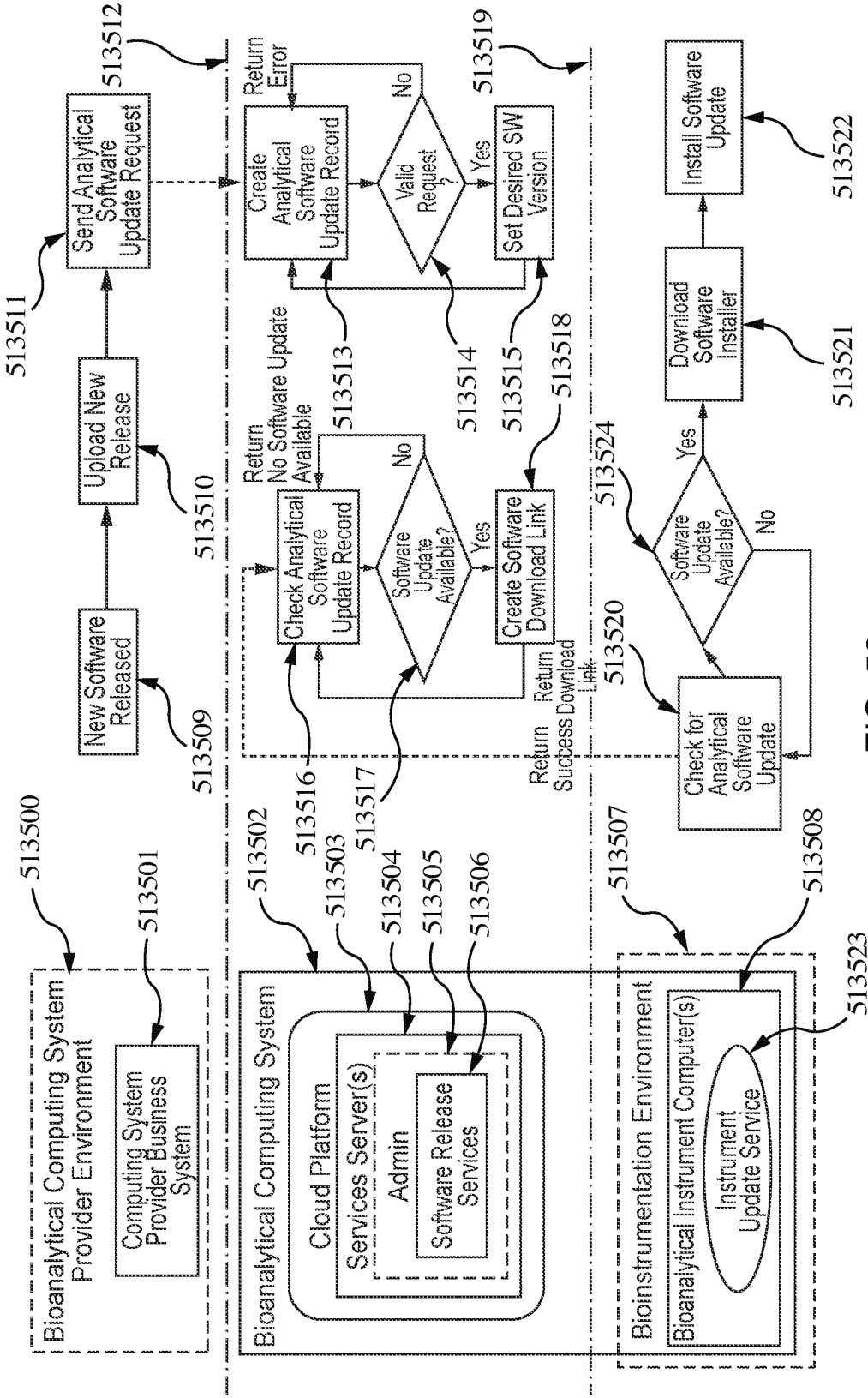
Bioanalytical Computing System Provider Environment
Computing System Provider Business System
Bioanalytical Computing System
Cloud Platform
Services Server(s)
Admin
Software Release Services
Bioinstrumentation Environment
Bioanalytical Instrument Computer(s)
Instrument Update Service
New Software Released
Upload New Release
Send Analytical Software Update Request
Check Analytical Software Update Record
Software Update Available?
Yes
No
Create Software Download Link
Return Success Download Link
Return No Software Update Available
Create Analytical Software Update Record
Valid Request ?
Set Desired SW Version
Return Error
Check for Analytical Software Update
Software Update Available?
Download Software Installer
Install Software Update
513500
513501
513502
513503
513504
513505
513506
513507
513508
513509
513510
513511
513512
513513
513514
513515
513516
513517
513518
513519
513520
513521
513522
513523
513524

FIG. 53

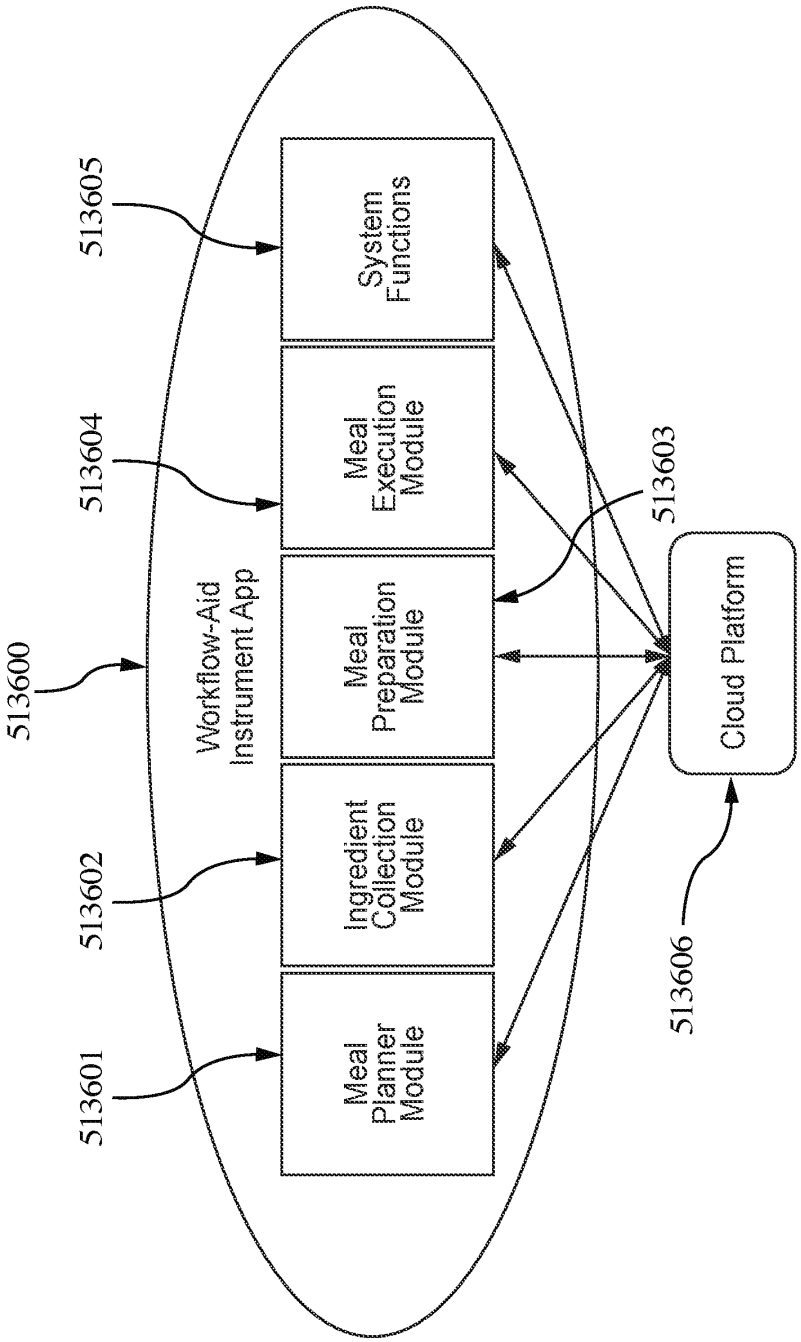
513600
Workflow-Aid Instrument App
513601
Meal Planner Module
513602
Ingredient Collection Module
513604
Meal Preparation Module
513605
Meal Execution Module
System Functions
513603
513606
Cloud Platform

FIG. 54

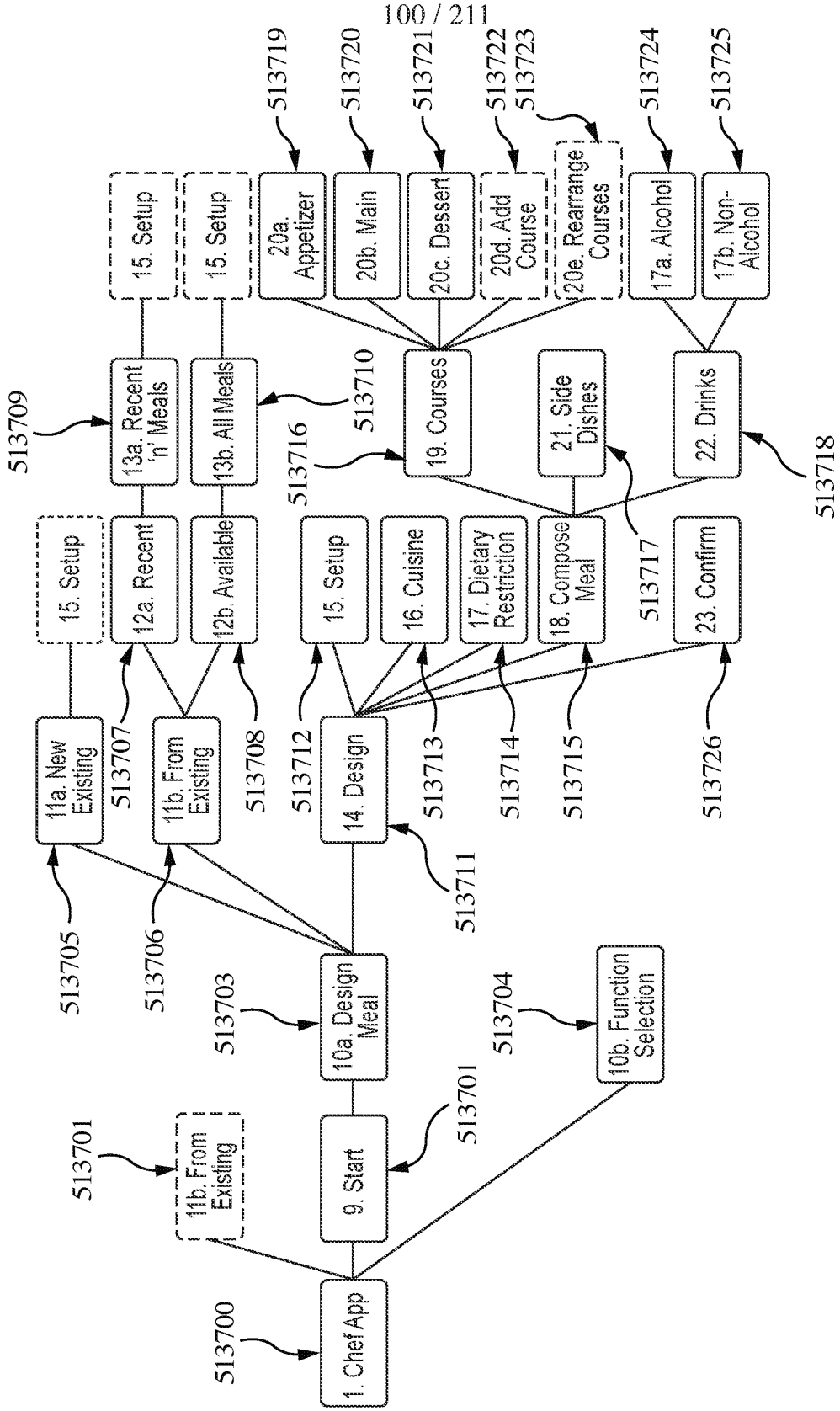
1. Chef App
513700
11b. From Existing
513701
9. Start
513701
10a. Design Meal
513703
10b. Function Selection
513704
11a. New Existing
513705
11b. From Existing
513706
14. Design
513711
12a. Recent
513707
12b. Available
513708
15. Setup
15. Setup
15. Setup
15. Setup
13a. Recent 'n' Meals
513709
13b. All Meals
513710
16. Cuisine
513712
17. Dietary Restriction
513713
18. Compose Meal
513714
19. Courses
513715
20a. Appetizer
513716
20b. Main
513719
20c. Dessert
513720
20d. Add Course
513721
20e. Rearrange Courses
513722
513723
21. Side Dishes
513724
17a. Alcohol
513725
17b. Non-Alcohol
22. Drinks
513717
23. Confirm
513718
513726

FIG. 55

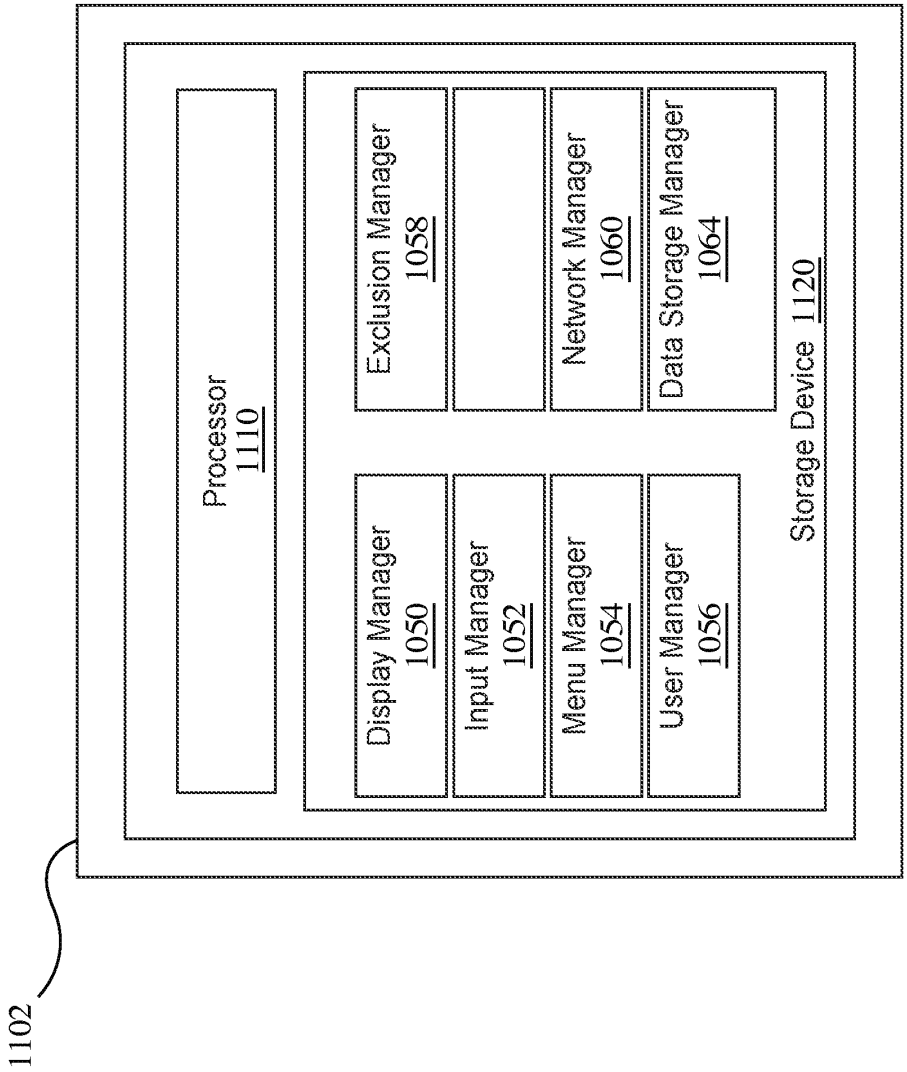
1102
Processor
1110
Display Manager
1050
Input Manager
1052
Menu Manager
1054
User Manager
1056
Exclusion Manager
1058
Network Manager
1060
Data Storage Manager
1064
Storage Device 1120

FIG. 56

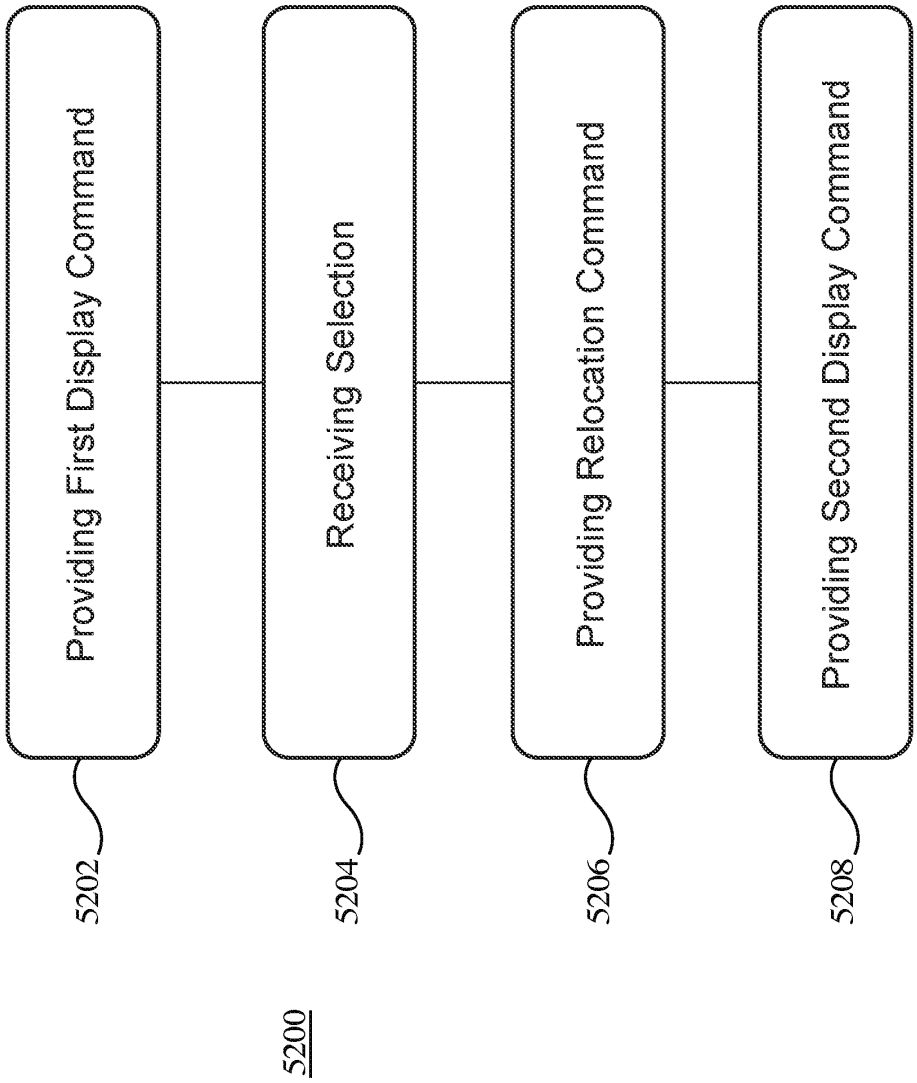
Providing First Display Command
Receiving Selection
Providing Relocation Command
Providing Second Display Command
5202
5204
5206
5208
5200

FIG. 57

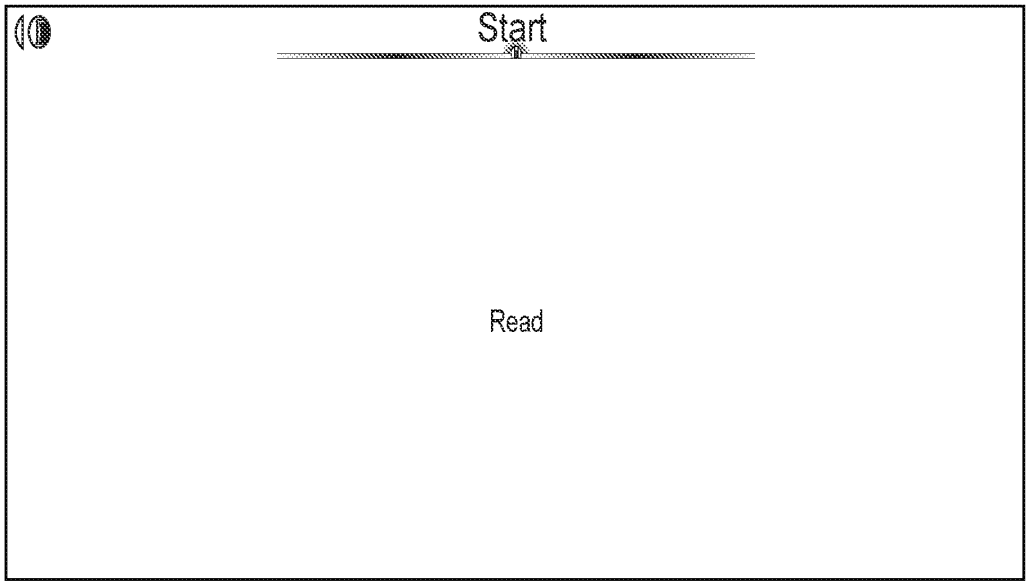

FIG. 58A

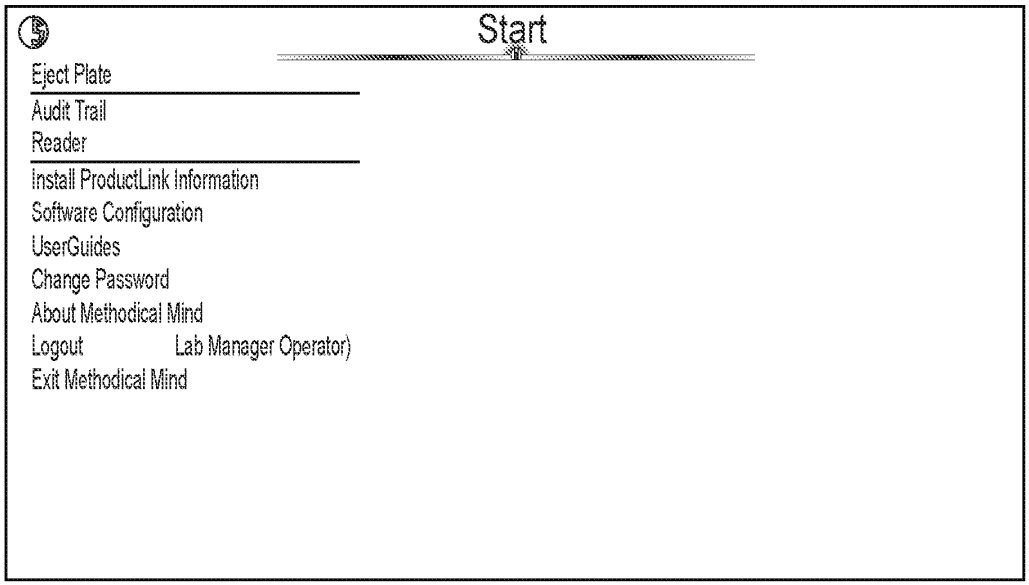

FIG. 58B

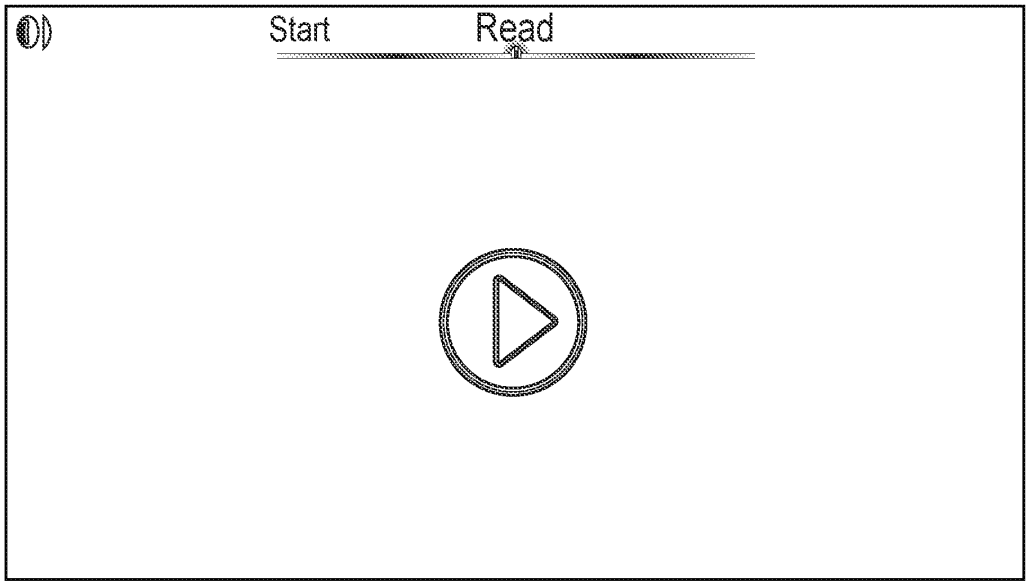

FIG. 58C

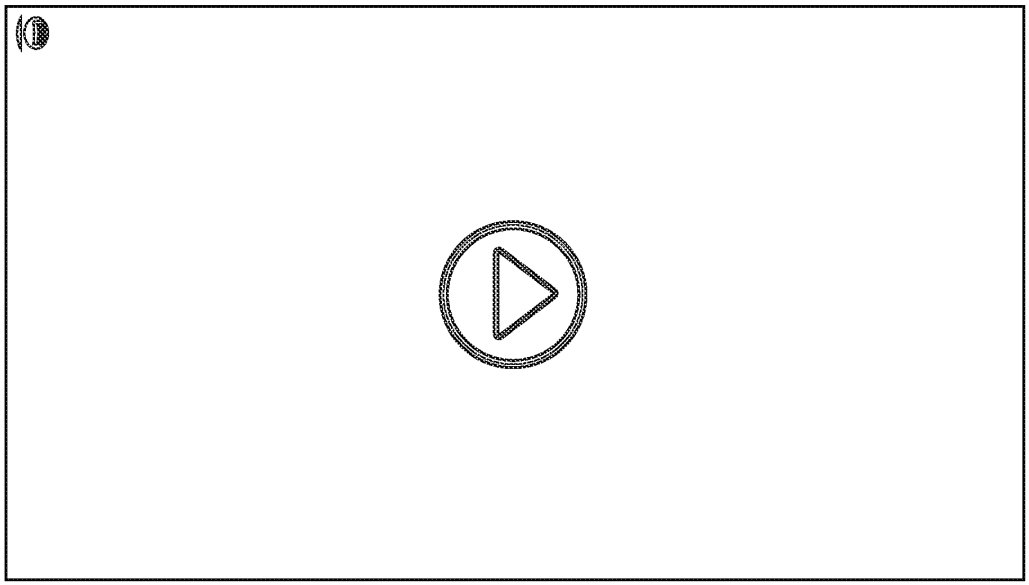

FIG. 58D

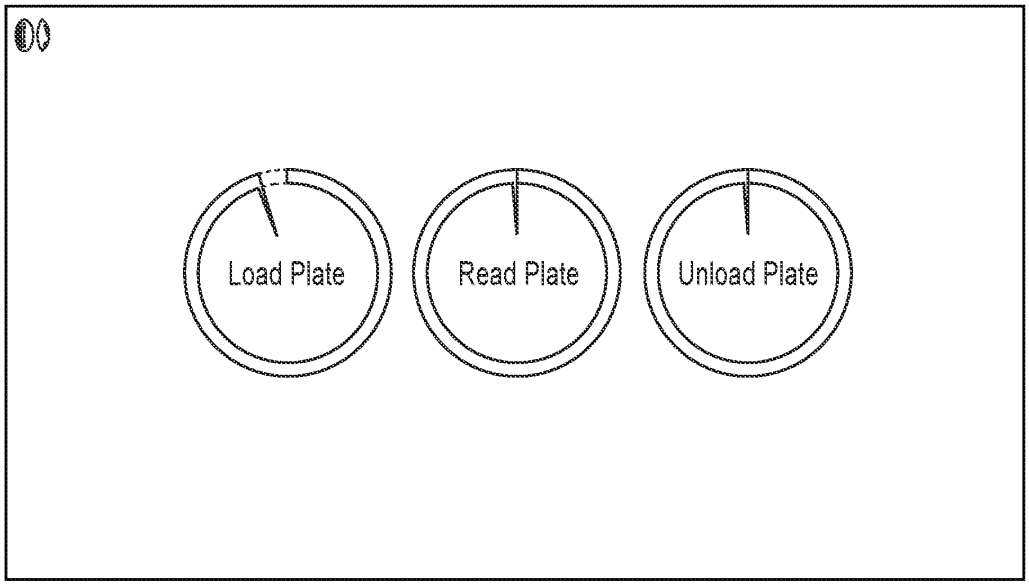

FIG. 58E

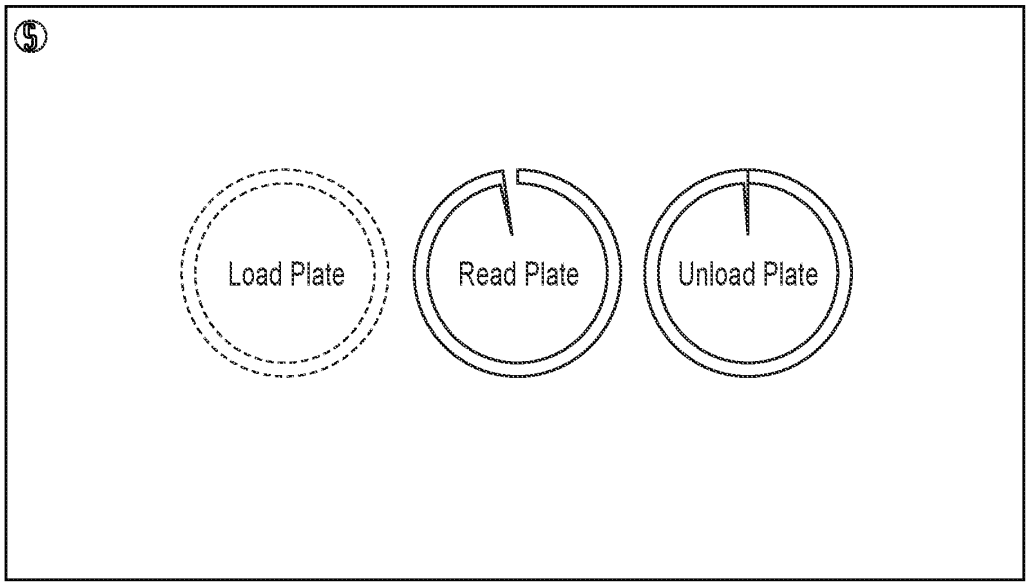

FIG. 58F

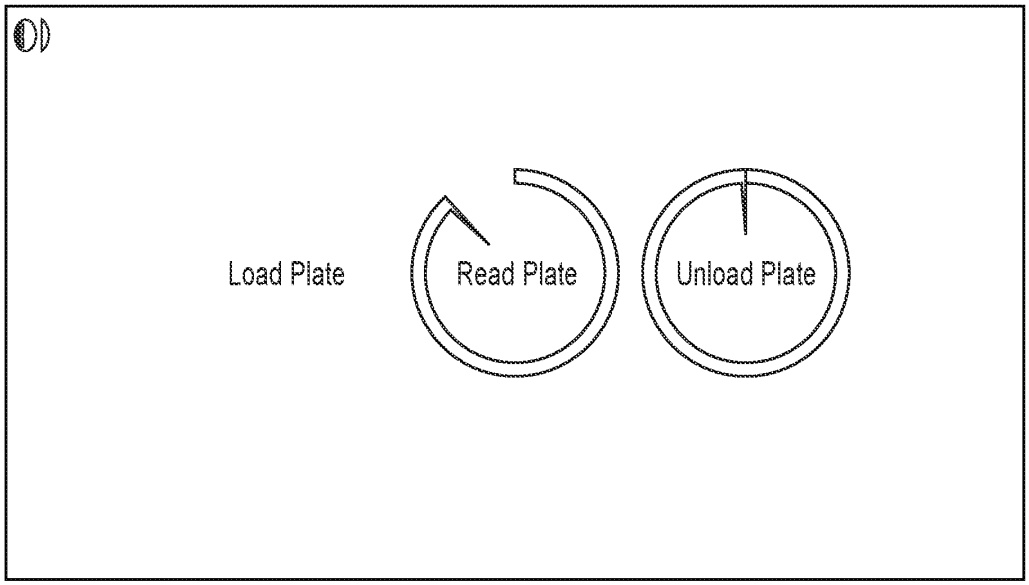

FIG. 58G

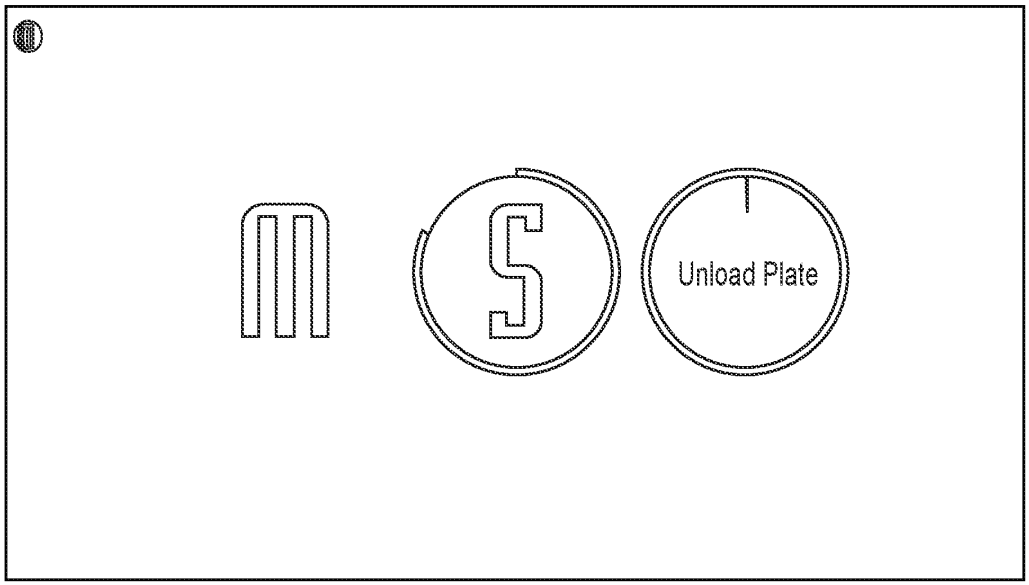

FIG. 58H

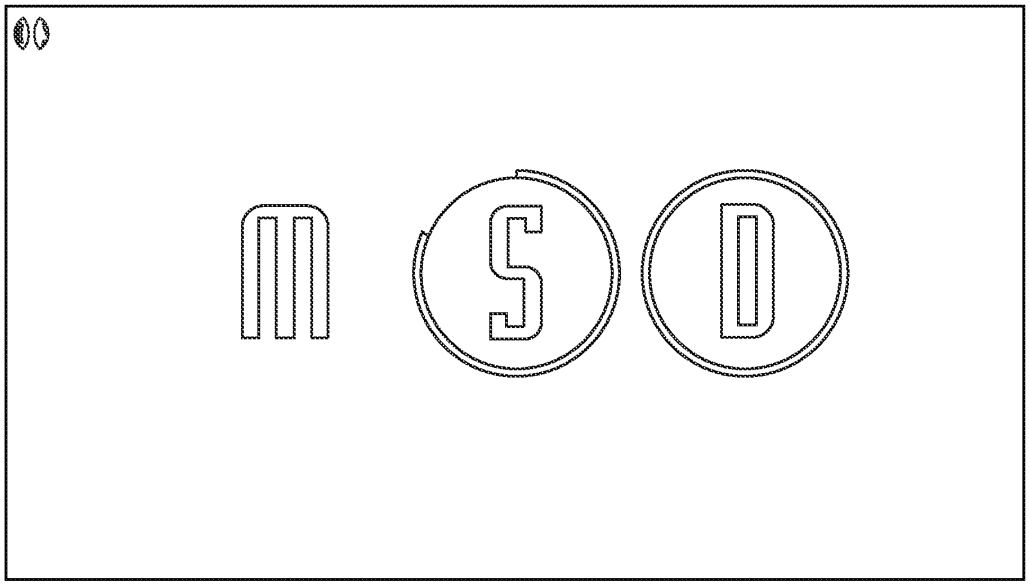

FIG. 58I

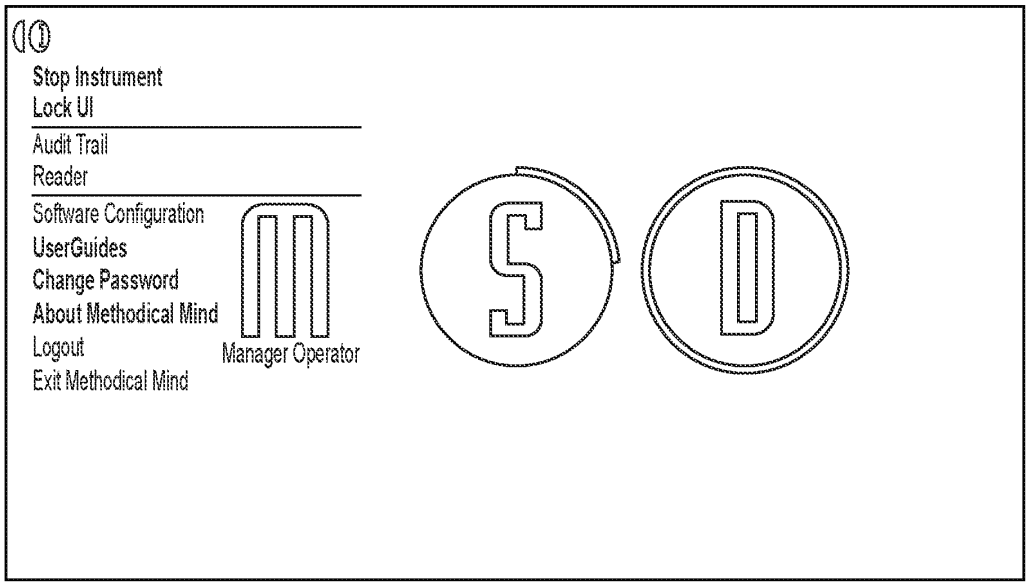

FIG. 58J

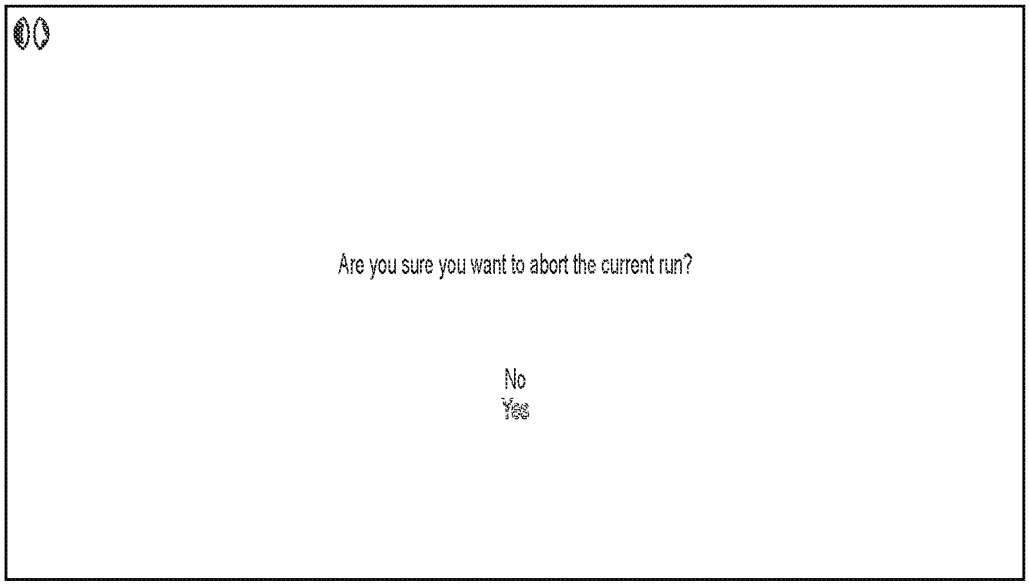

FIG. 58K

FIG. 58L

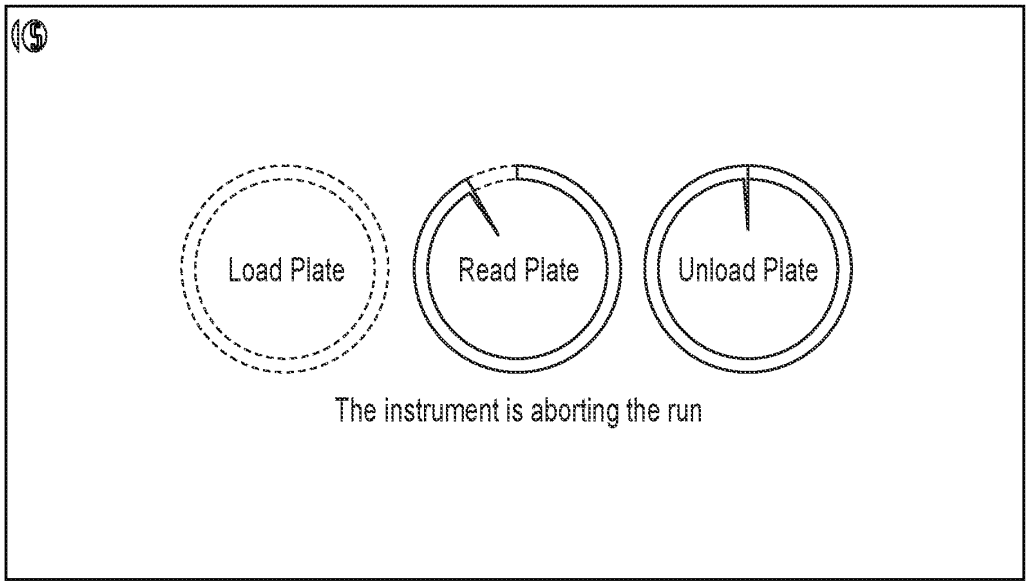

FIG. 58M

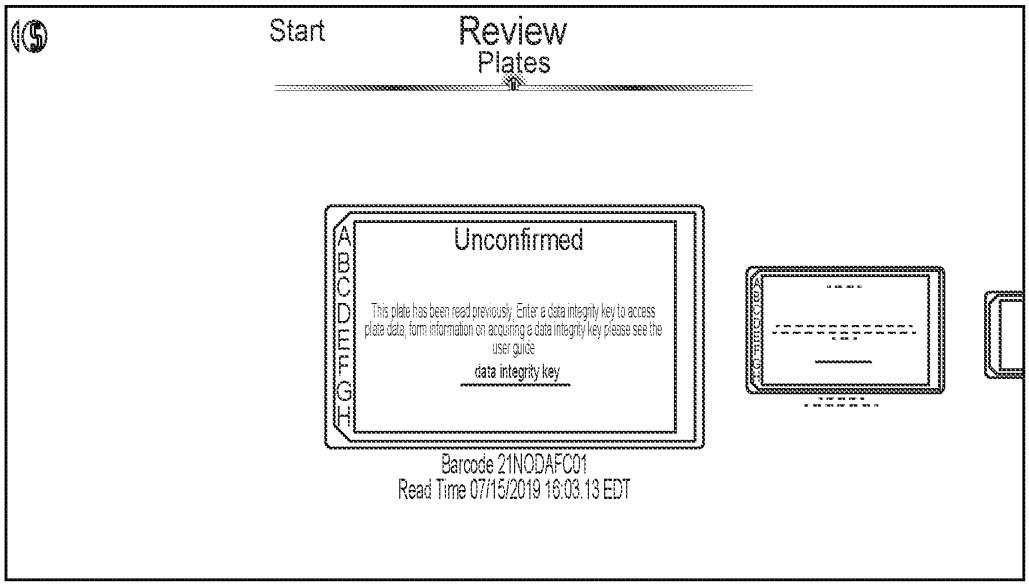

FIG. 58N

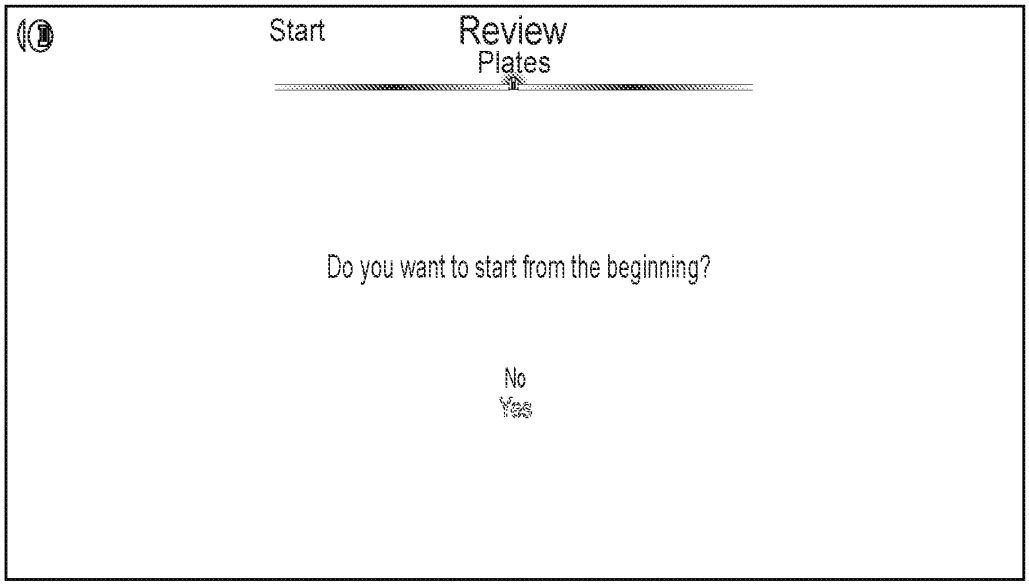

FIG. 58O

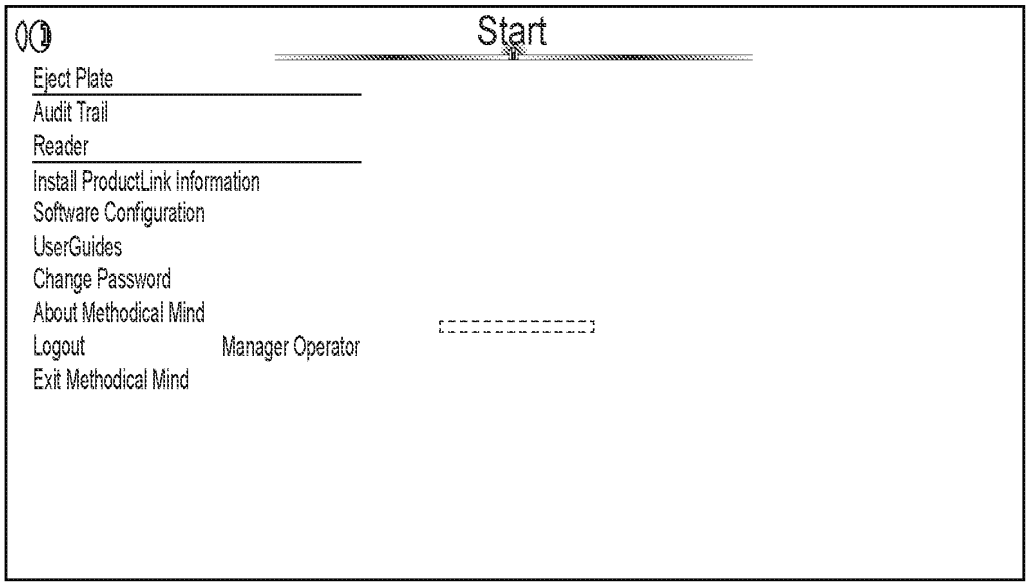

FIG. 58P

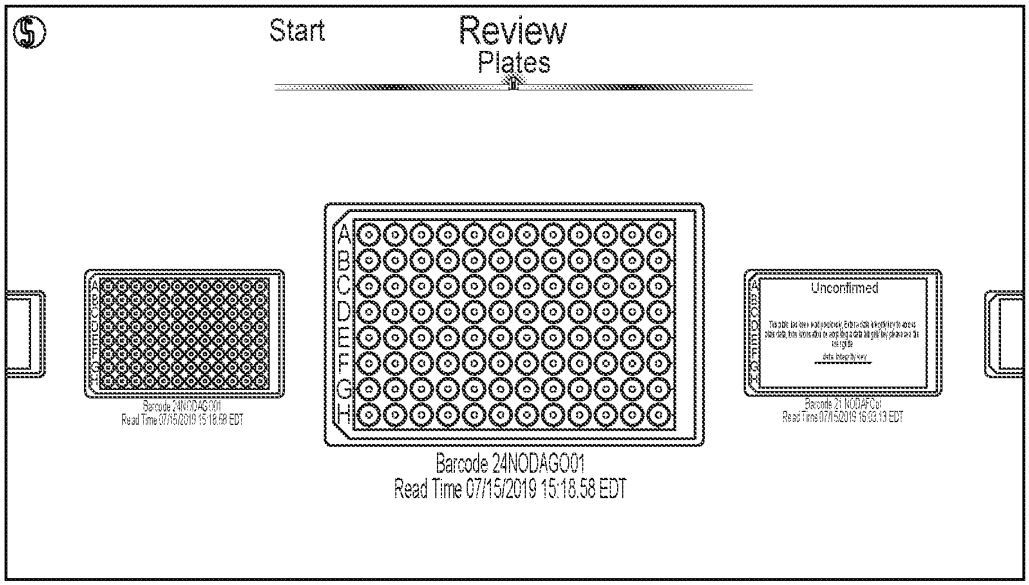

FIG. 58Q

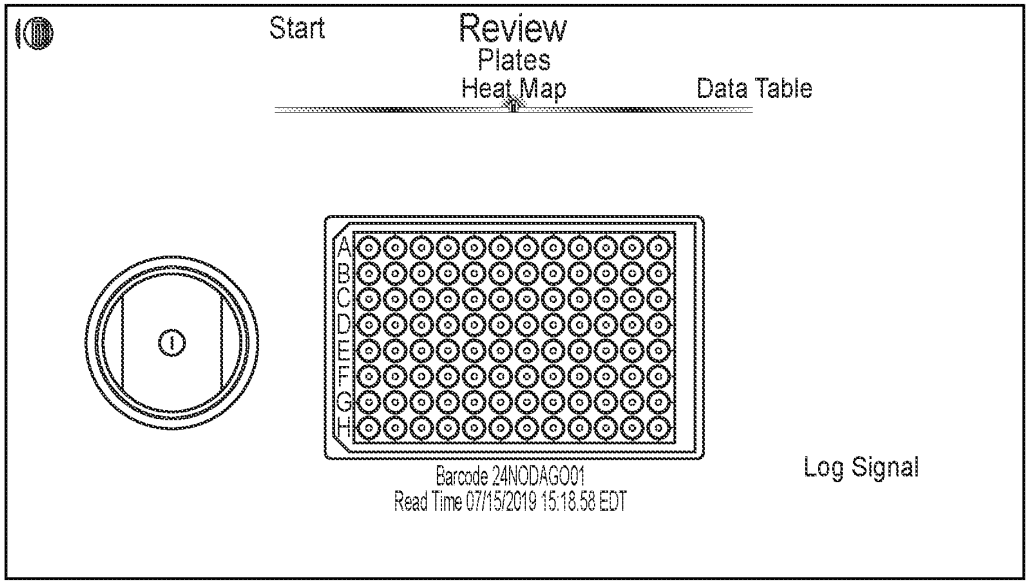

FIG. 58R

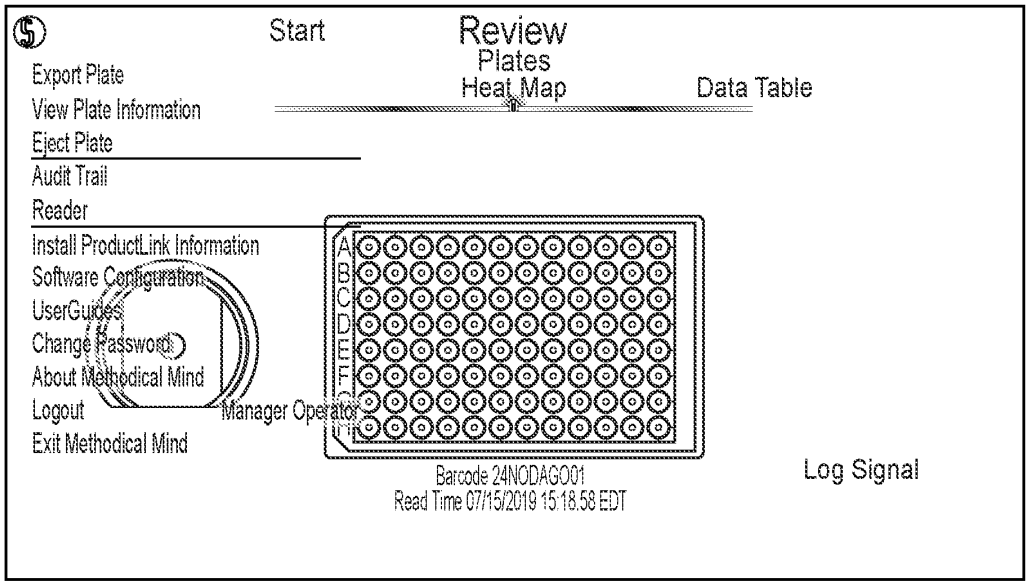

FIG. 58S

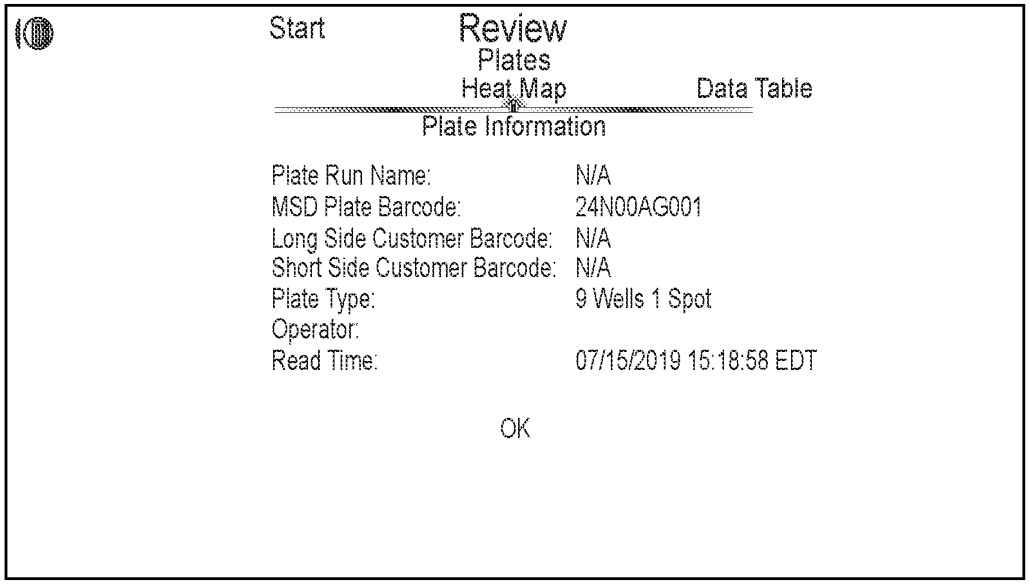

FIG. 58T

Start Review

Plates

Heat Map Data Table Flags

Operator	Plate Number	Barcode	Well	Spot	Signal
	1	24NOOAG001	E01	1	25239.00
	1	24NOOAG001	E02	1	25875.00
	1	24NOOAG001	E03	1	25789.00
	1	24NOOAG001	E04	1	25634.00
	1	24NOOAG001	F01	1	25071.00
	1	24NOOAG001	F02	1	27002.00
	1	24NOOAG001	F03	1	26619.00
	1	24NOOAG001	F04	1	25905.00
	1	24NOOAG001	G01	1	26151.00
	1	24NOOAG001	G02	1	26372.00
	1	24NOOAG001	G03	1	26129.00
	1	24NOOAG001	G04	1	25451.00
	1	24NOOAG001	H01	1	26236.00
	1	24NOOAG001	H02	1	26078.00
	1	24NOOAG001	H03	1	25676.00
	1	24NOOAG001	H04	1	25267.00

FIG. 58U

Start Review

Plates

Heat Map Data Table Flags

Barcode	Category	Flag	Description	Date & Time
24NOOAG001	Flag	7561	Plate run aborted	07/15/2019 15:18:53 EDT

FIG. 58V

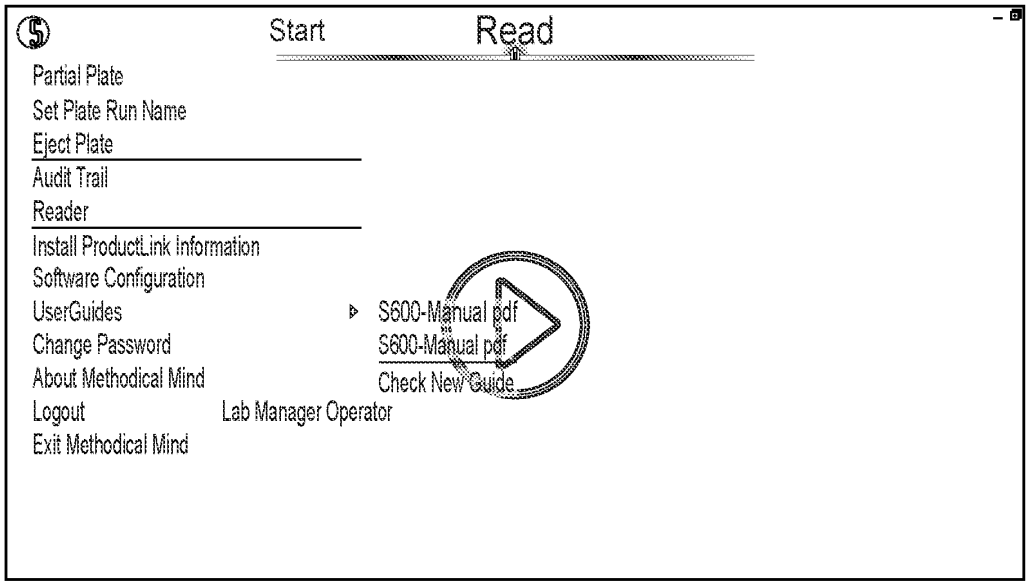

FIG. 58W

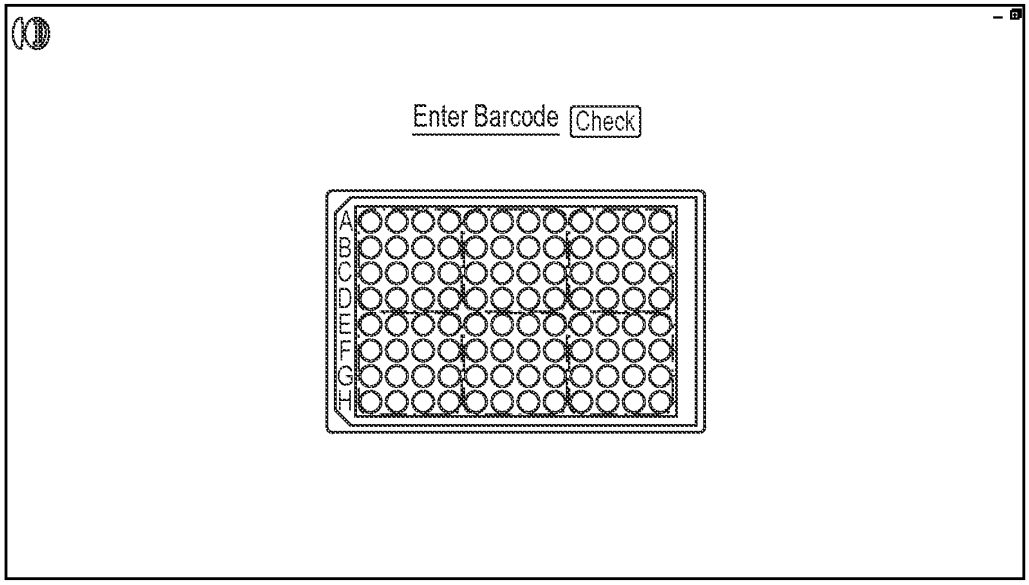

FIG. 58X

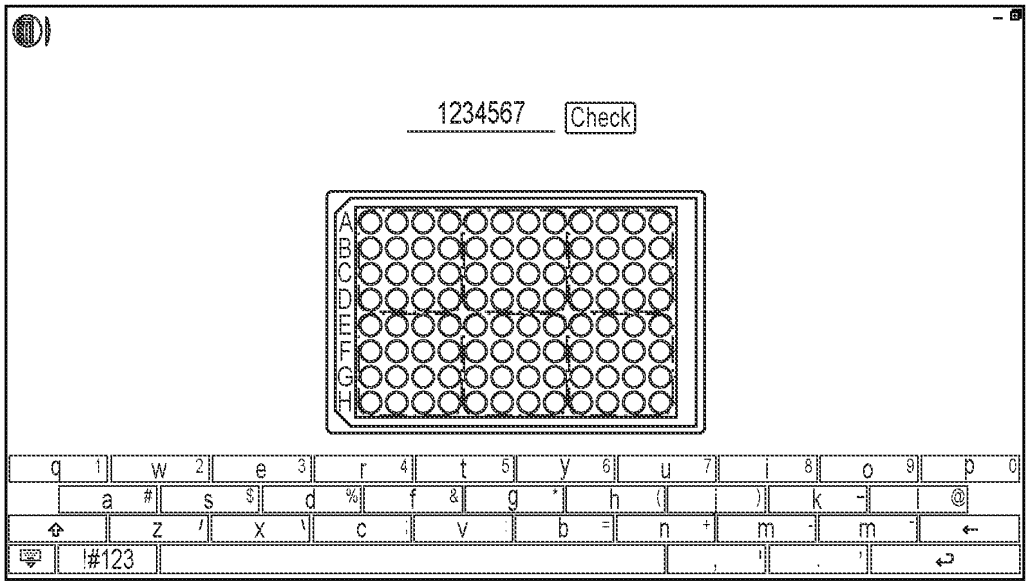

FIG. 58Y

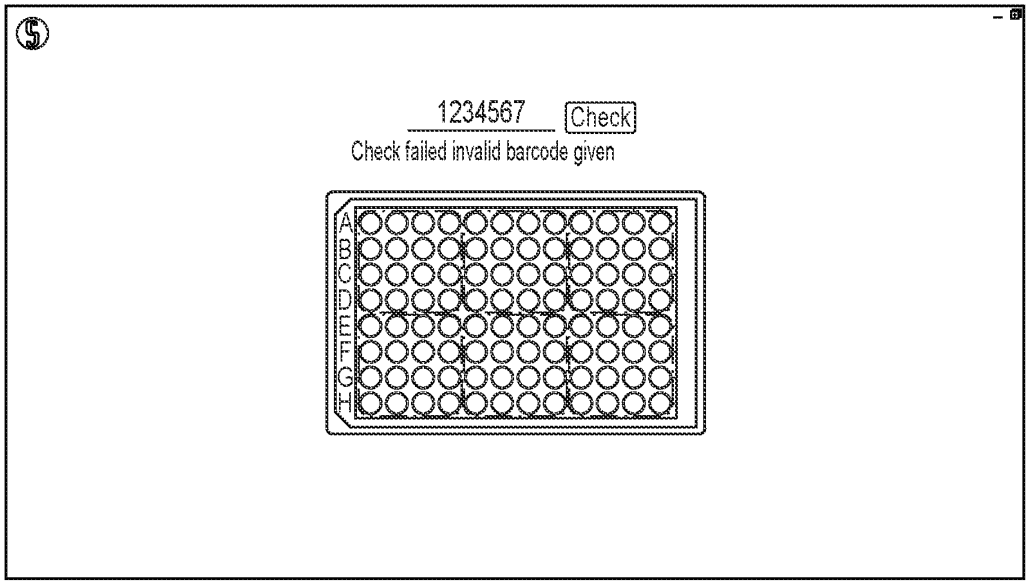

FIG. 58Z

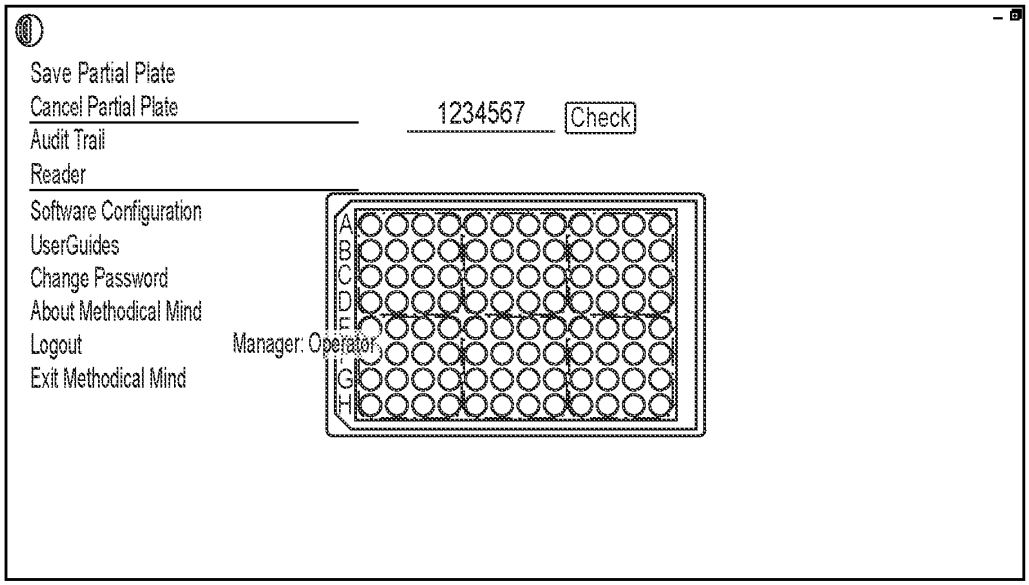

FIG. 58AA

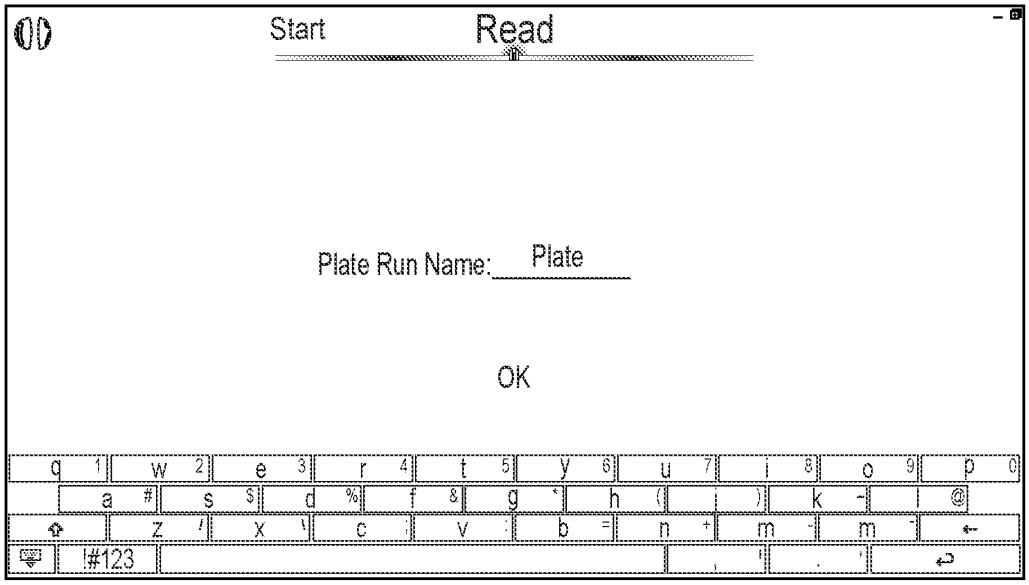

FIG. 58BB

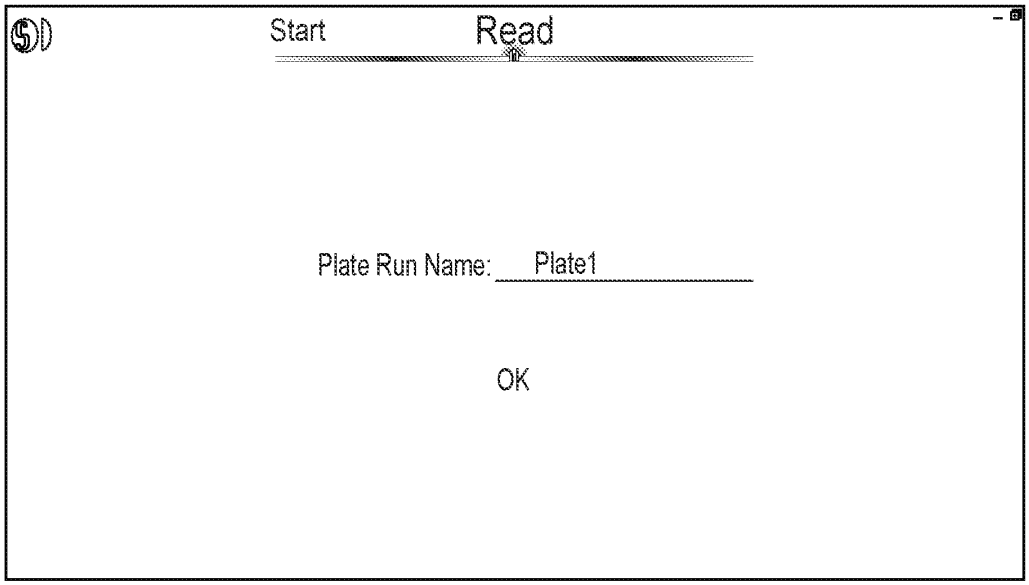

FIG. 58CC

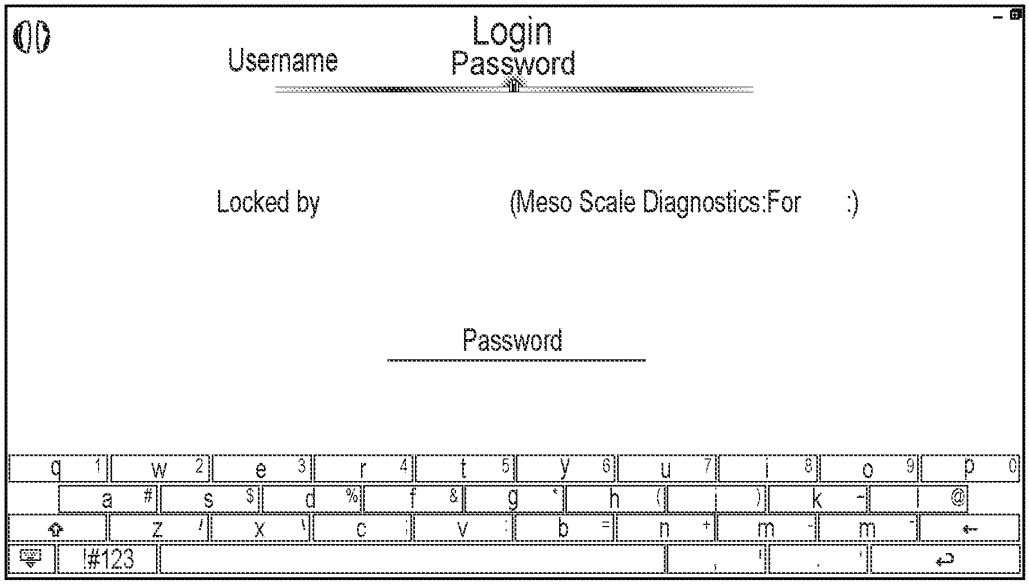

FIG. 58DD

Start

Team Instrument

Timestamp	Username	Module	Record ID	Type	Message	Category	Code	IP Address
07/15/2019 16:12:04 EDT		Reader	25NOOAH001	ACTION		RECORD	11725	
07/15/2019 16:12:04 EDT		Reader	25NOOAH001	INFO		RECORD	17518	
07/15/2019 16:11:57 EDT		Reader	25NOOAH001	INFO		RECORD	17710	
07/15/2019 16:11:53 EDT		Reader	*25NOOAH001*	INFO		RECORD	17520	
07/15/2019 16:11:52 EDT		Reader		INFO		SYSTEM	11696	
07/15/2019 16:11:51 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:47 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:43 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:39 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:35 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:32 EDT		Reader		ACTION		SYSTEM	11651	
07/15/2019 16:11:31 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:21 EDT		Reader	24NOOAG001	INFO		RECORD	11701	
07/15/2019 16:11:53 EDT		Reader	*24NOOAG001d*	INFO		RECORD	17520	
07/15/2019 16:11:21 EDT		Reader		ACTION		SYSTEM	11696	
07/15/2019 16:08:40 EDT		Reader	23NOOAY001	INFO		RECORD	17518	
07/15/2019 16:08:34 EDT		Reader	23NOOAY001	INFO		RECORD	11710	
07/15/2019 16:08:30 EDT		Reader	23NOOAY001	INFO		RECORD	11701	
07/15/2019 16:08:29 EDT		Reader		INFO		SYSTEM	11696	

FIG. 58EE

Start

Export Audit Trial
Copy to Clipboard
Audit Trail
Reader
Software Configuration
UserGuides
Change Password
About Methodical Mind
Logout
Exit Methodical Mind

Team Instrument

Timestamp	Username	Module	Record ID	Type	Message	Category	Code	IP Address
07/15/2019 16:12:04 EDT		Reader	25NOOAH001	ACTION		RECORD	11725	
07/15/2019 16:12:04 EDT		Reader	25NOOAH001	INFO		RECORD	17518	
07/15/2019 16:11:57 EDT		Reader	25NOOAH001	INFO		RECORD	17710	
07/15/2019 16:11:53 EDT		Reader	*25NOOAH001*	INFO		RECORD	17520	
07/15/2019 16:11:52 EDT		Reader		INFO		SYSTEM	11696	
07/15/2019 16:11:51 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:47 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:43 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:39 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:35 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:32 EDT		Reader		ACTION		SYSTEM	11651	
07/15/2019 16:11:31 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:21 EDT		Reader	24NOOAG001	INFO		RECORD	11701	
07/15/2019 16:11:53 EDT		Reader	*24NOOAG001d*	INFO		RECORD	17520	
07/15/2019 16:11:21 EDT		Reader		ACTION		SYSTEM	11696	
07/15/2019 16:08:40 EDT		Reader	23NOOAY001	INFO		RECORD	17518	
07/15/2019 16:08:34 EDT		Reader	23NOOAY001	INFO		RECORD	11710	
07/15/2019 16:08:30 EDT		Reader	23NOOAY001	INFO		RECORD	11701	
07/15/2019 16:08:29 EDT		Reader		INFO		SYSTEM	11696	

FIG. 58FF

Start

Team Instrument

Timestamp	Username	Module	Record ID	Type	Message	Category	Code	IP Address
07/15/2019 16:12:04 EDT		Reader	25NOOAH001	ACTION		RECORD	11725	
07/15/2019 16:12:04 EDT		Reader	25NOOAH001	INFO		RECORD	17518	
07/15/2019 16:11:57 EDT		Reader	25NOOAH001	INFO		RECORD	17710	
07/15/2019 16:11:53 EDT		Reader	*25NOOAH001*	INFO		RECORD	17520	
07/15/2019 16:11:52 EDT		Reader		INFO		SYSTEM	11696	
07/15/2019 16:11:51 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:47 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:43 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:39 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:35 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:32 EDT		Reader		ACTION		SYSTEM	11651	
07/15/2019 16:11:31 EDT		Reader	24NOOAG001	INFO		RECORD	17518	
07/15/2019 16:11:21 EDT		Reader	24NOOAG001	INFO		RECORD	11701	
07/15/2019 16:11:53 EDT		Reader	*24NOOAG001d*	INFO		RECORD	17520	
07/15/2019 16:11:21 EDT		Reader		ACTION		SYSTEM	11696	
07/15/2019 16:08:40 EDT		Reader	23NOOAY001	INFO		RECORD	17518	
07/15/2019 16:08:34 EDT		Reader	23NOOAY001	INFO		RECORD	11710	
07/15/2019 16:08:30 EDT		Reader	23NOOAY001	INFO		RECORD	11701	
07/15/2019 16:08:29 EDT		Reader		INFO		SYSTEM	11696	

FIG. 58GG

Login

Username Password

Password

FIG. 58HH

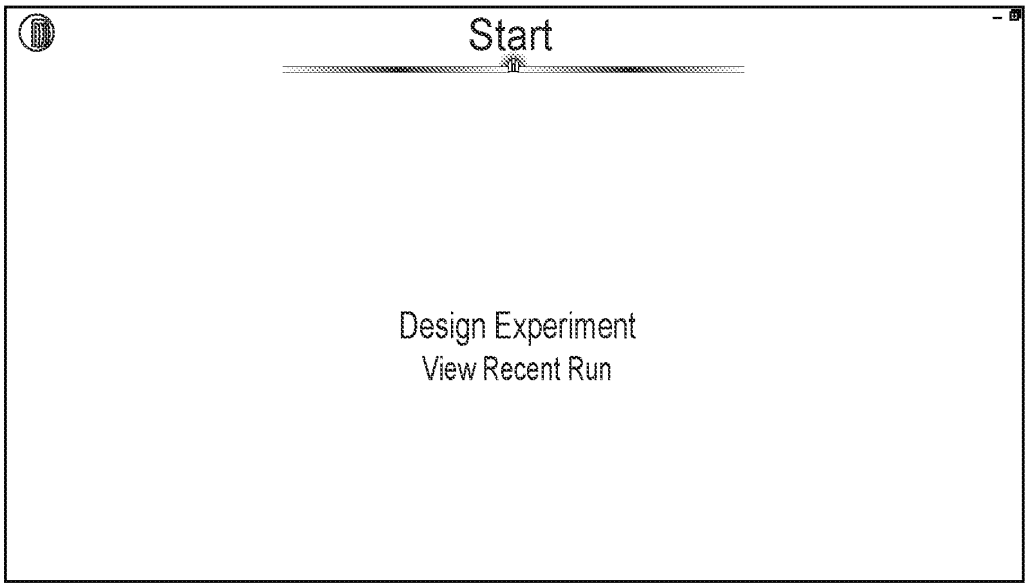

FIG. 59A

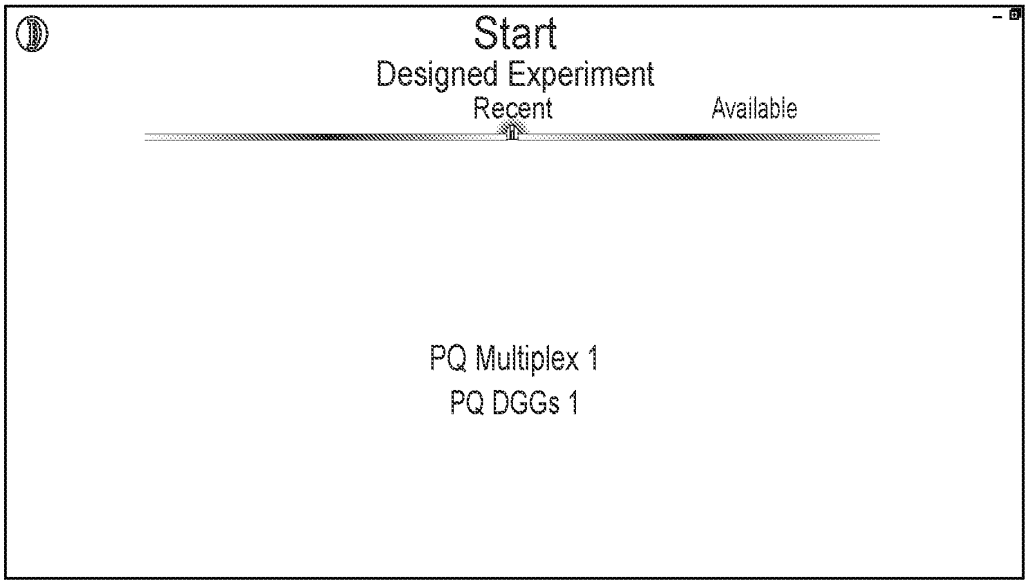

FIG. 59B

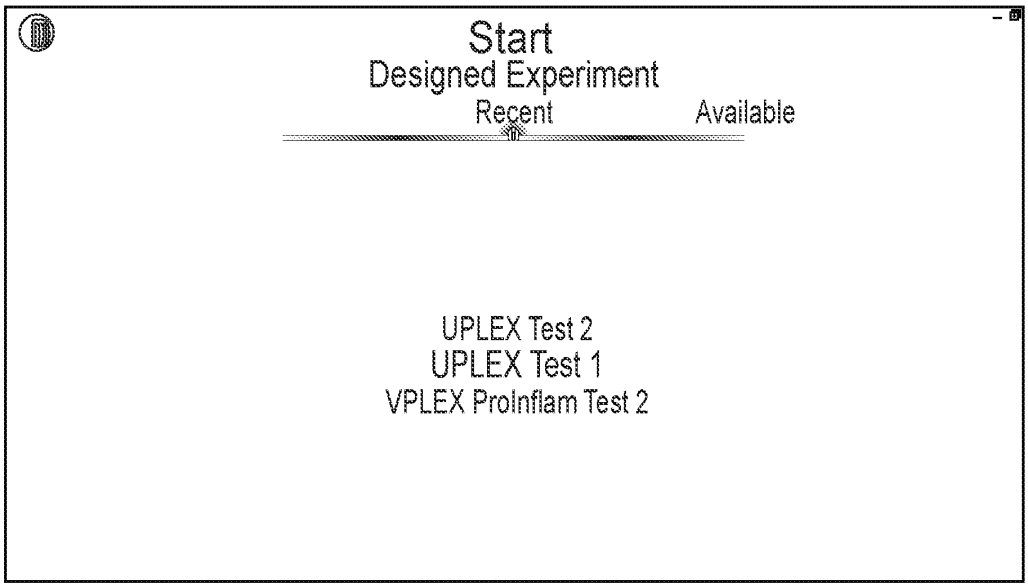

FIG. 59C

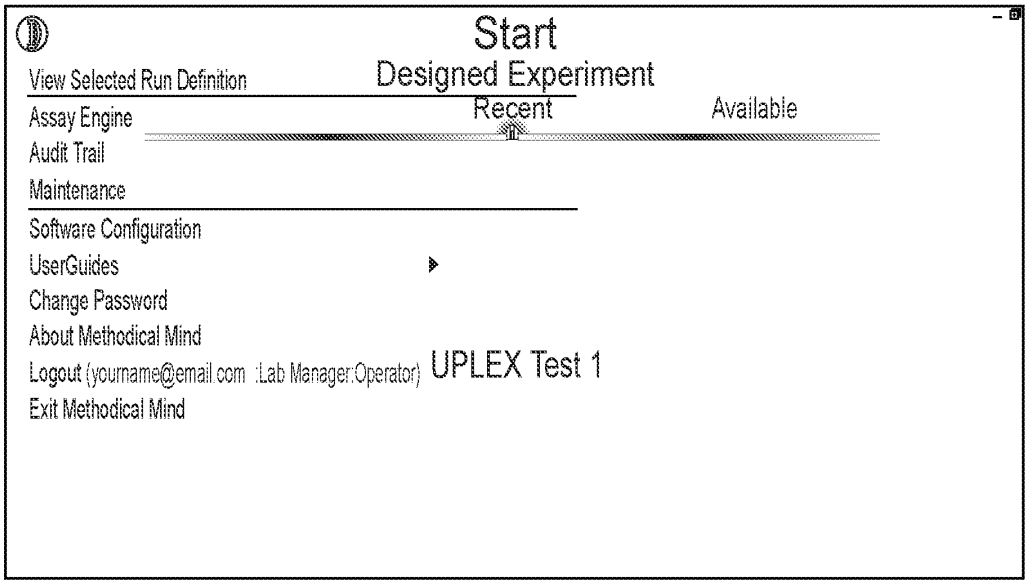

FIG. 59D

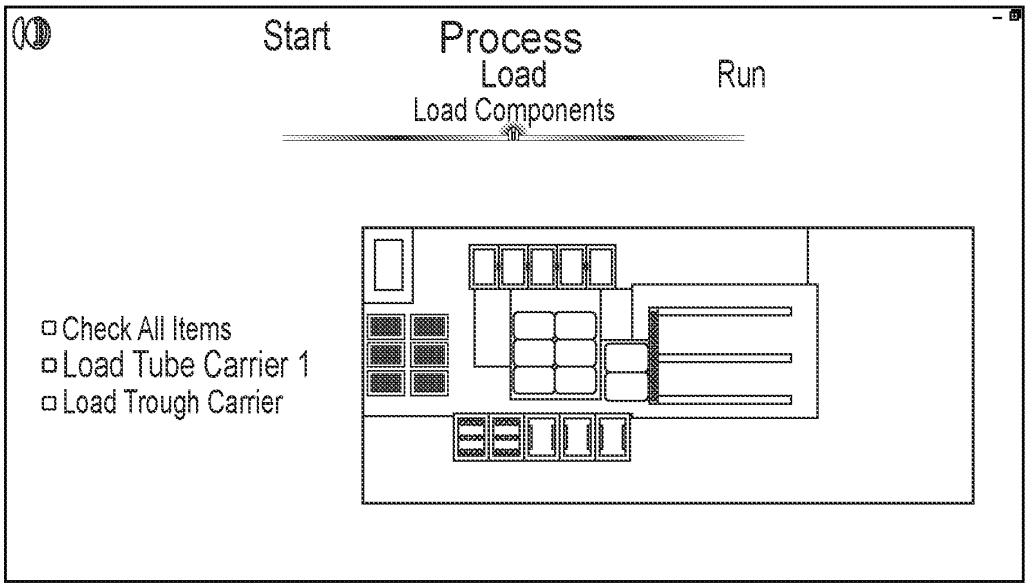

FIG. 59E

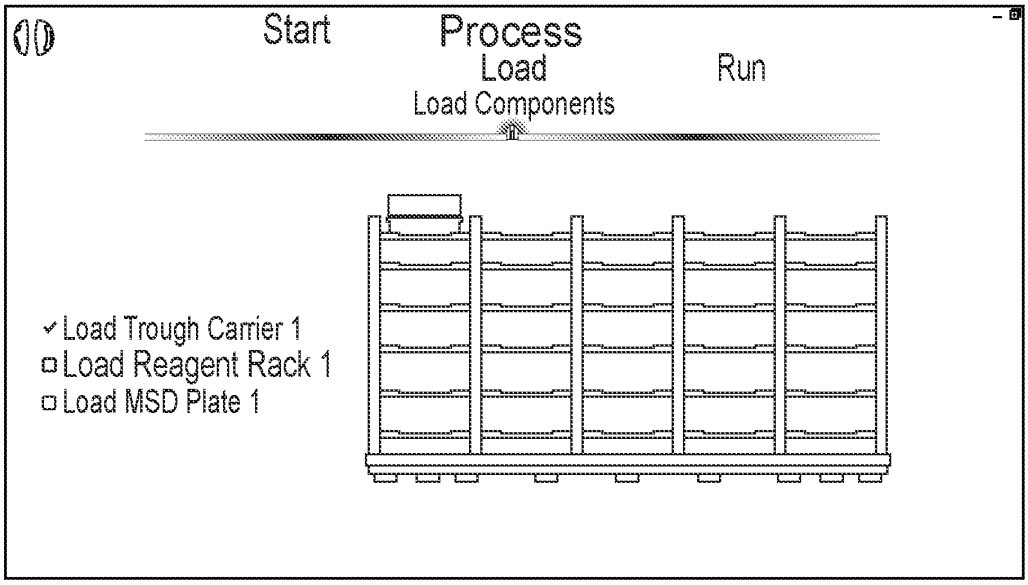

FIG. 59F

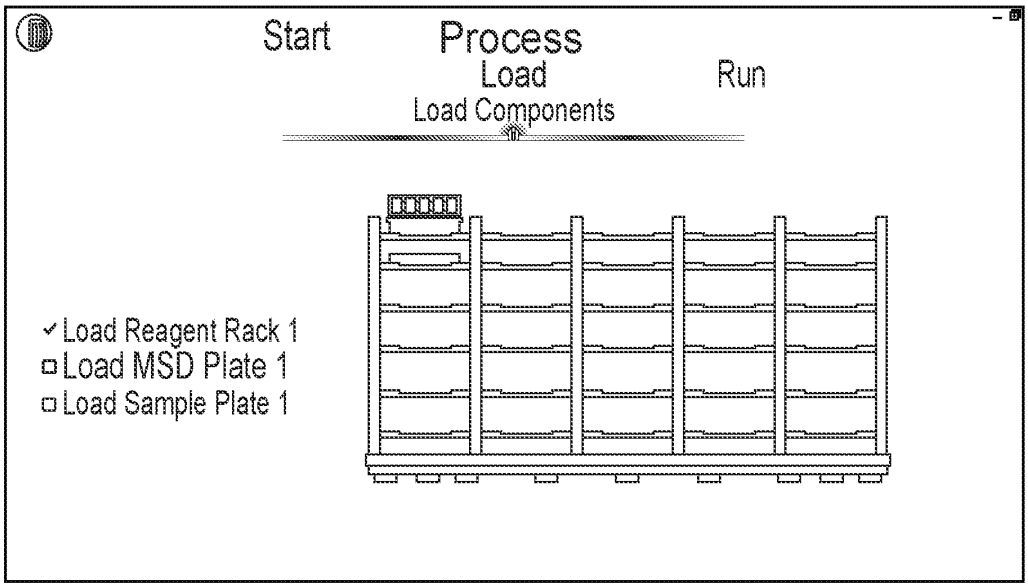

FIG. 59G

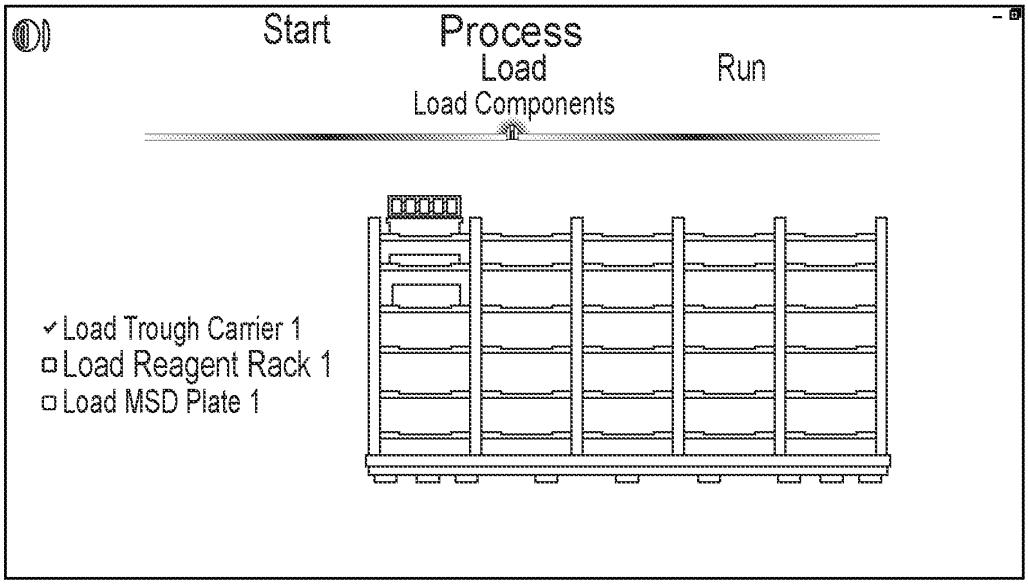

FIG. 59H

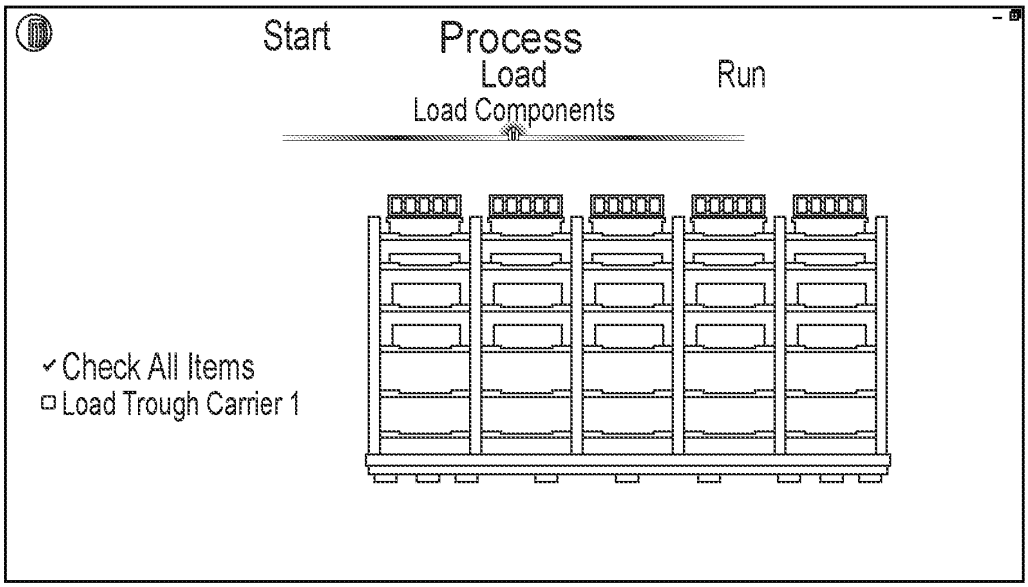

FIG. 59I

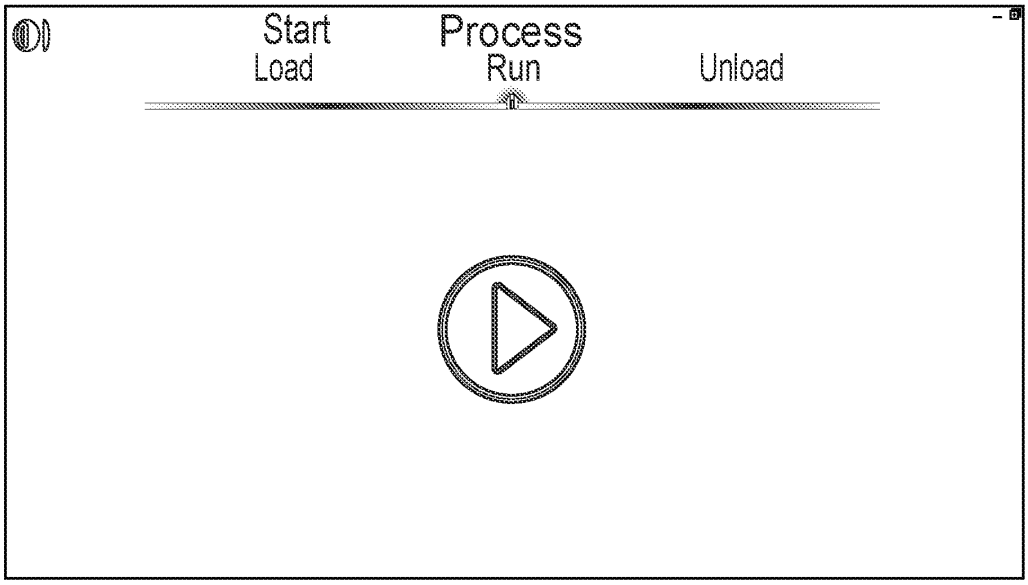

FIG. 59J

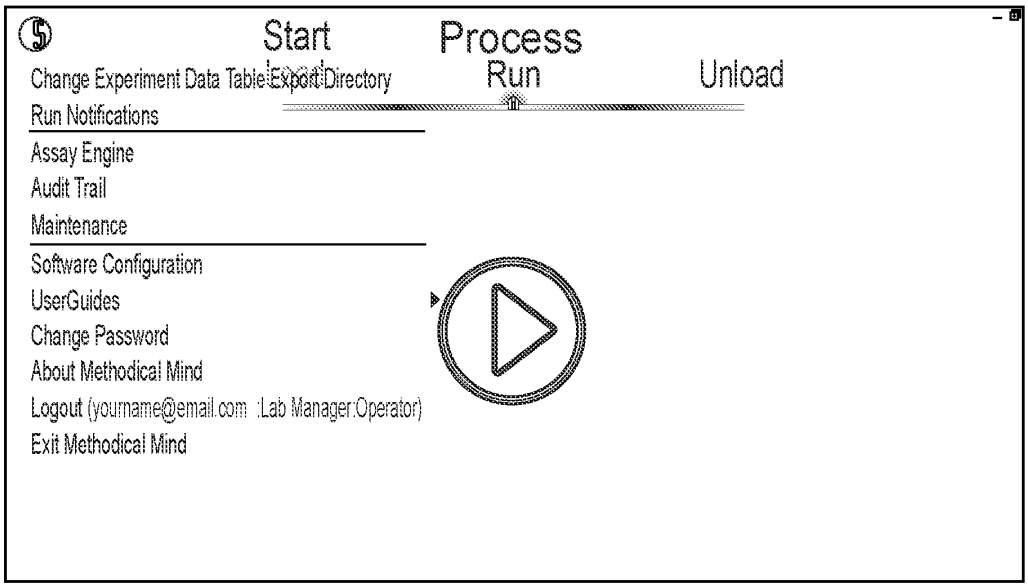

FIG. 59K

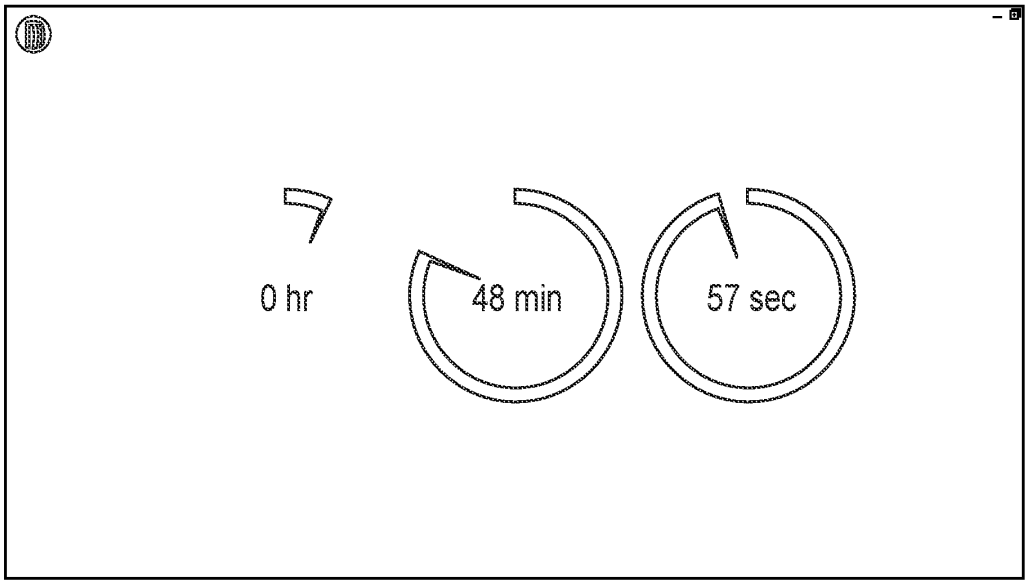

FIG. 59L

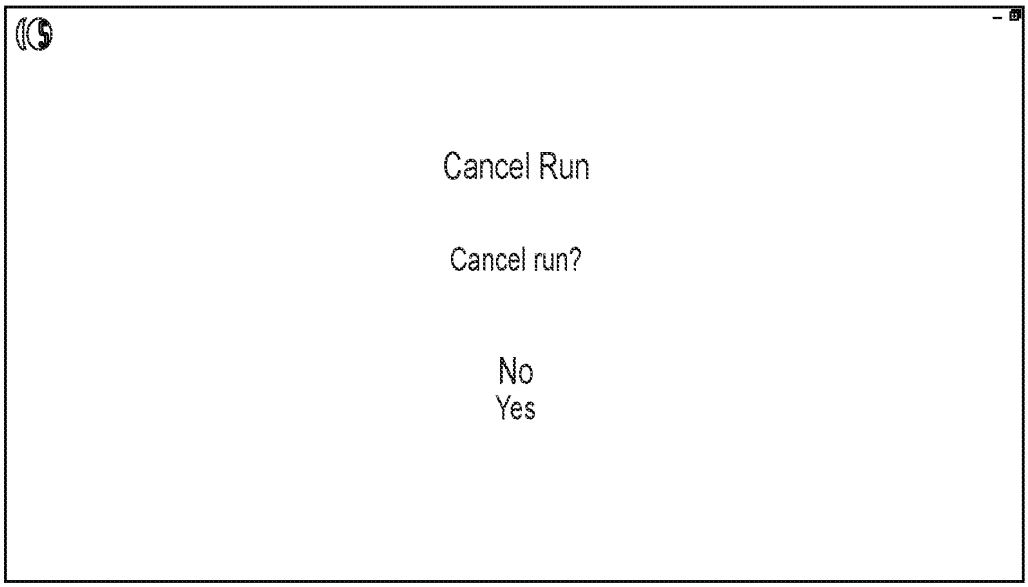

FIG. 59M

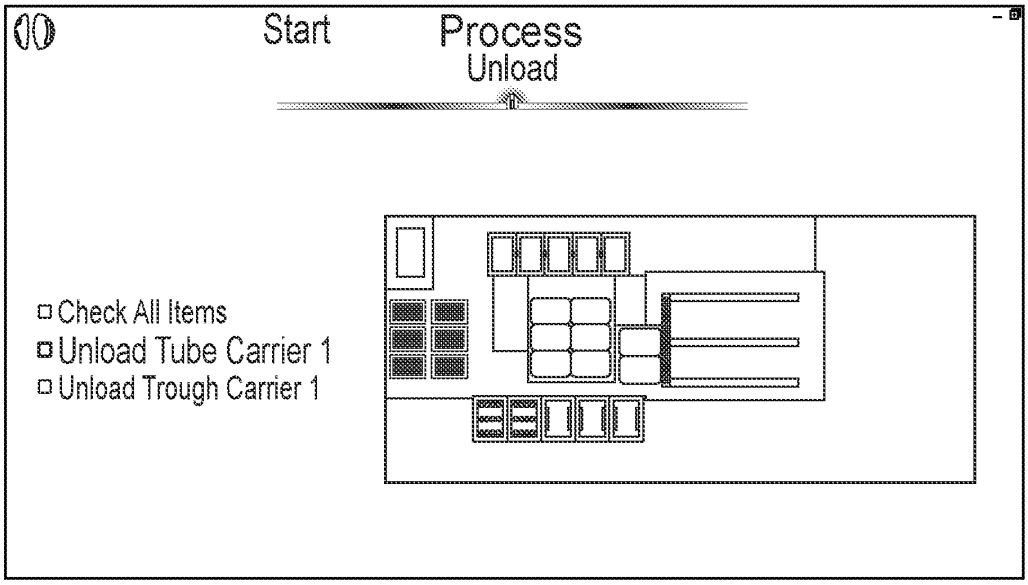

FIG. 59N

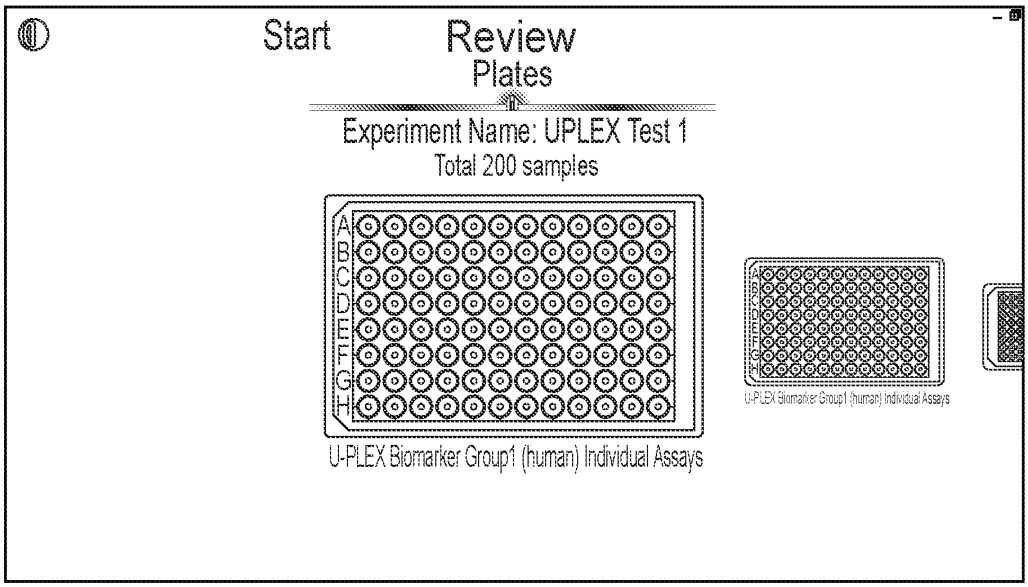

FIG. 59O

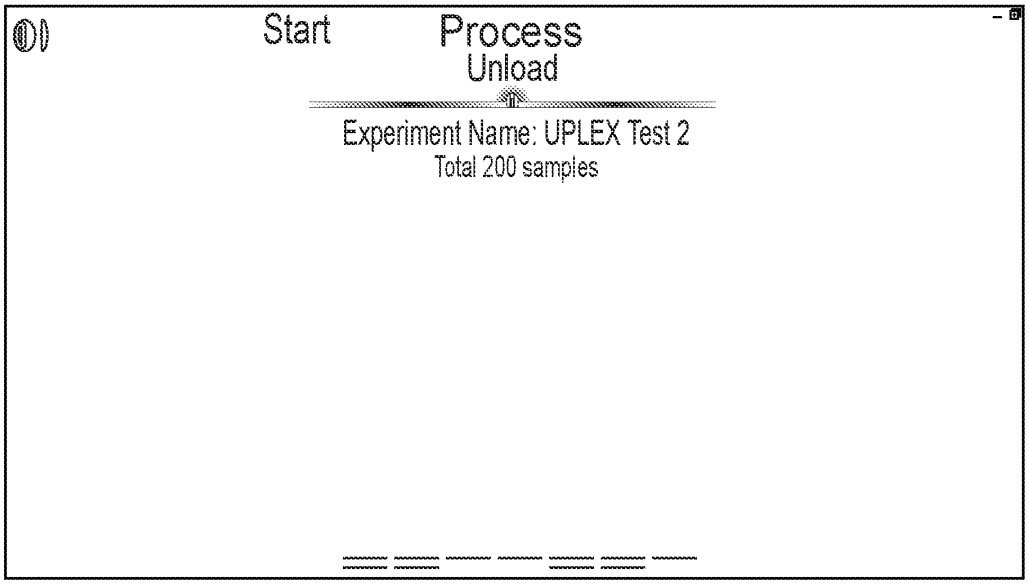

FIG. 59P

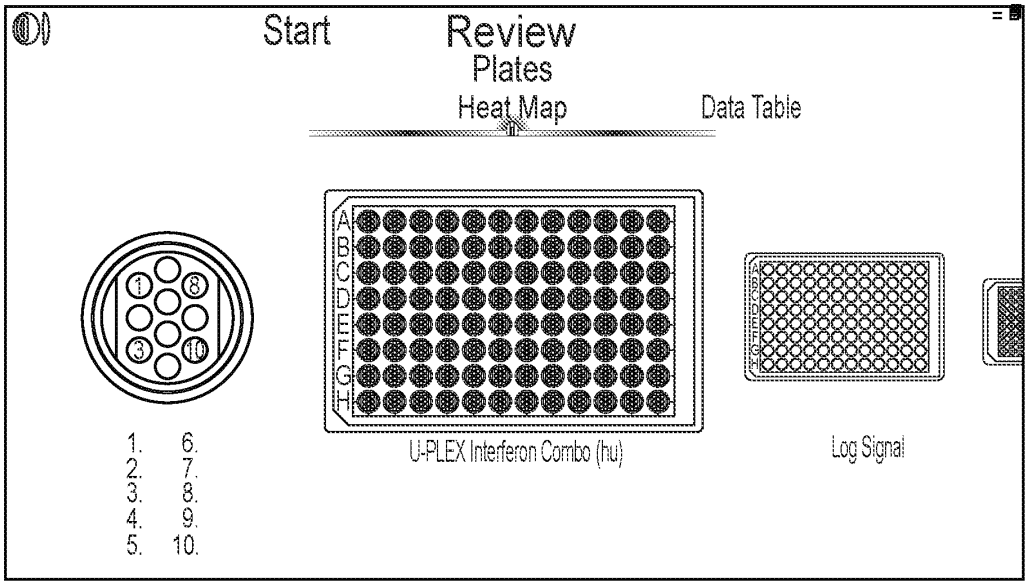

FIG. 59Q

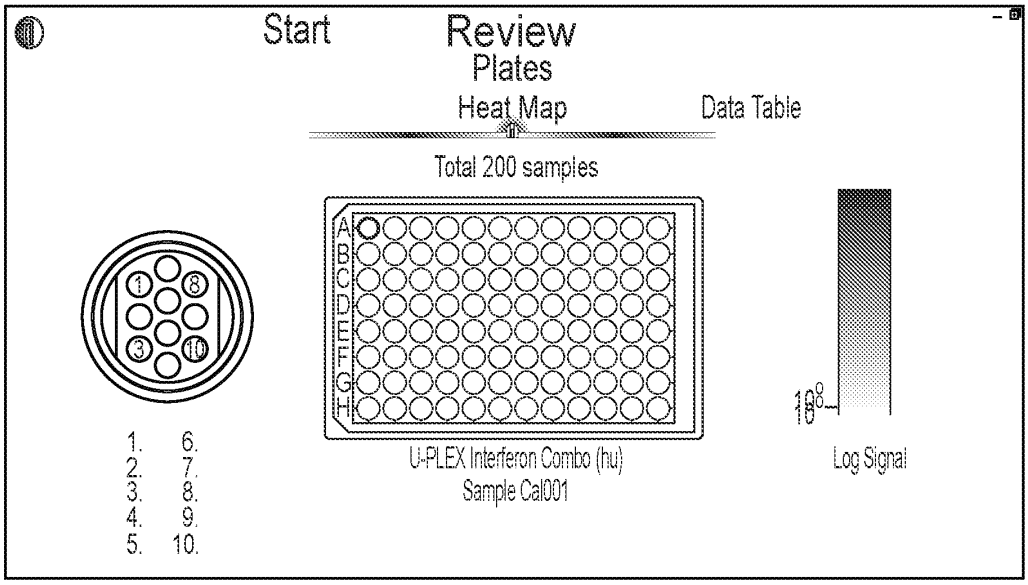

FIG. 59R

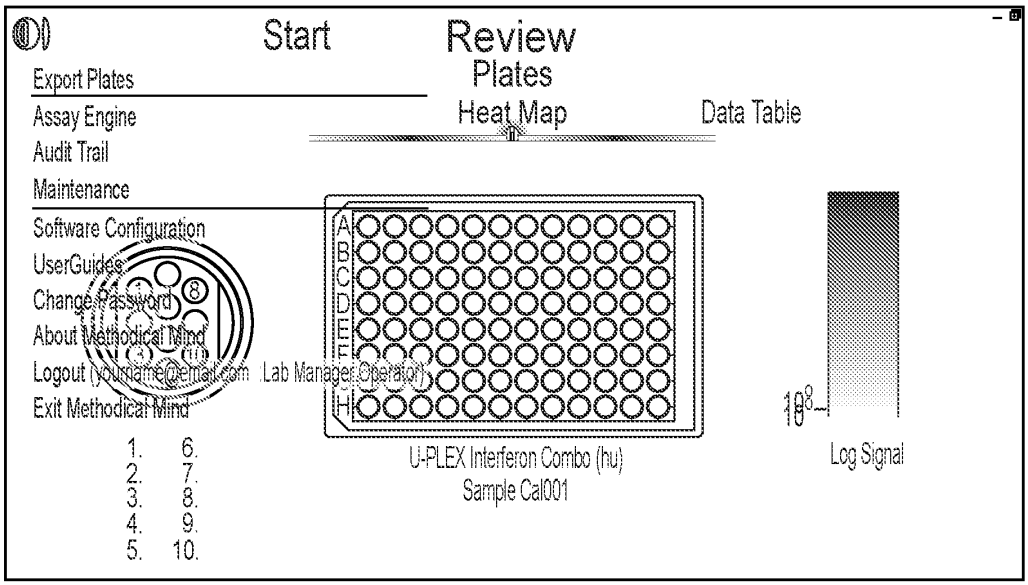

FIG. 59S

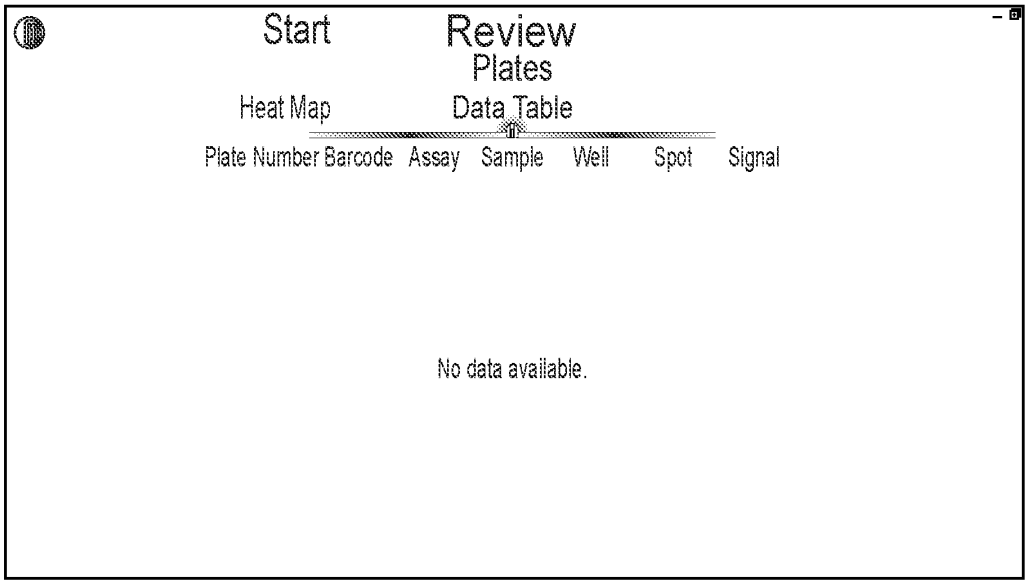

FIG. 59T

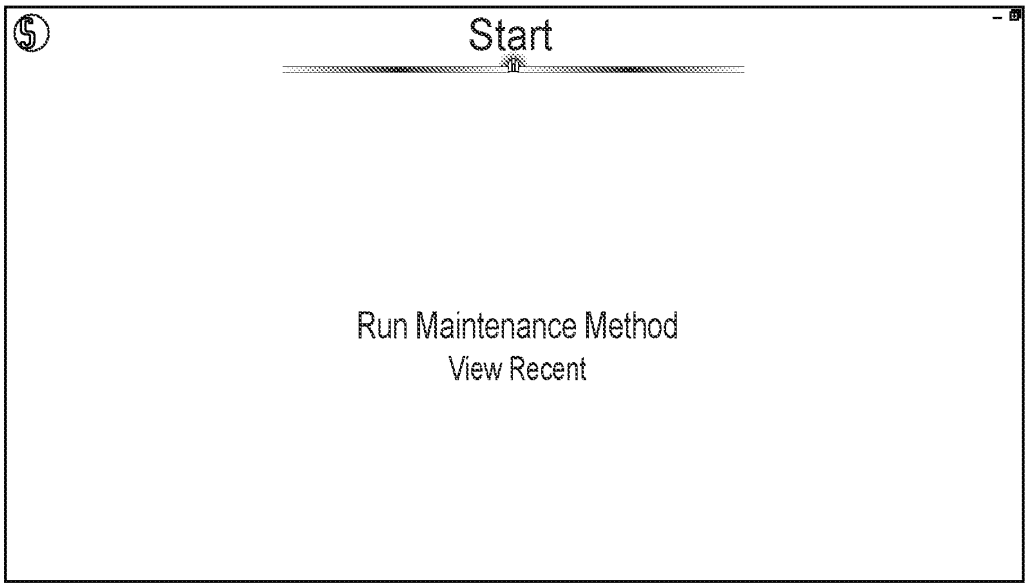

FIG. 60A

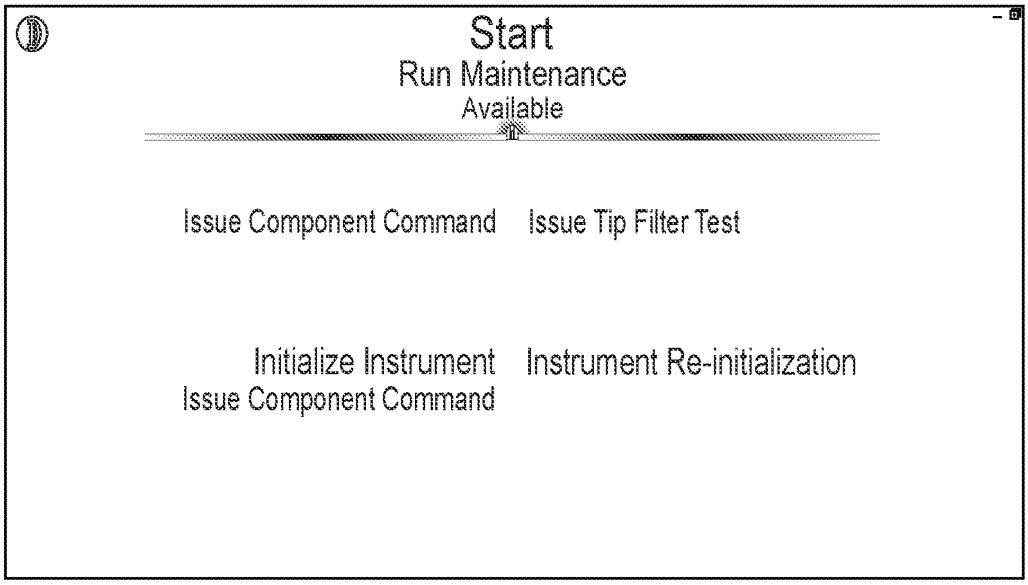

FIG. 60B

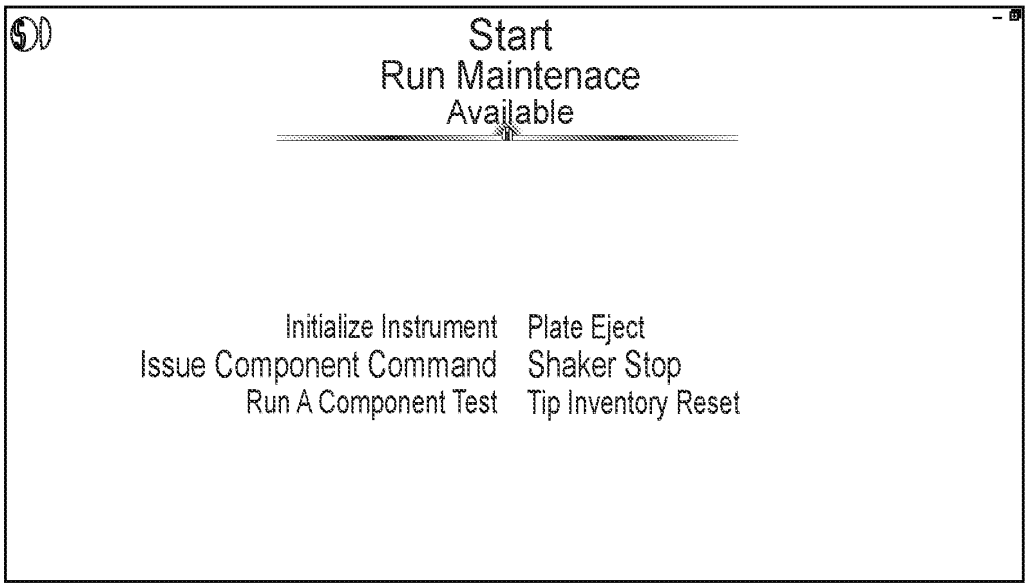

FIG. 60C

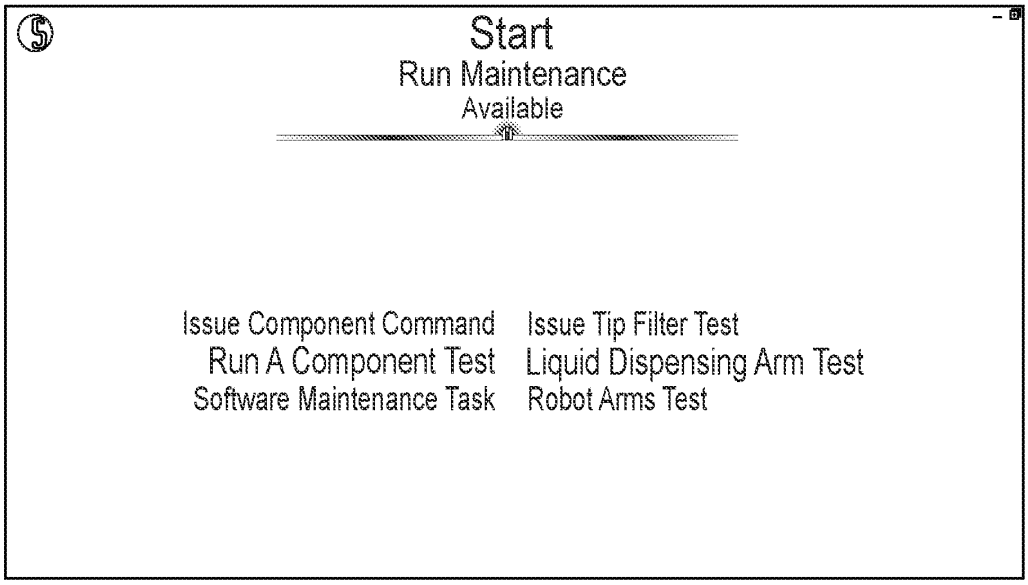

FIG. 60D

FIG. 60E

FIG. 60F

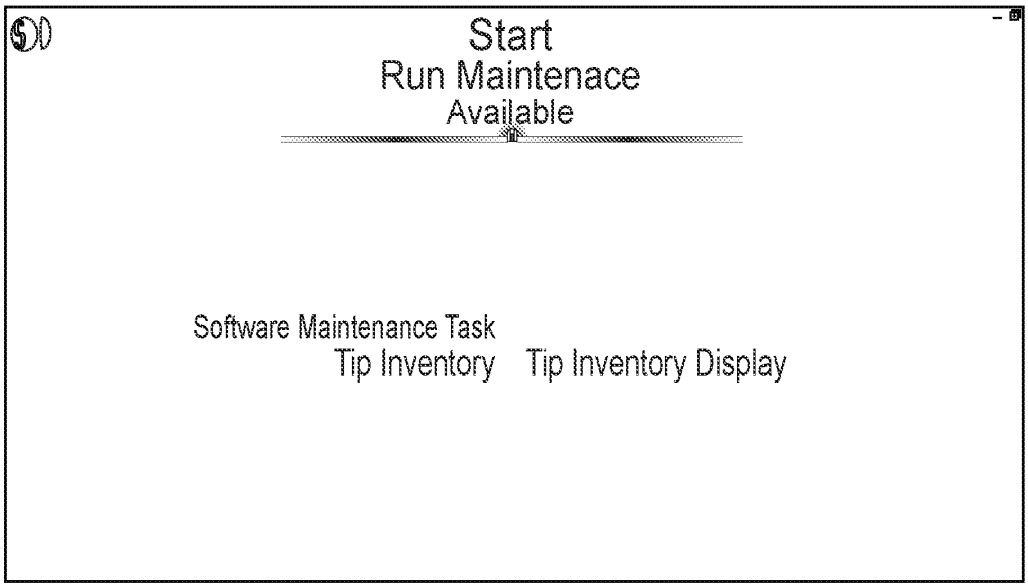

FIG. 60G

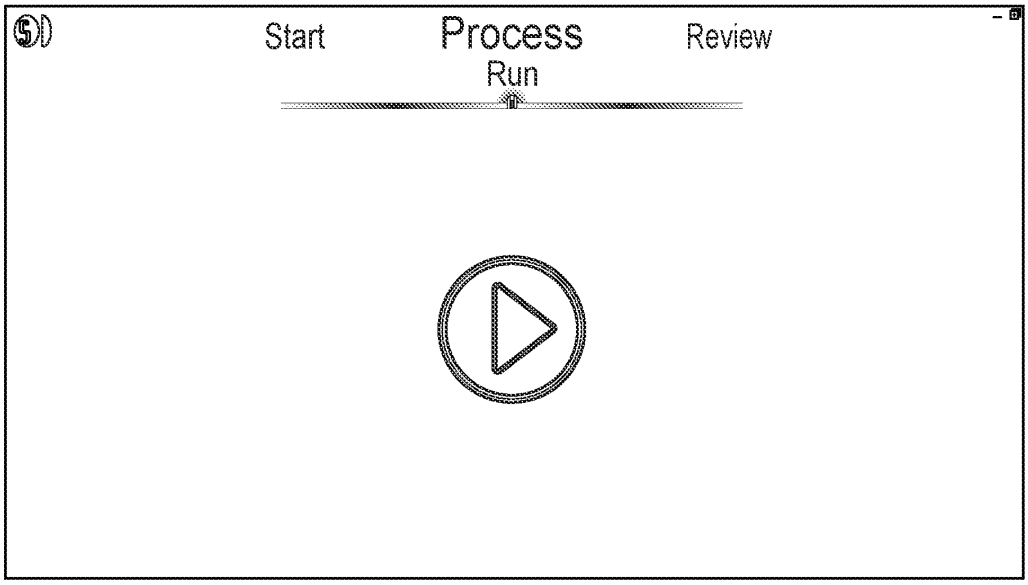

FIG. 60H

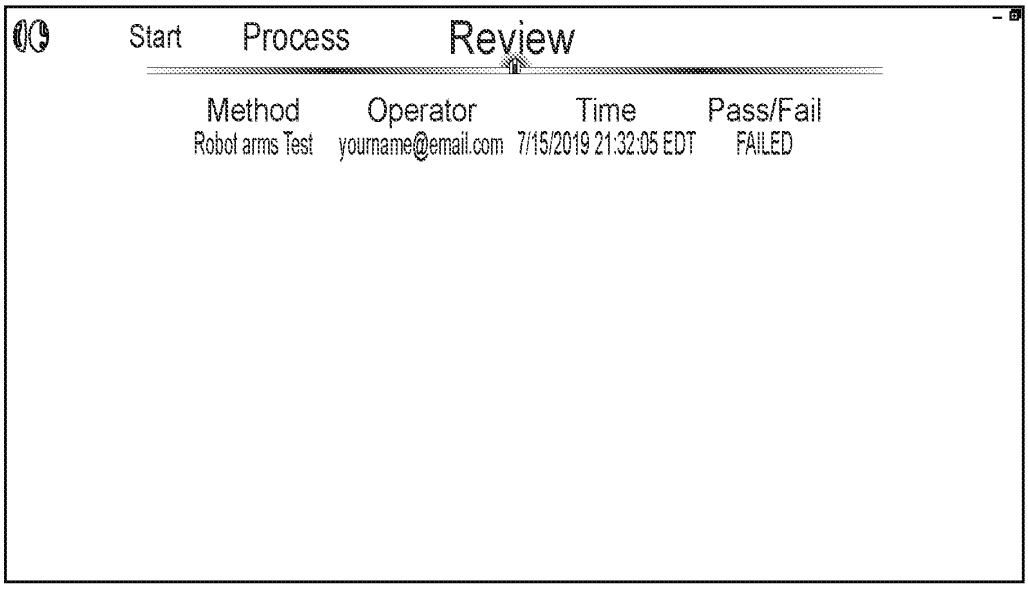
Start
Process
Review
Method
Operator
Time
Pass/Fail
Robot arms Test
yourname@email.com
7/15/2019 21:32:05 EDT
FAILED

FIG. 60I

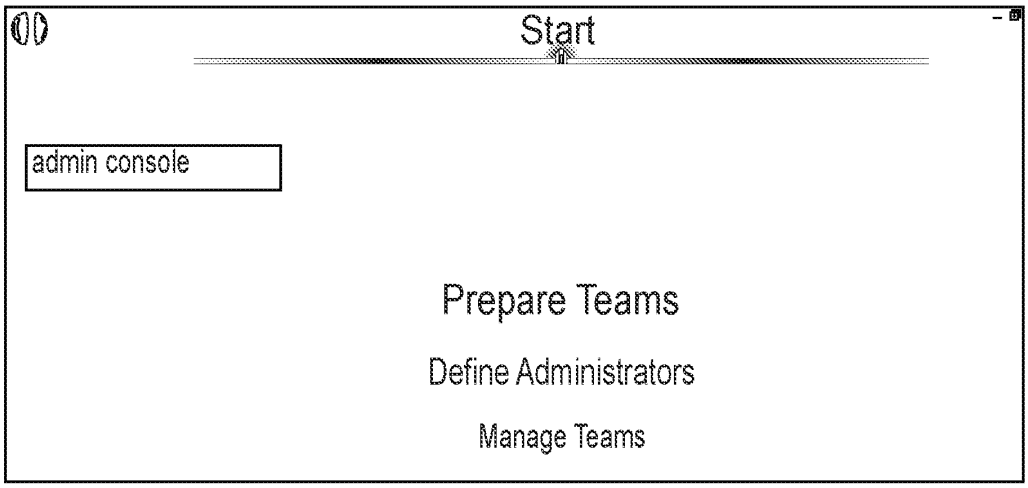

FIG. 61A

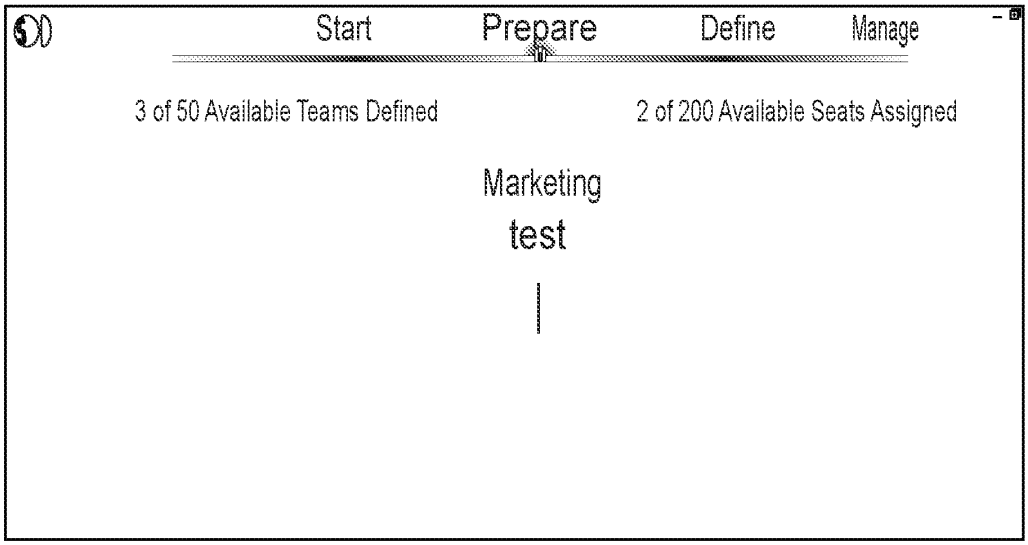

FIG. 61B

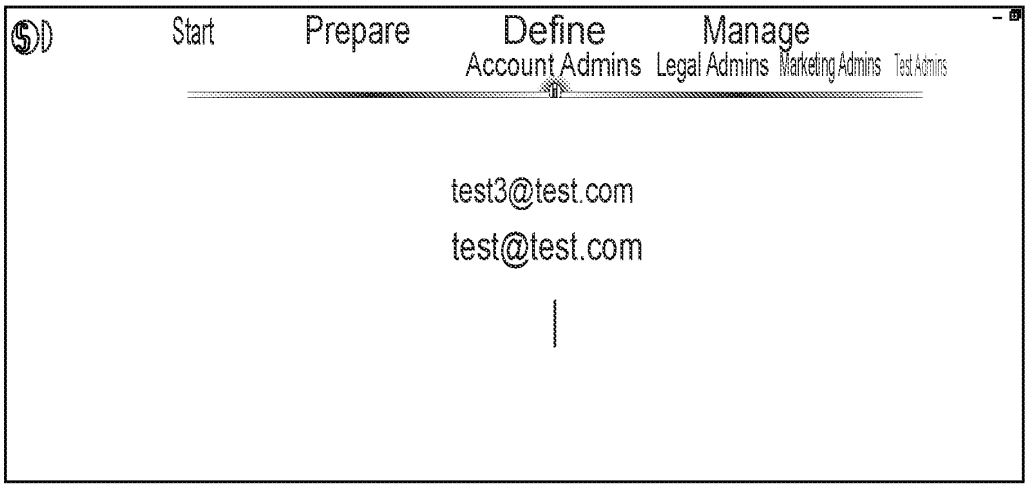

FIG. 61C

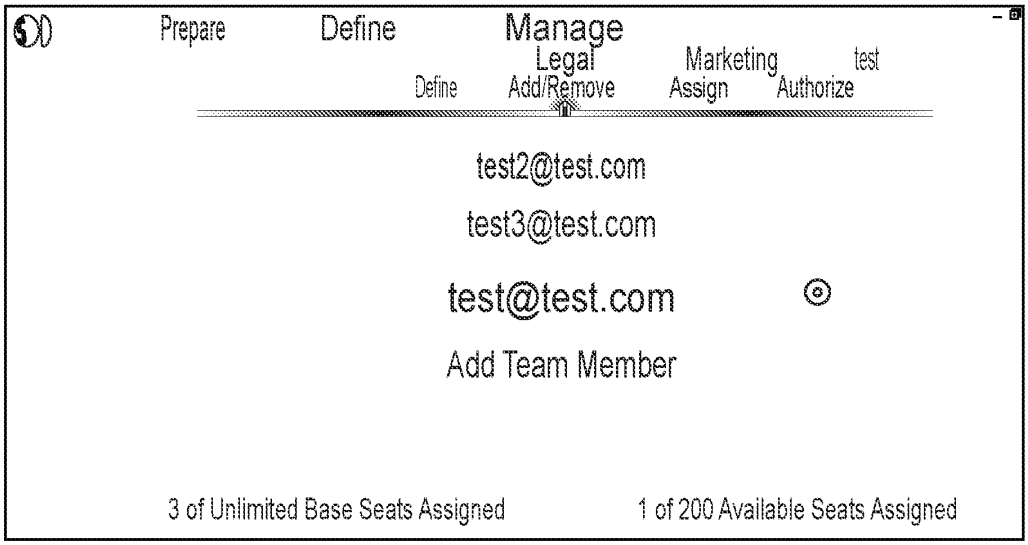

FIG. 61D

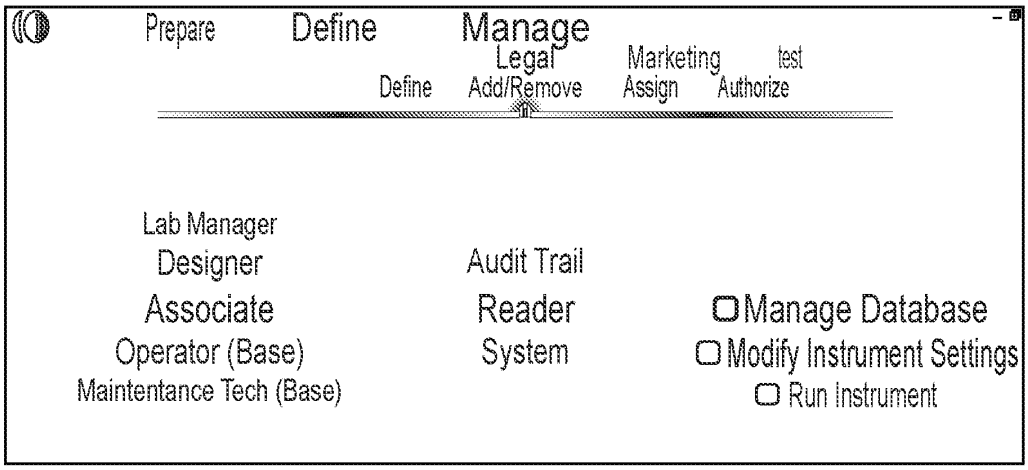

FIG. 61E

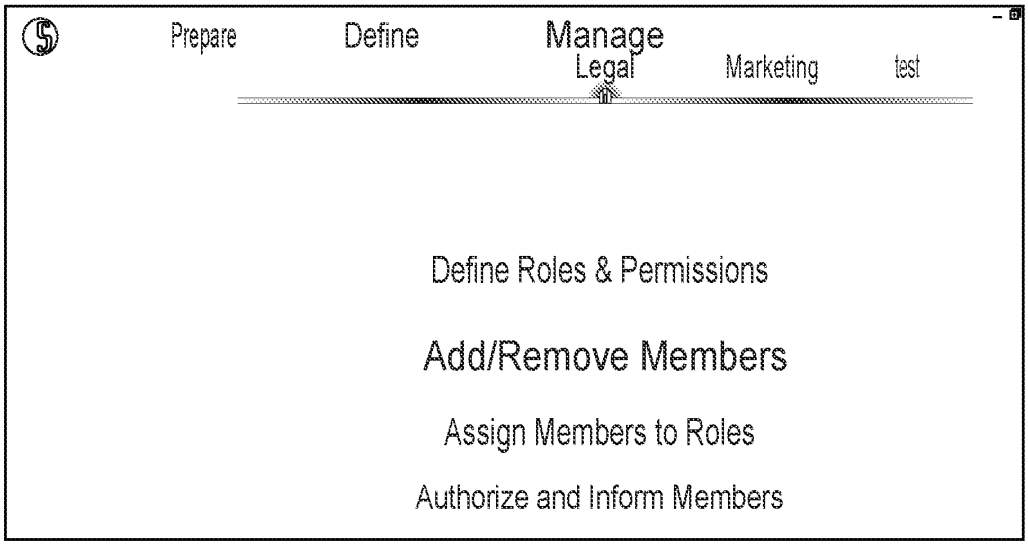

FIG. 61F

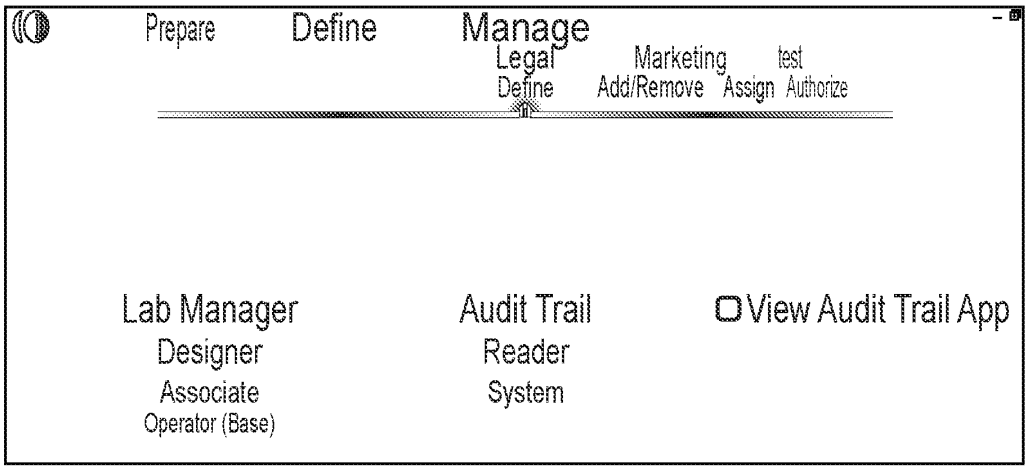

FIG. 61G

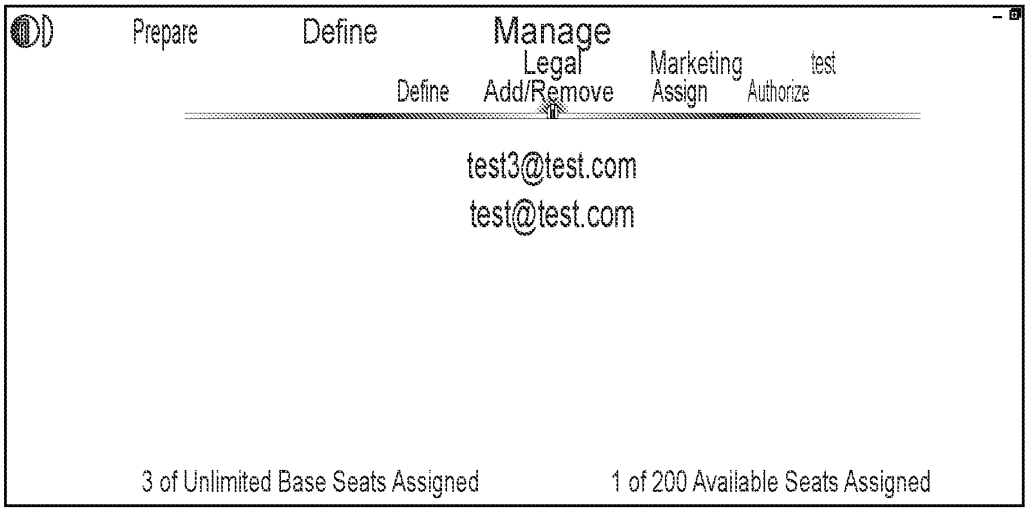

FIG. 61H

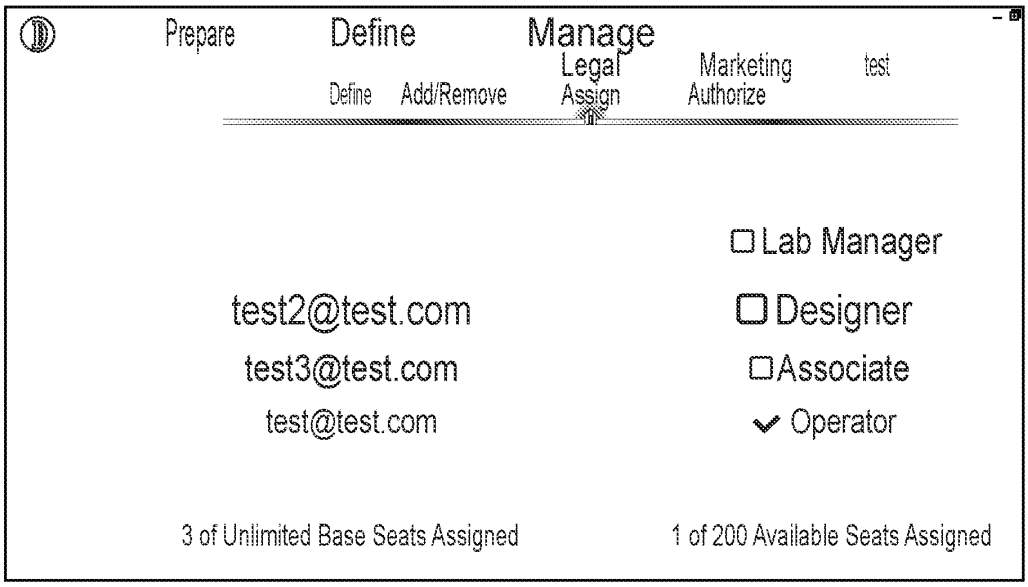

FIG. 61I

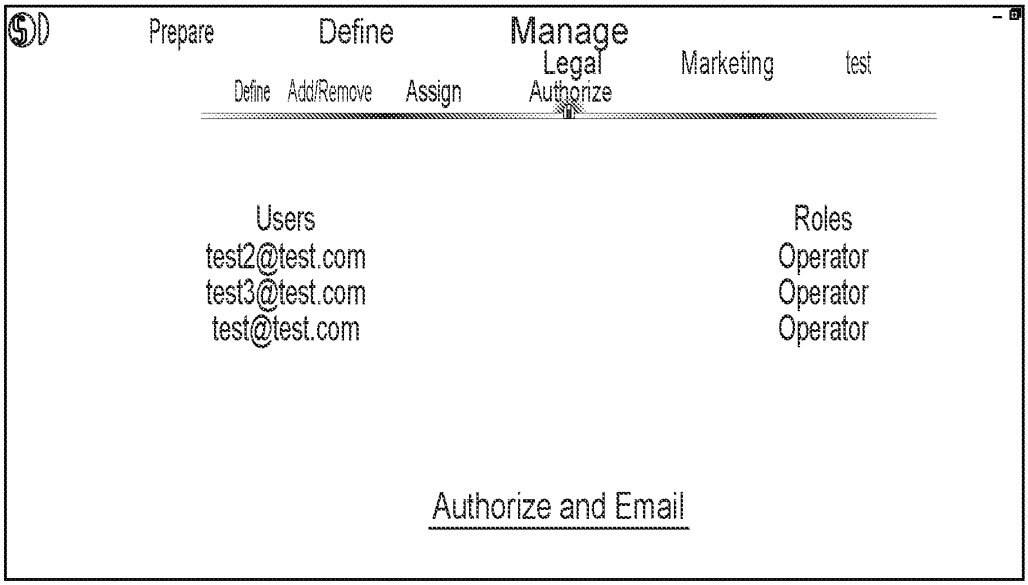

FIG. 61J

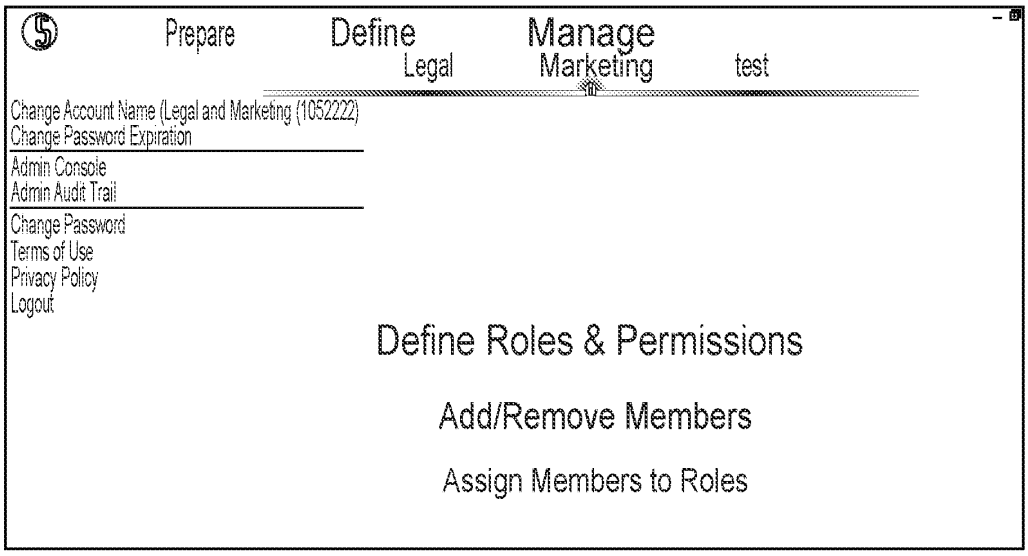

FIG. 61K

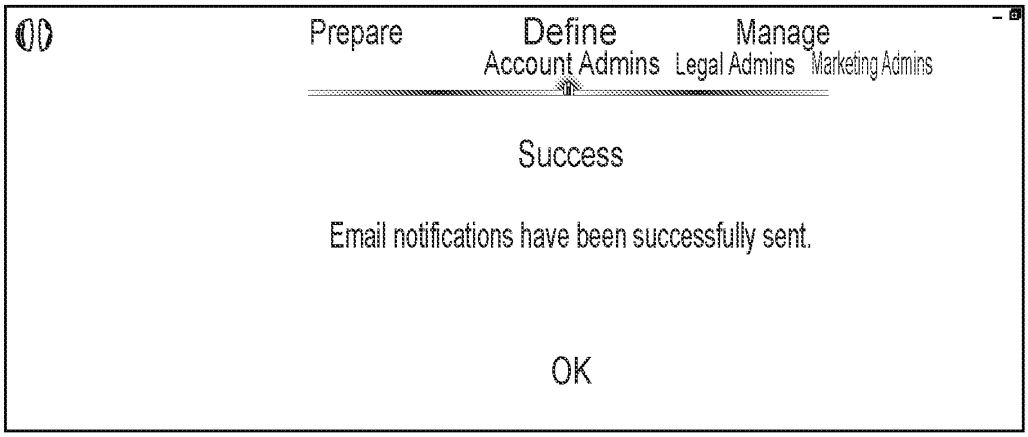

FIG. 61L

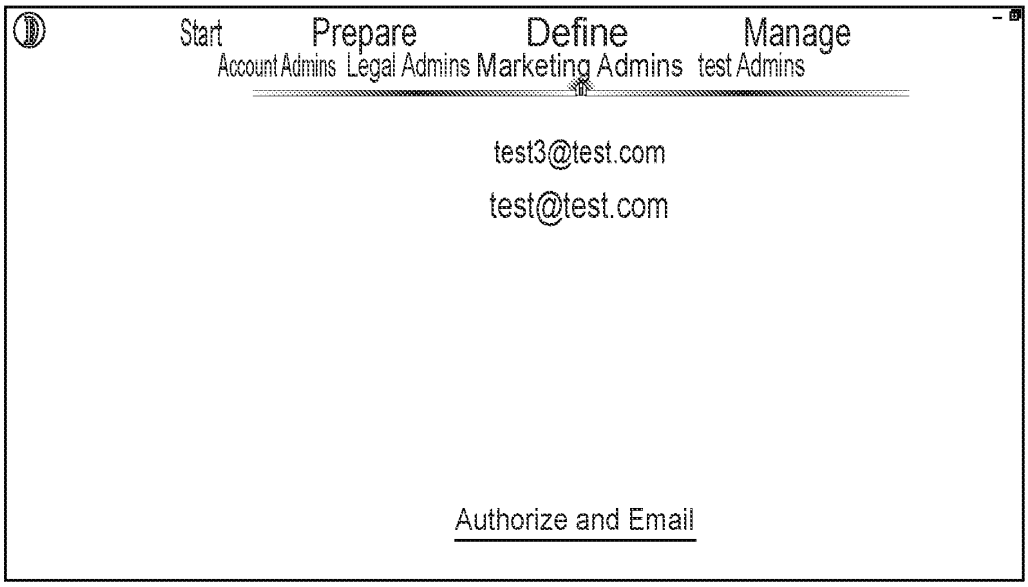

FIG. 61M

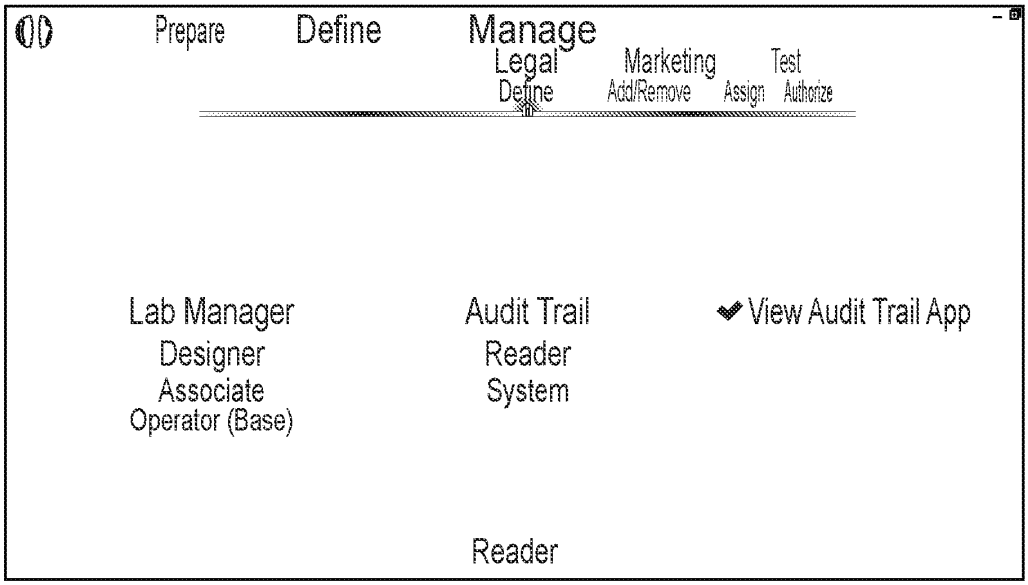

FIG. 61N

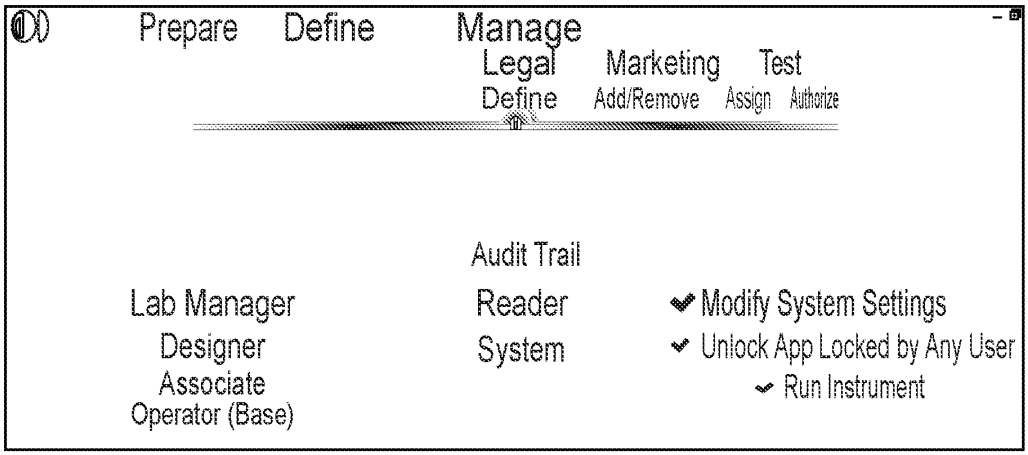

FIG. 61O

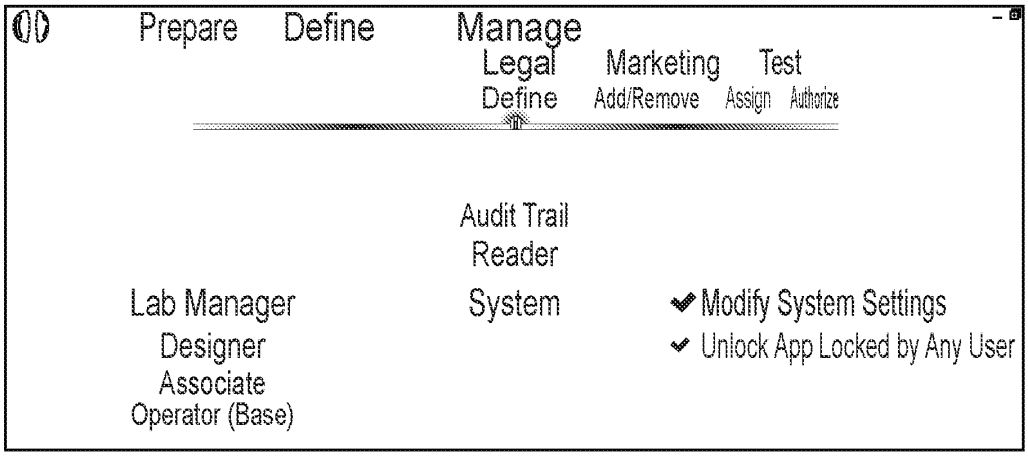

FIG. 61P

Start

All Account Legal

Timestamp	User Name	Type	Message	Code	IP Address
07/14/2019 16:50		INFO	Permission View Audit Trail App added to role Maintenance Tech	18068	
07/14/2019 16:49		INFO	Permission View Audit Trail App removed from role Lab Manager	18069	
07/14/2019 16:49		INFO	Permission View Audit Trail App added from role Lab Manager	18068	
07/14/2019 16:46		INFO	Account Admin test3@test.com added	18053	
07/14/2019 16:46		INFO	Account Admin test2@test.com added	18053	
07/14/2019 16:46		INFO	Account Admin test1@test.com added	18053	
07/14/2019 16:46		INFO		18063	
07/14/2019 16:43		INFO	User test3@test.com added to team Legal	18062	
07/14/2019 16:43		INFO	User test2@test.com added to team Legal	18062	

FIG. 61Q

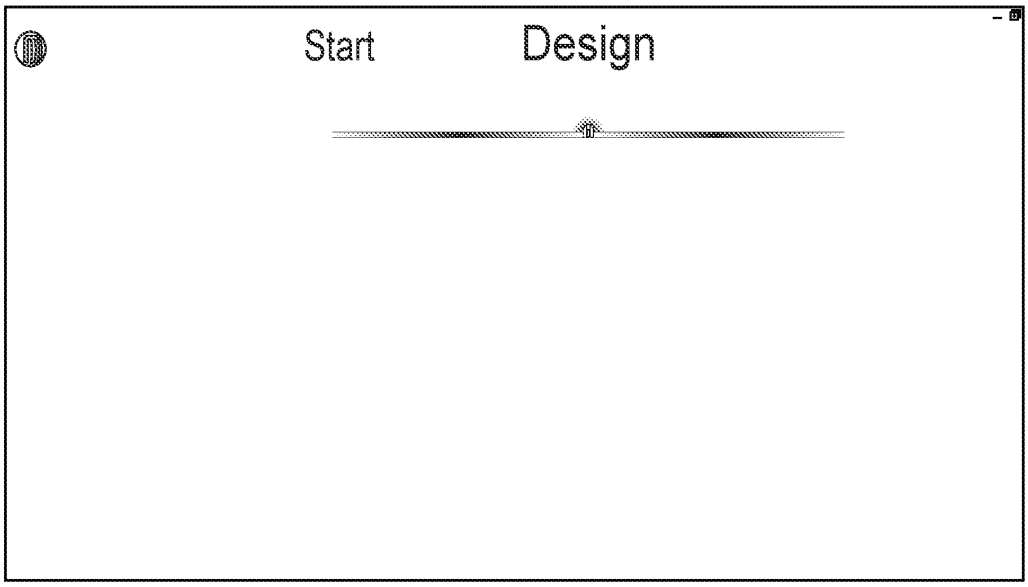

FIG. 62A

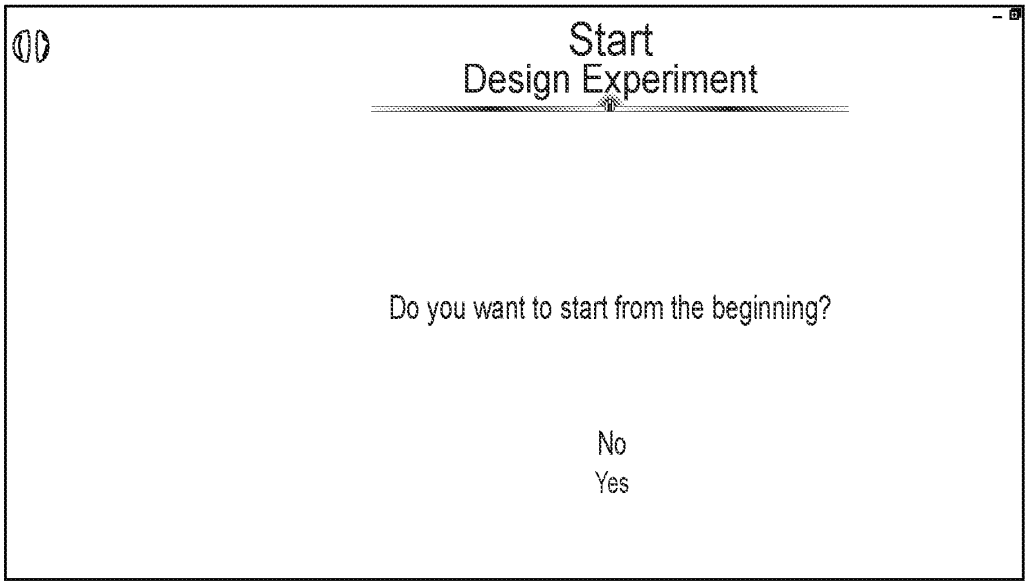

FIG. 62B

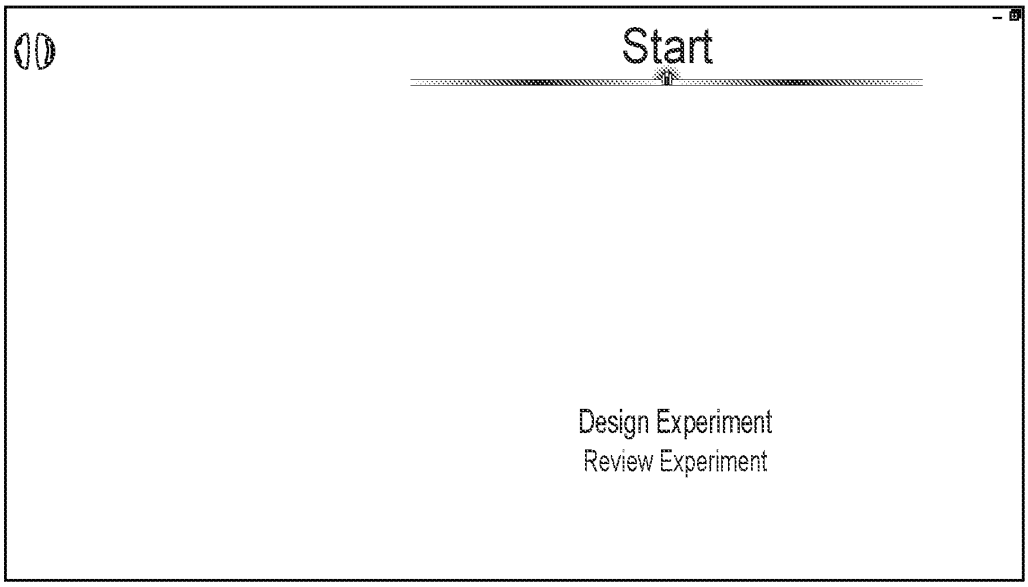

FIG. 62C

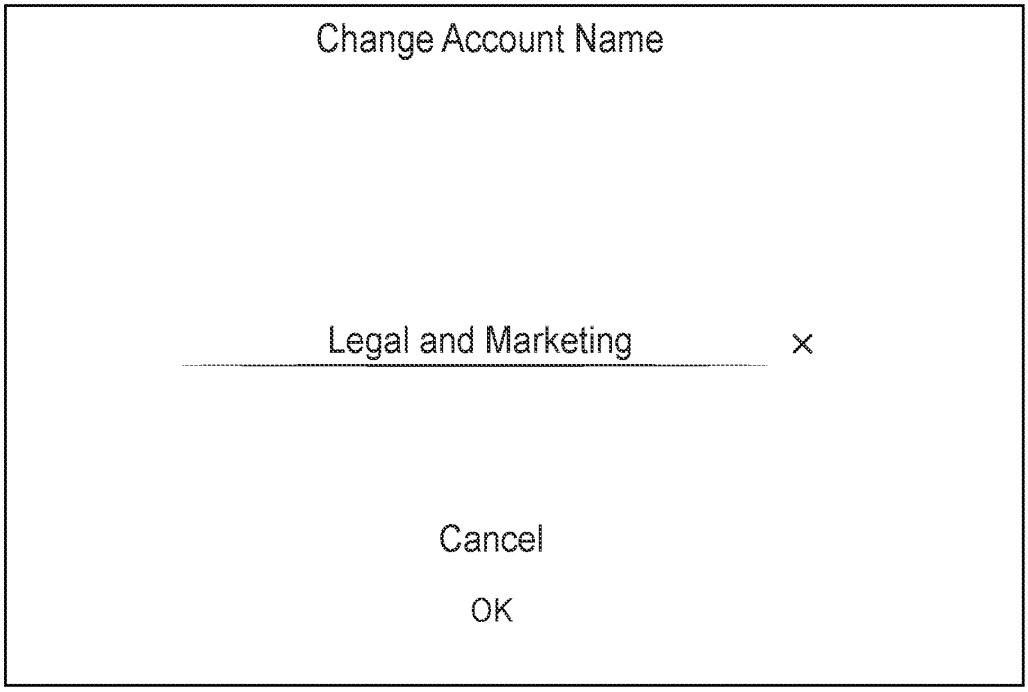

FIG. 62D

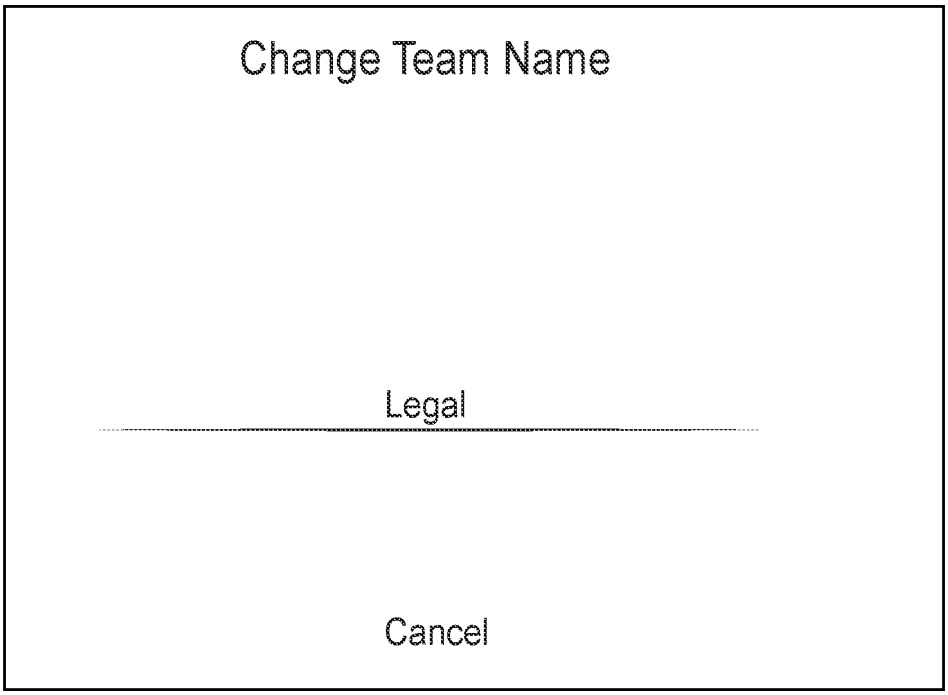

FIG. 62E

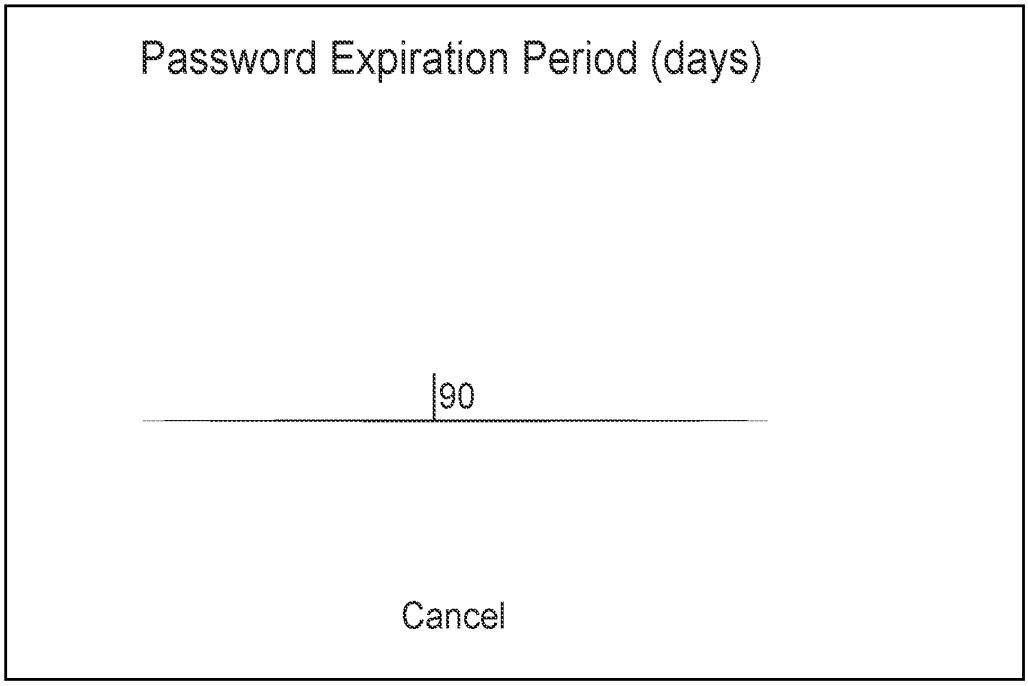

FIG. 62F

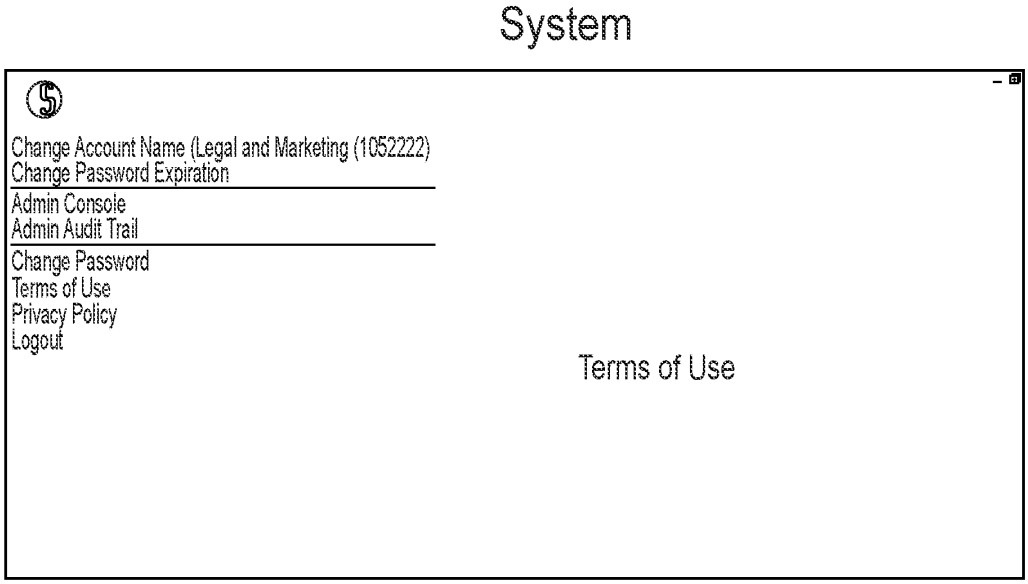

FIG. 62G

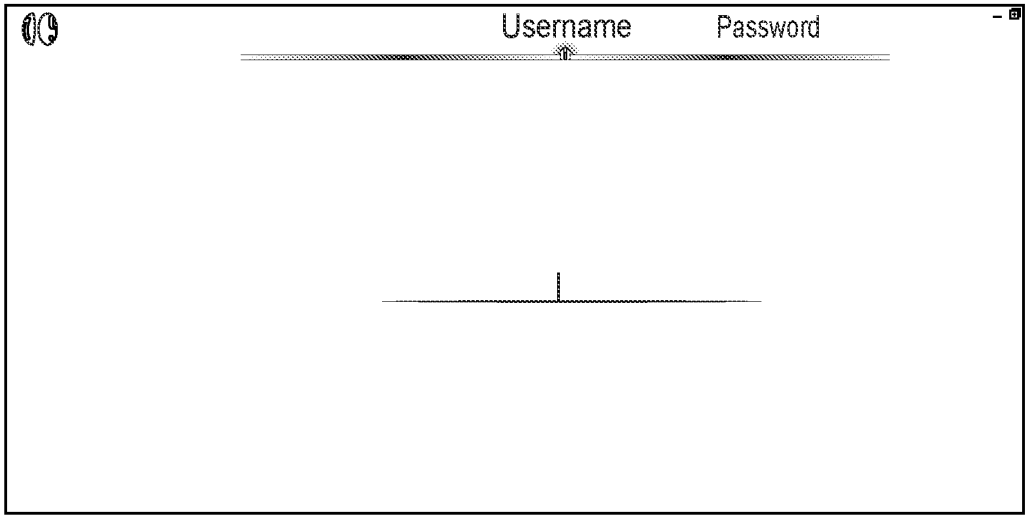

FIG. 62H

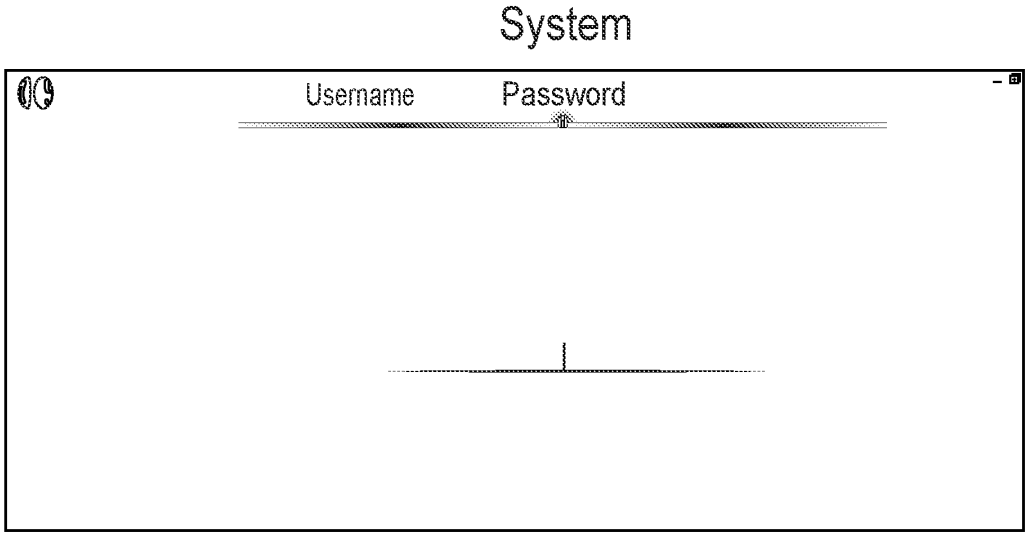

FIG. 62I

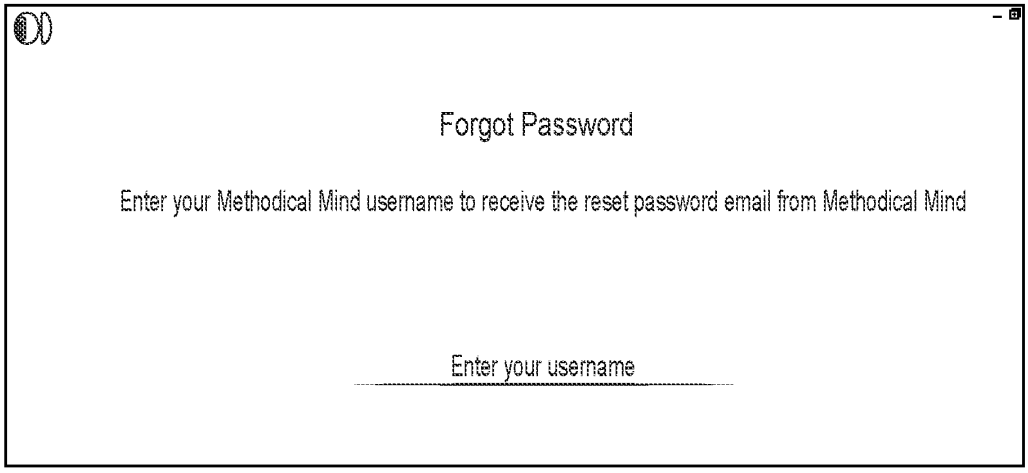

FIG. 62J

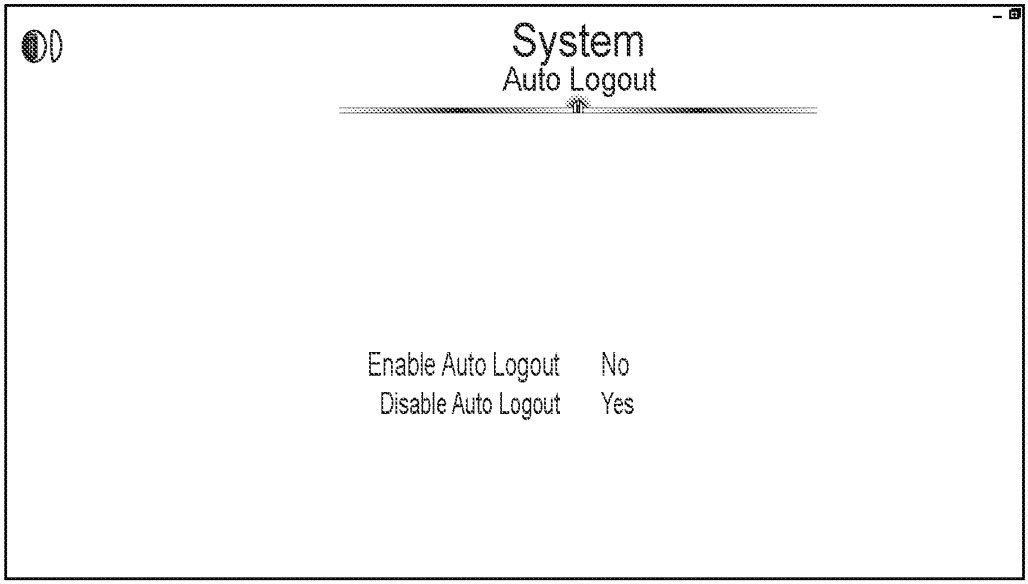

FIG. 62K

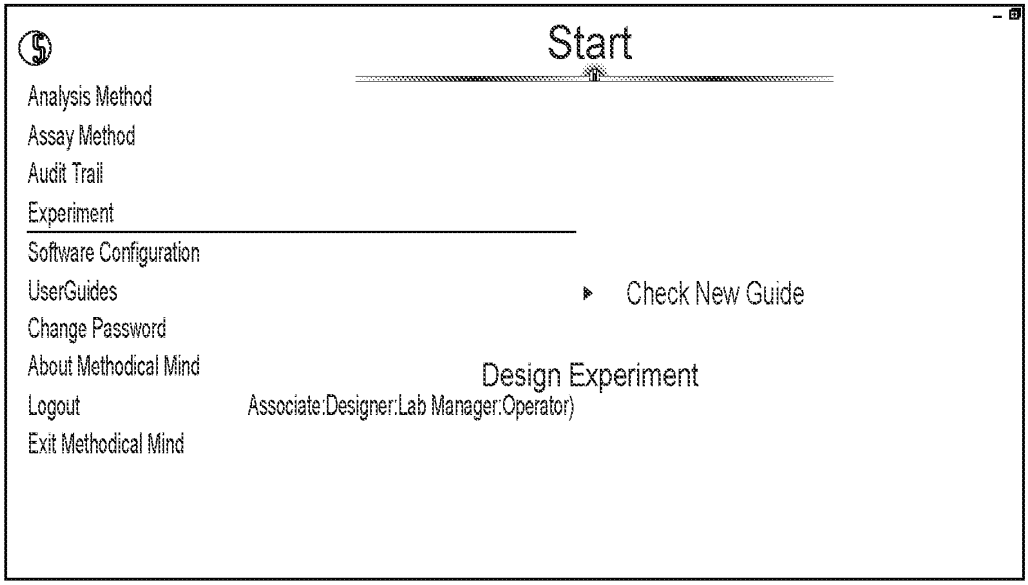

FIG. 62L

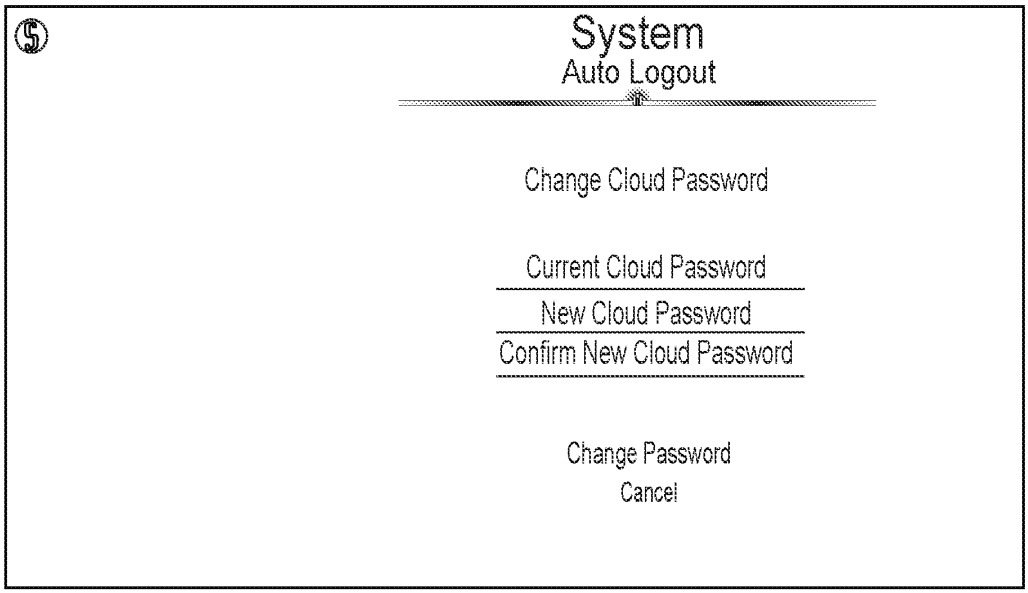

FIG. 62M

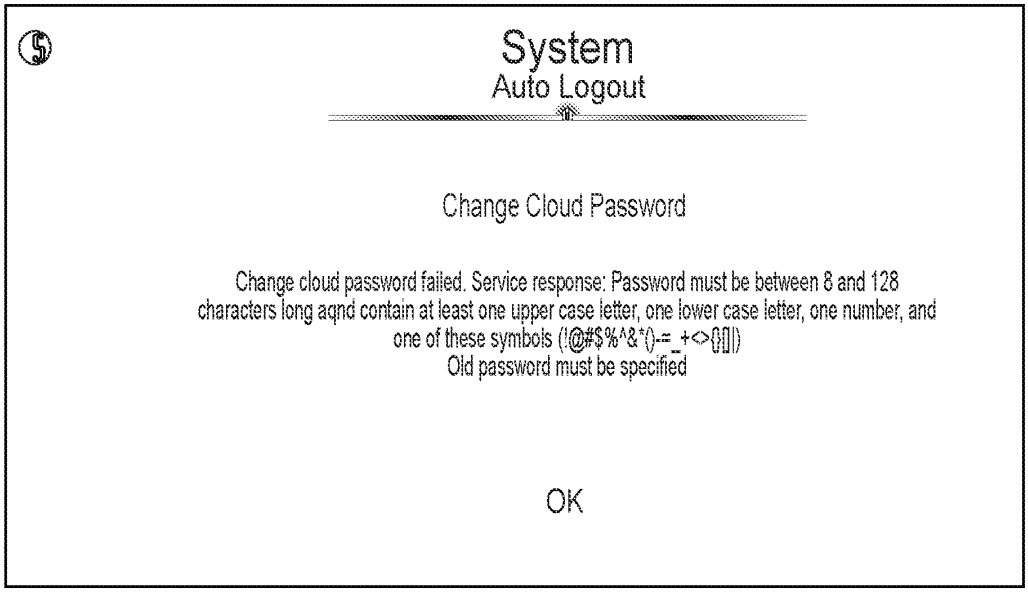

FIG. 62N

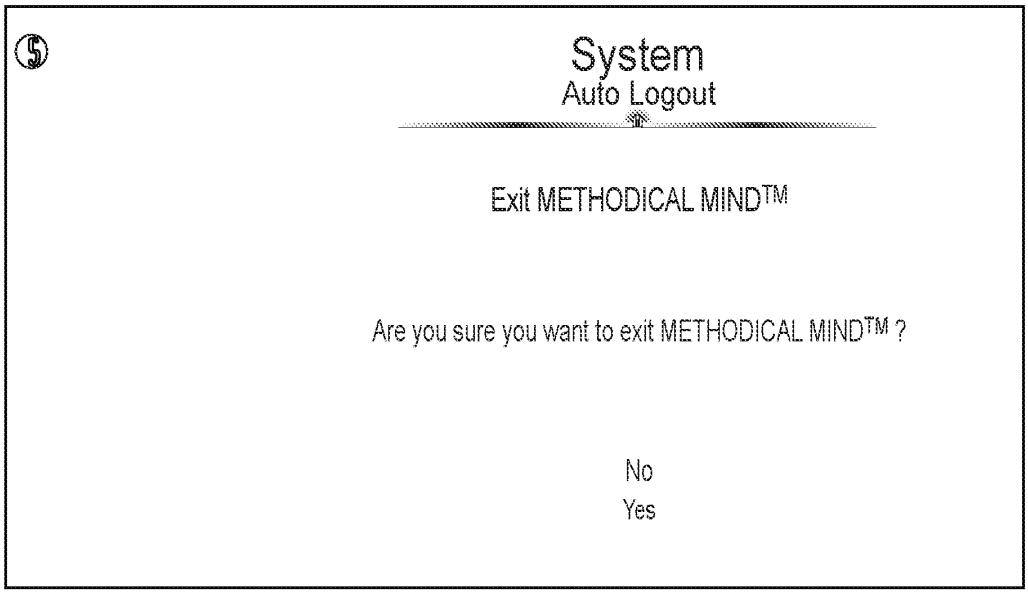

FIG. 62O

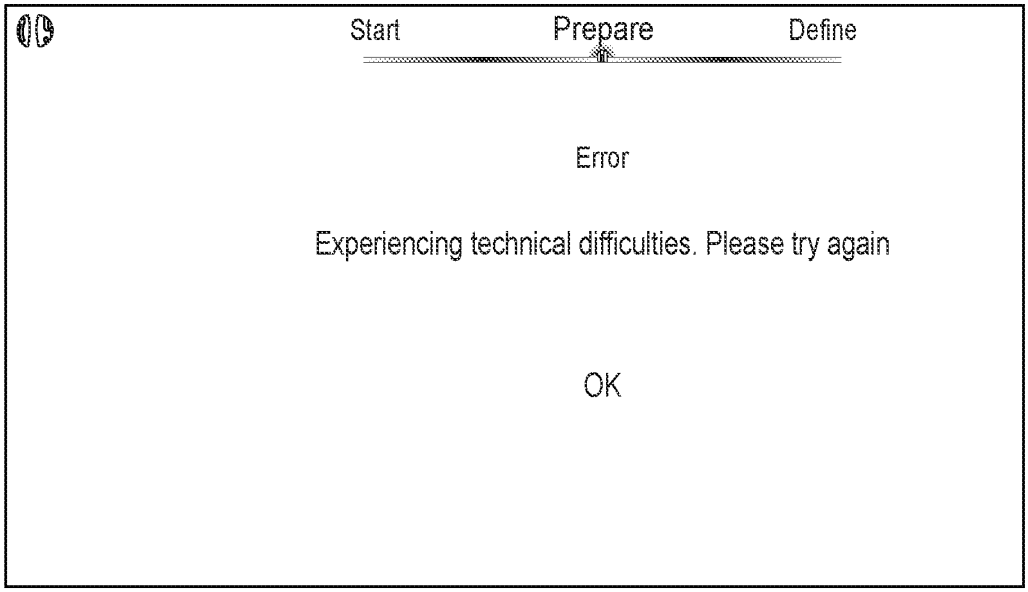

FIG. 62P

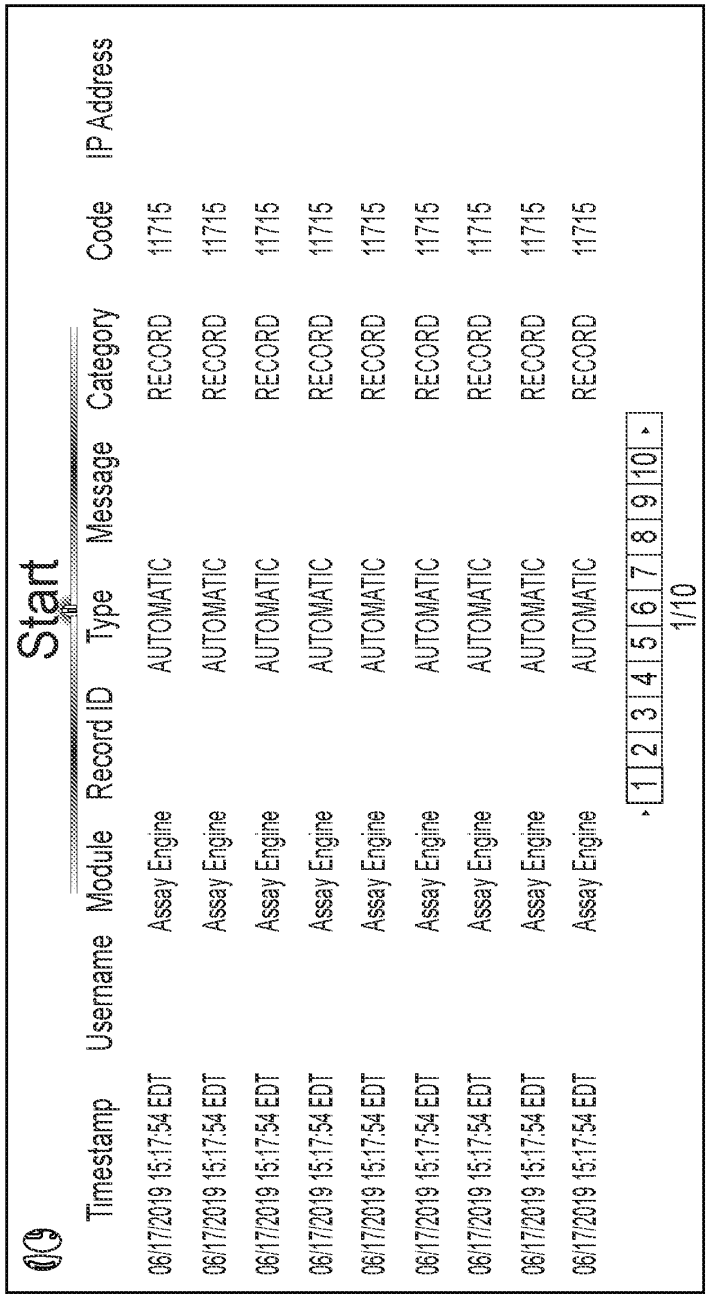
Start
Timestamp
Username
Module
Record ID
Type
Message
Category
Code
IP Address
06/17/2019 15:17:54 EDT
Assay Engine
AUTOMATIC
RECORD
11715
1/10

FIG. 63

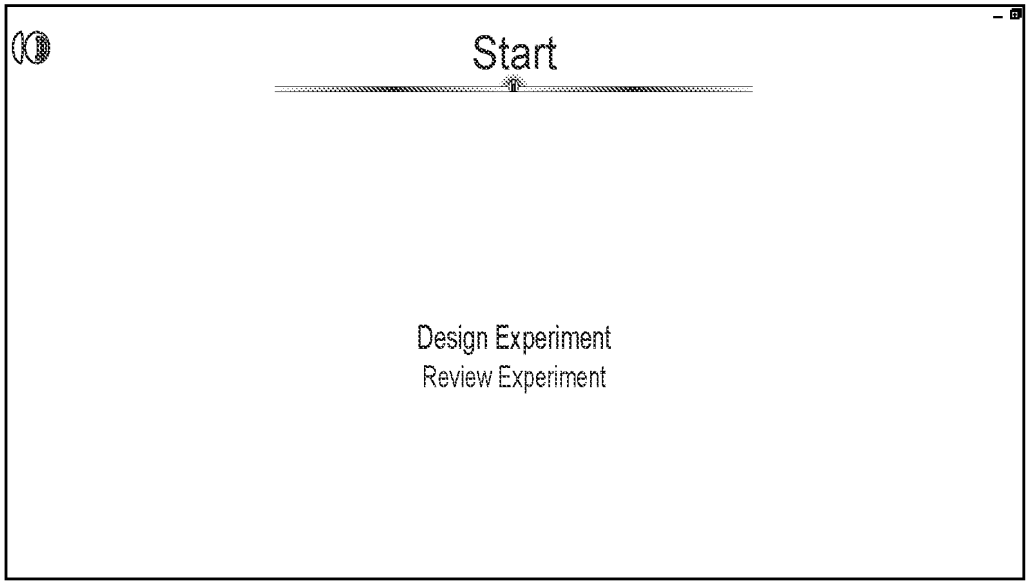

FIG. 64A

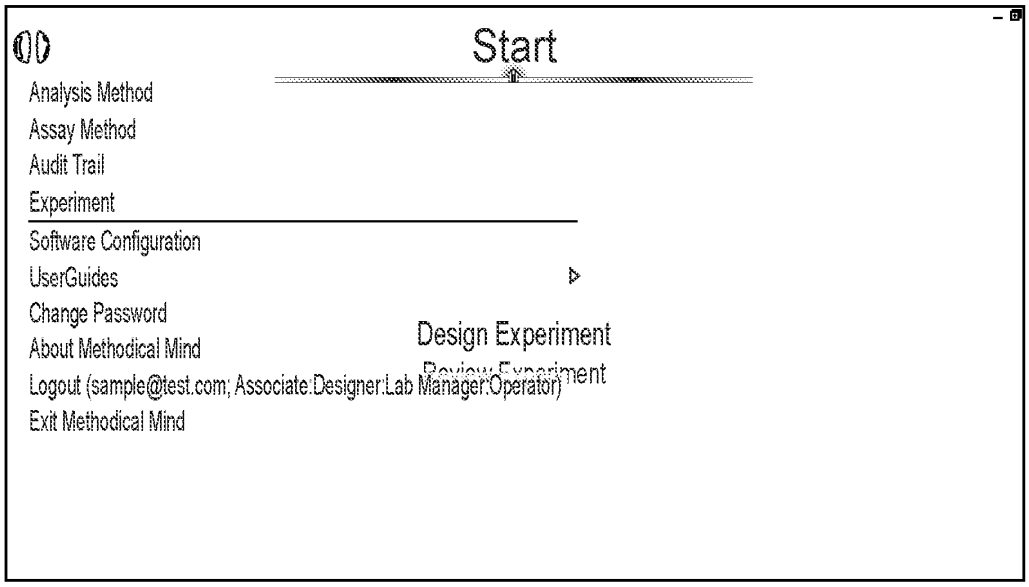

FIG. 64B

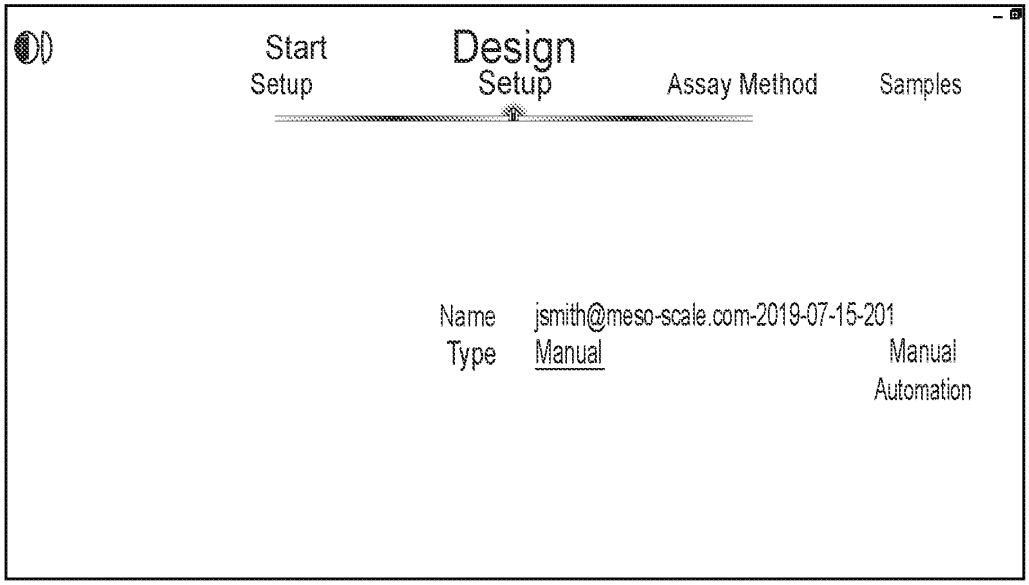

FIG. 64C

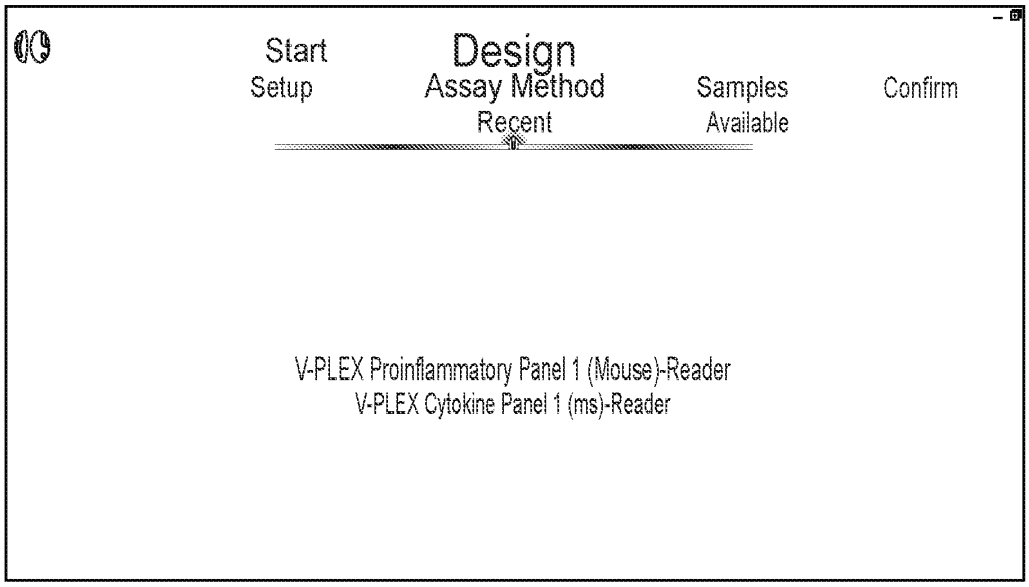

FIG. 64D

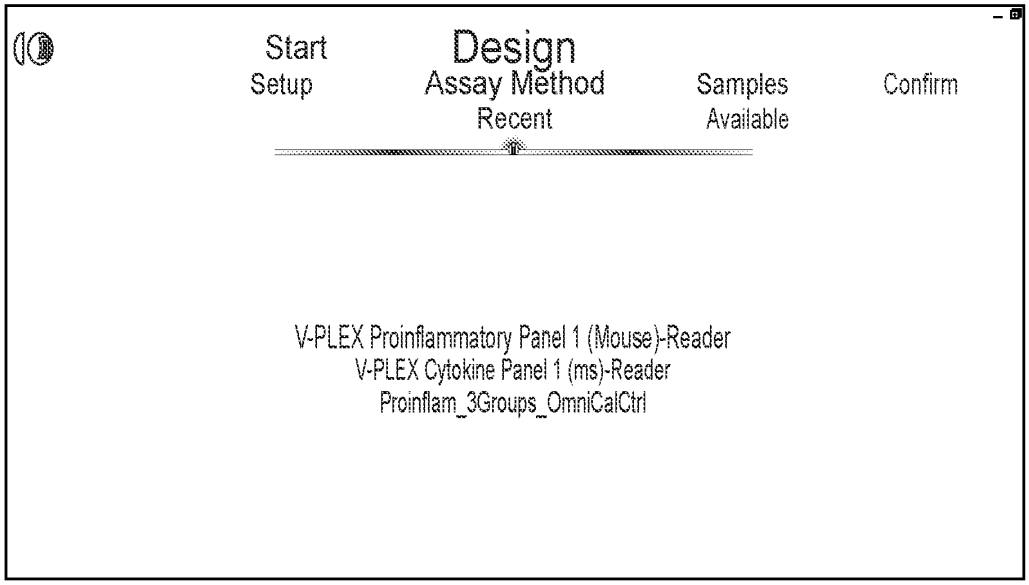

FIG. 64E

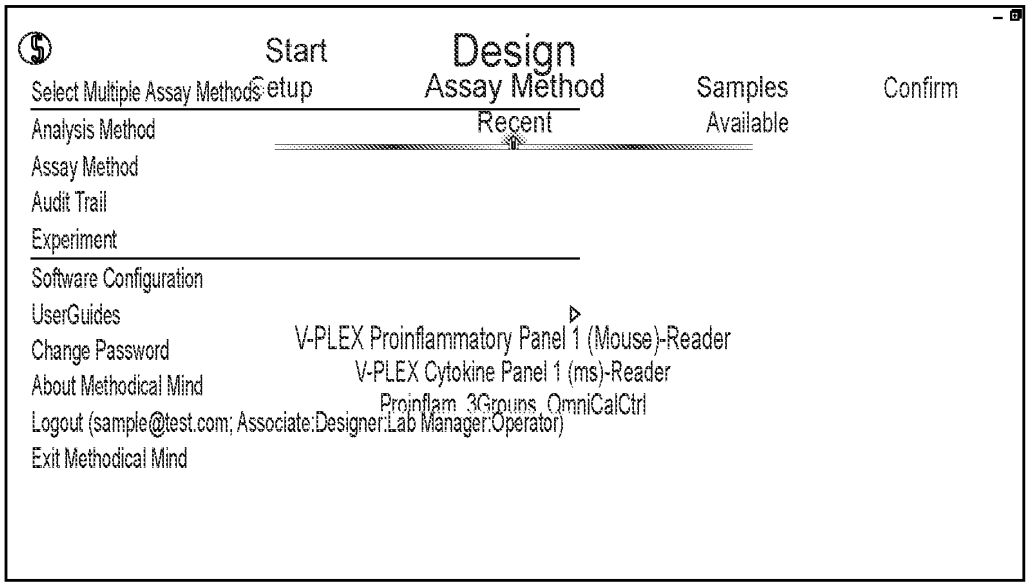

FIG. 64F

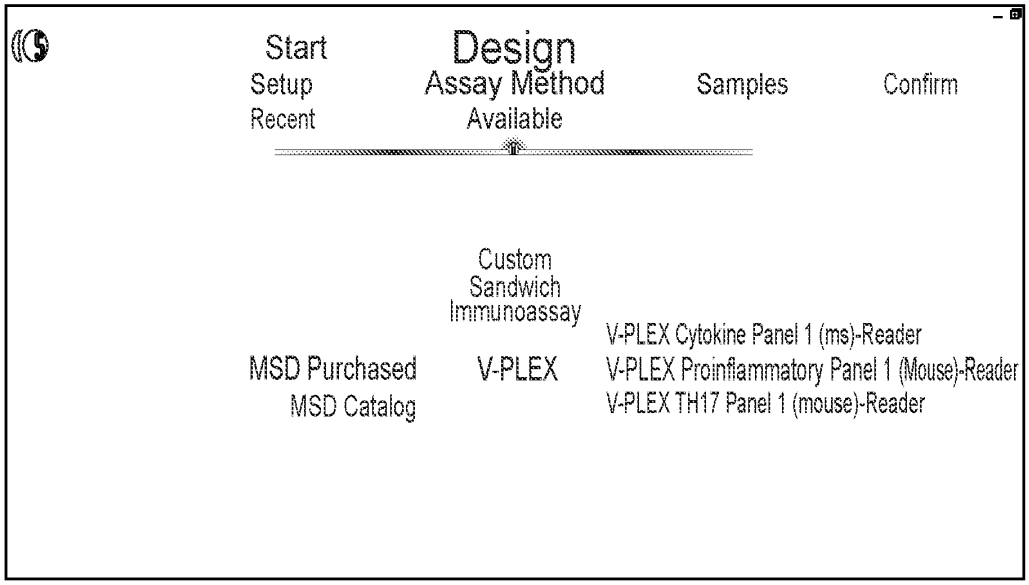

FIG. 64G

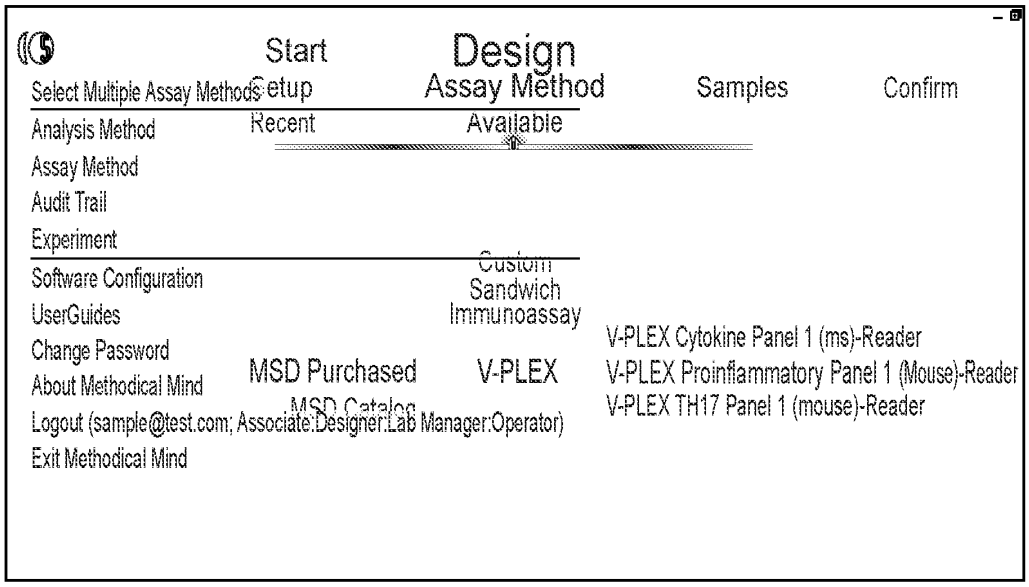

FIG. 64H

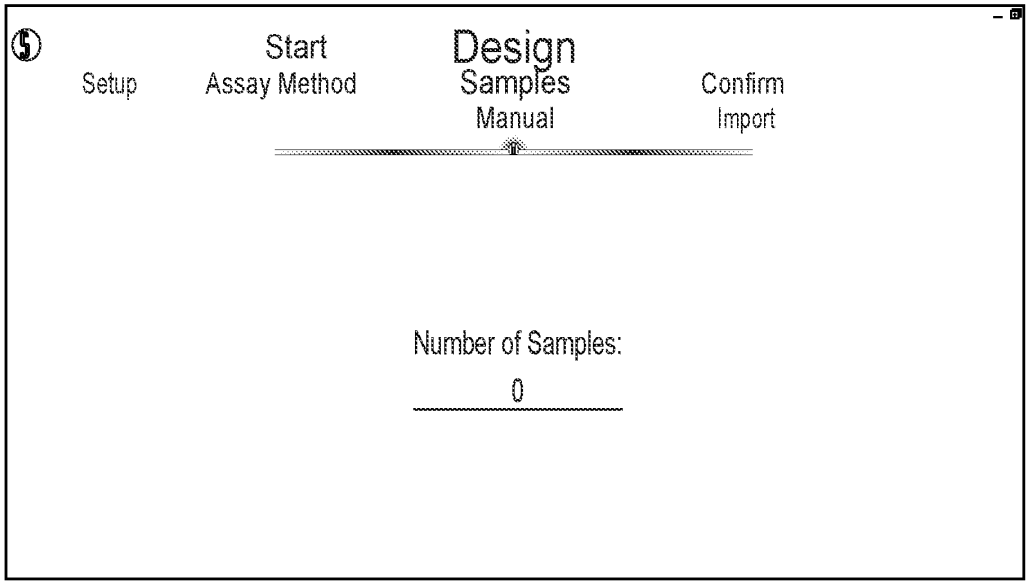

FIG. 64I

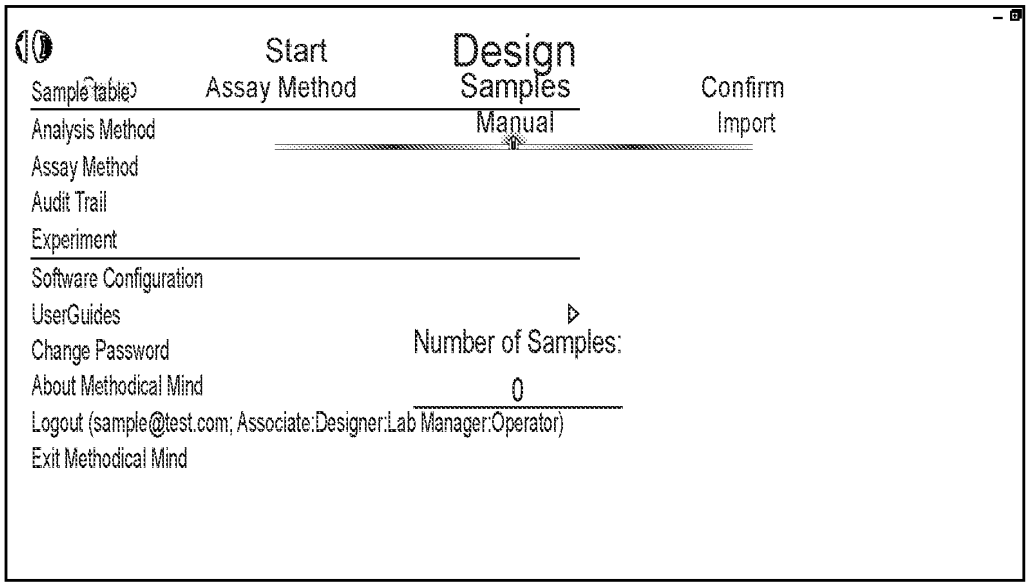

FIG. 64J

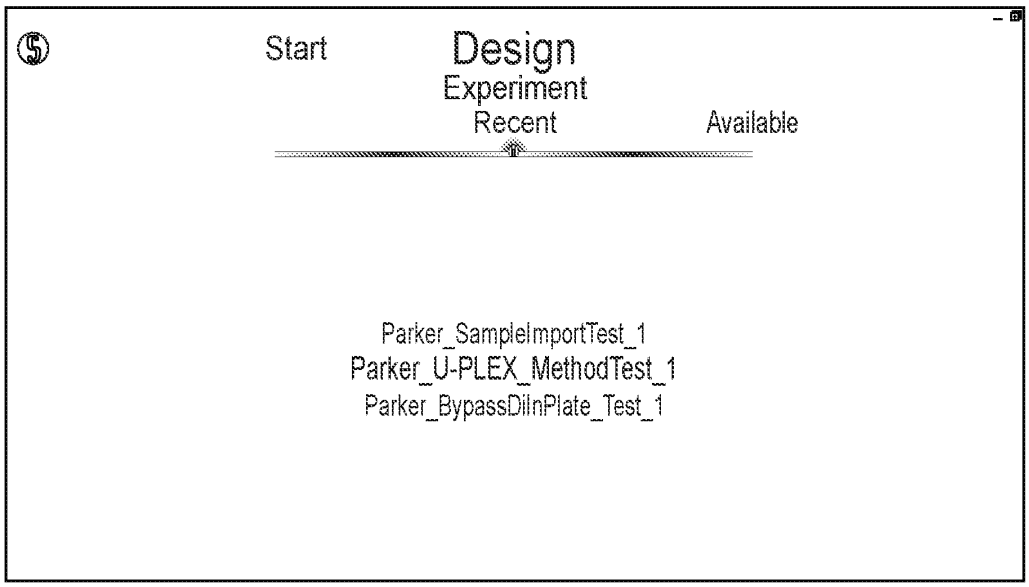

FIG. 64K

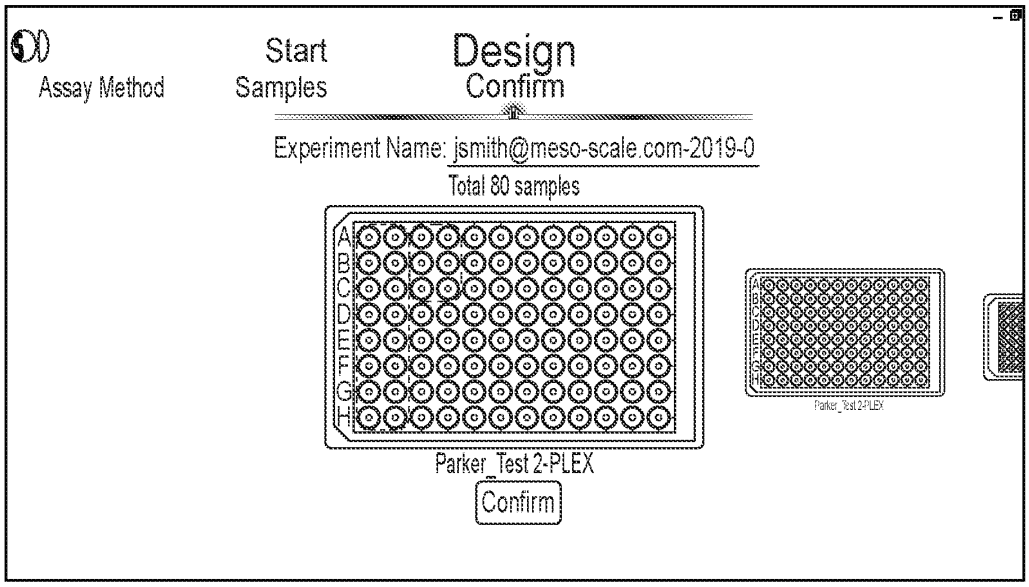

FIG. 64L

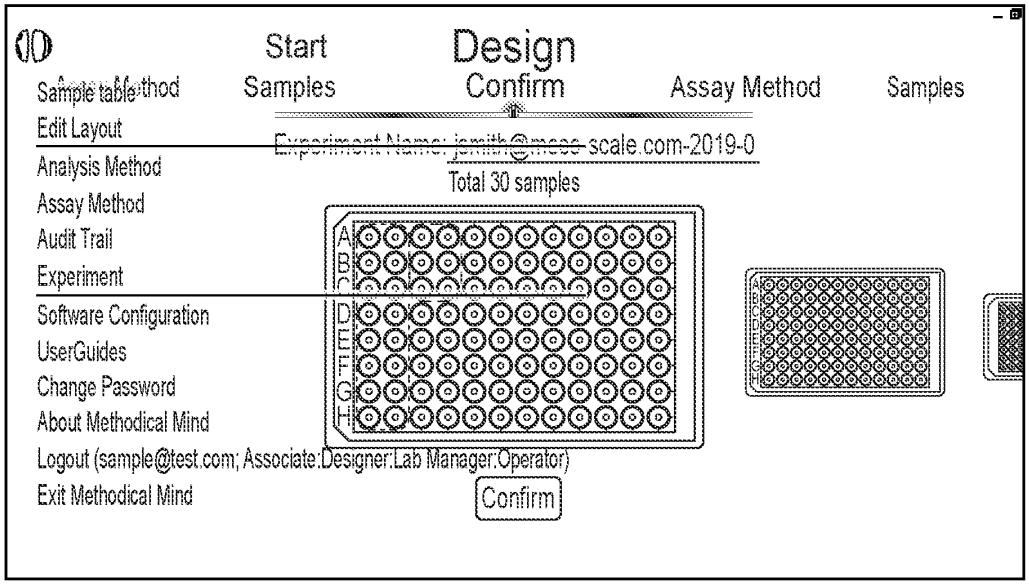

FIG. 64M

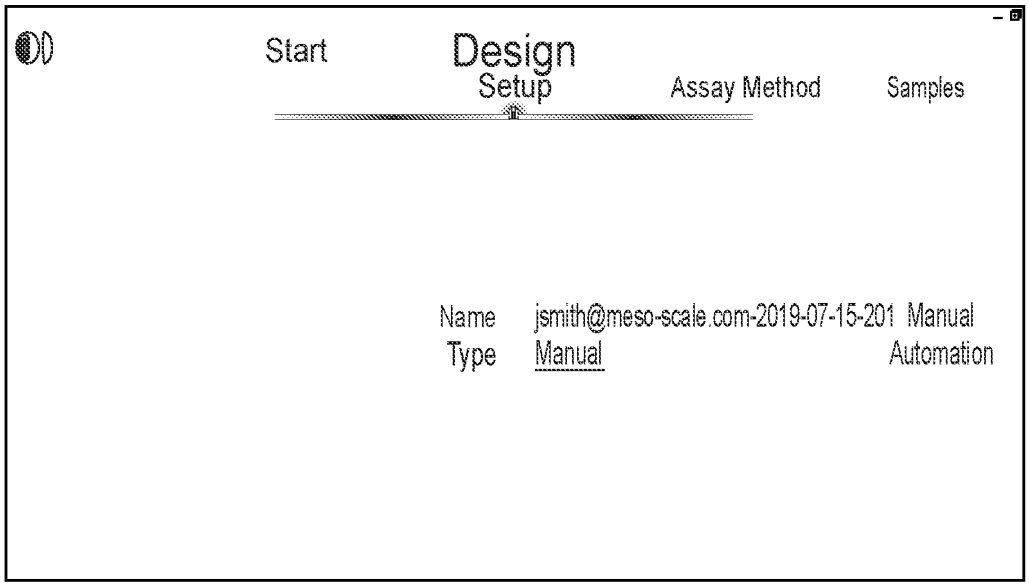

FIG. 64N

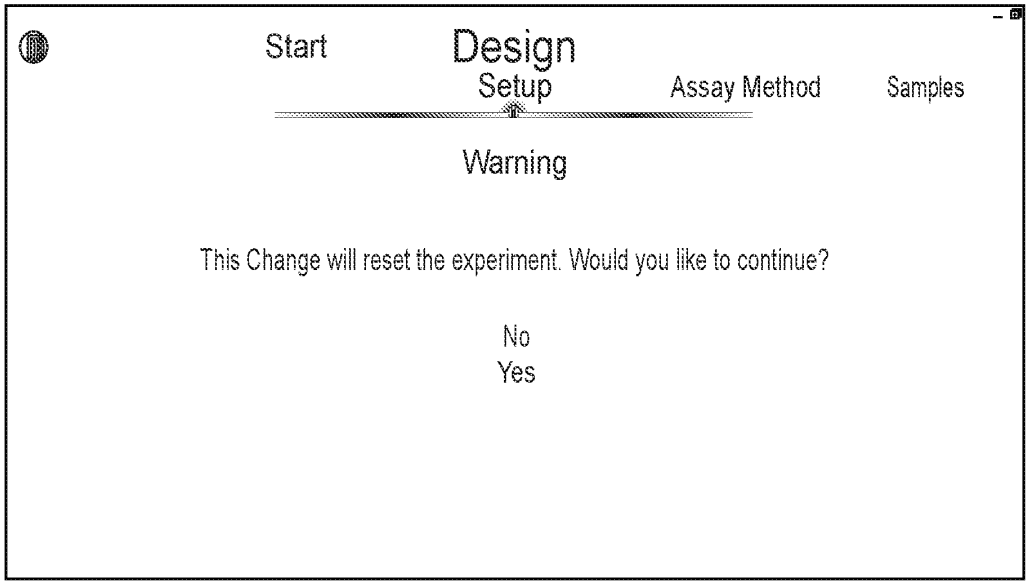

FIG. 64O

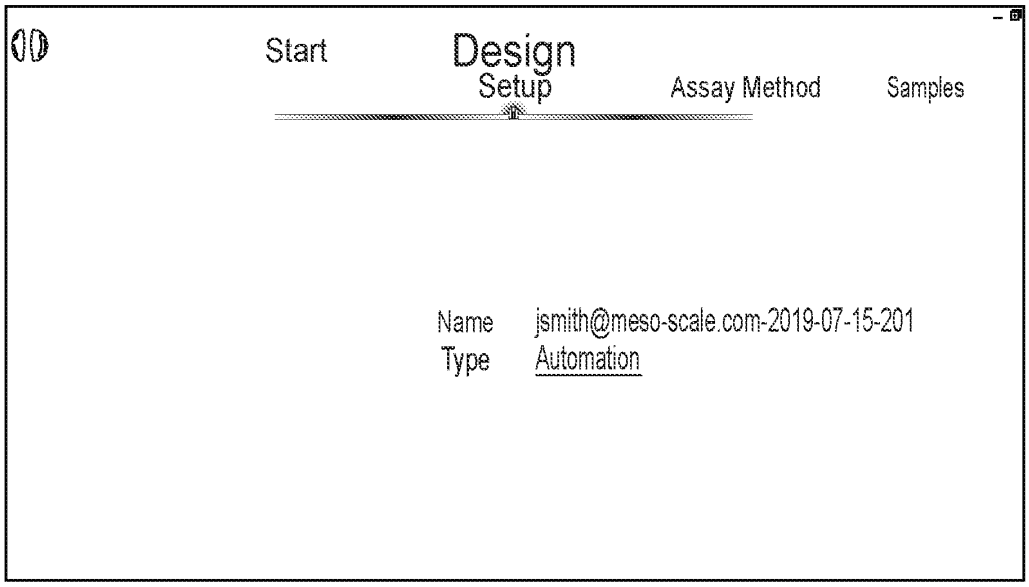

FIG. 64P

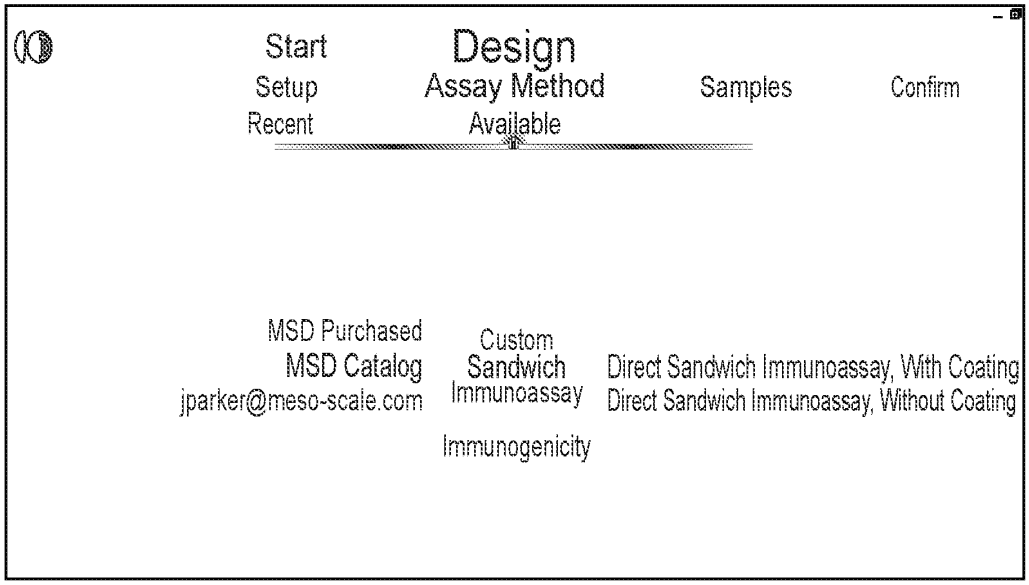

FIG. 64Q

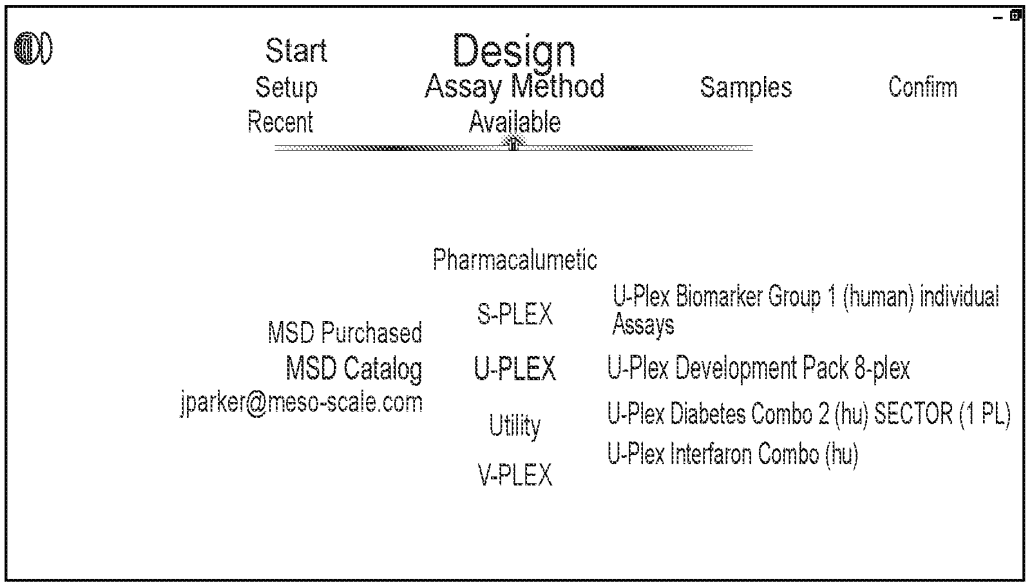

FIG. 64R

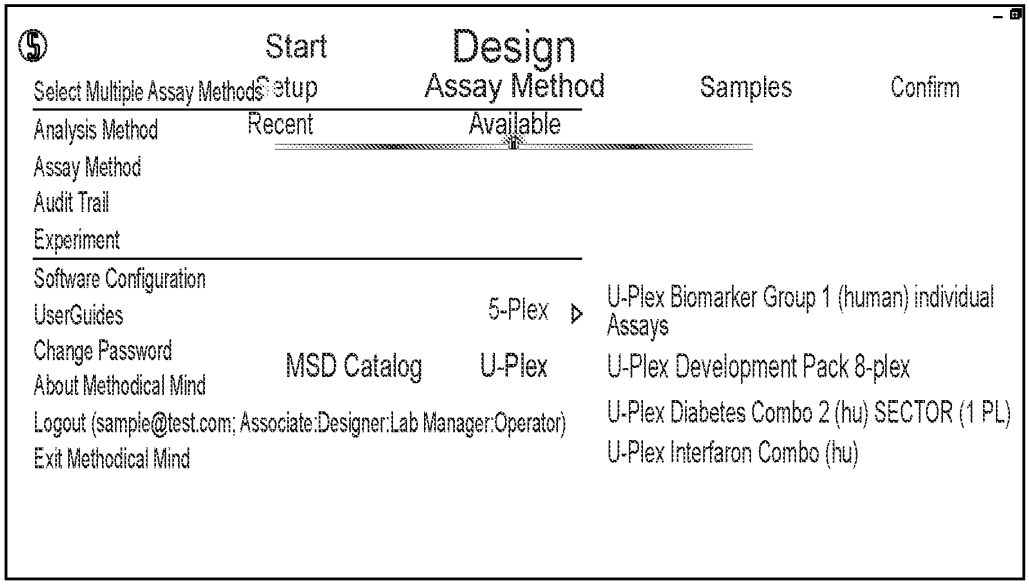

FIG. 64S

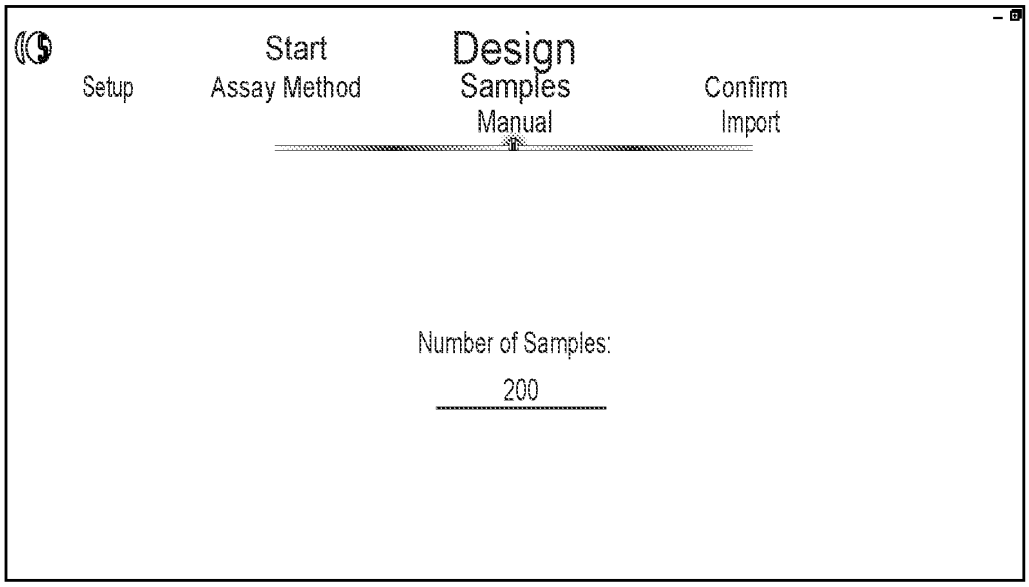

FIG. 64T

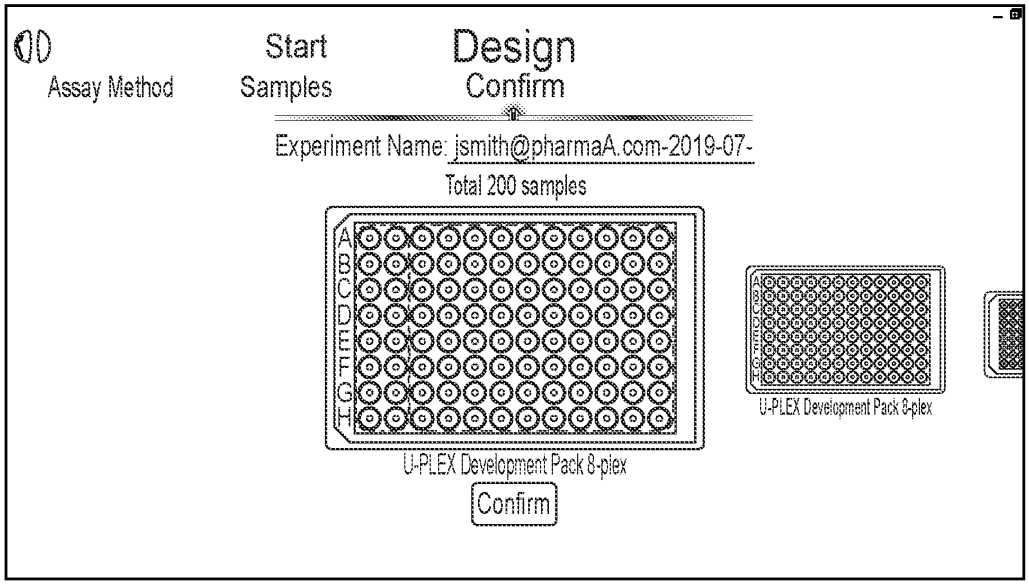

FIG. 64U

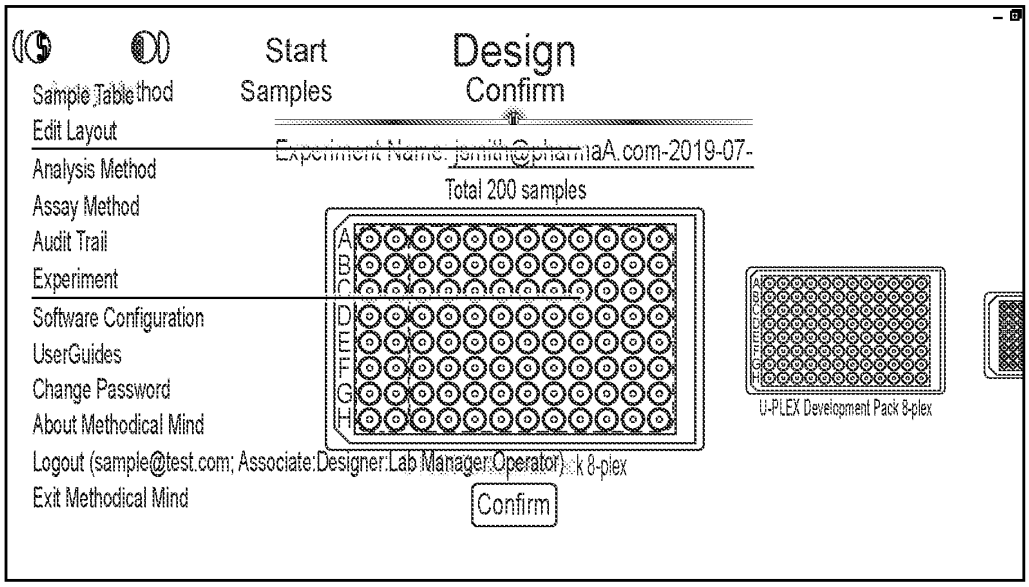

FIG. 64V

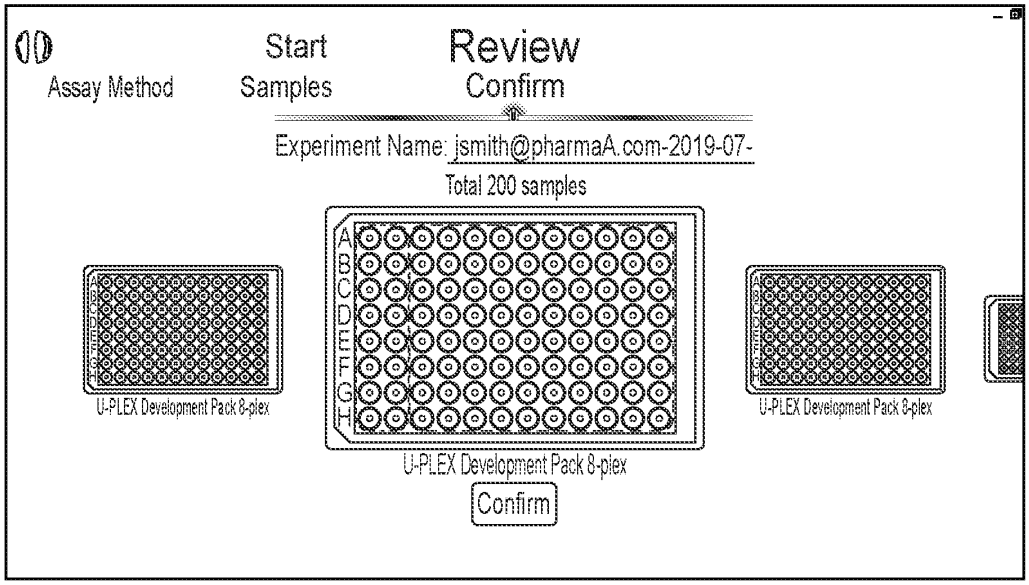

FIG. 64W

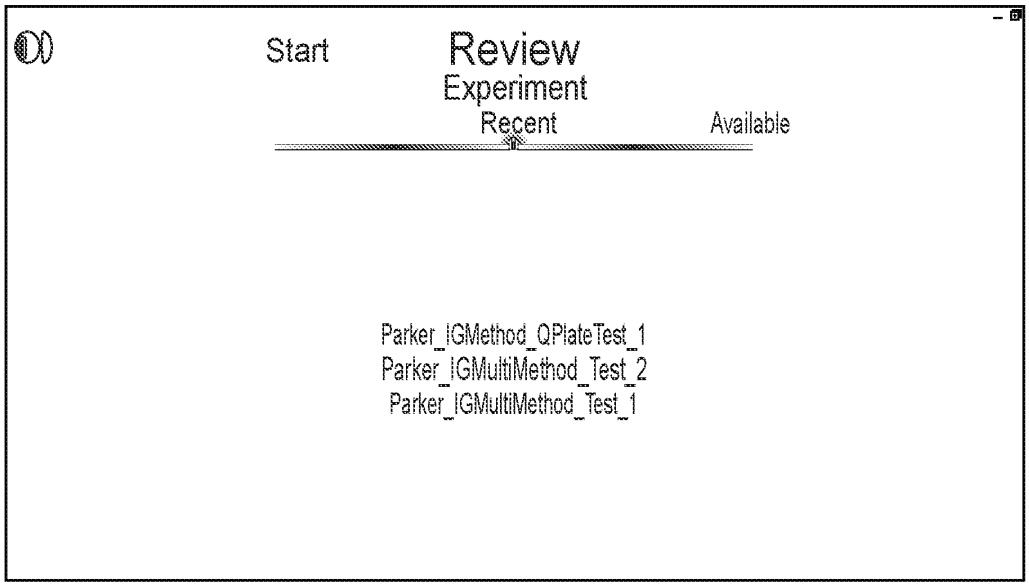

FIG. 64X

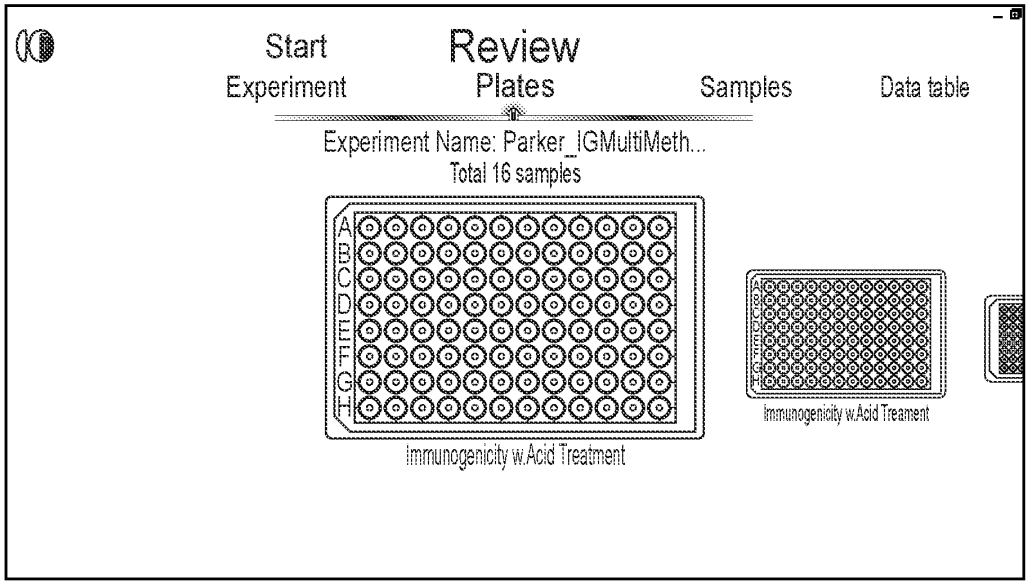

FIG. 64Y

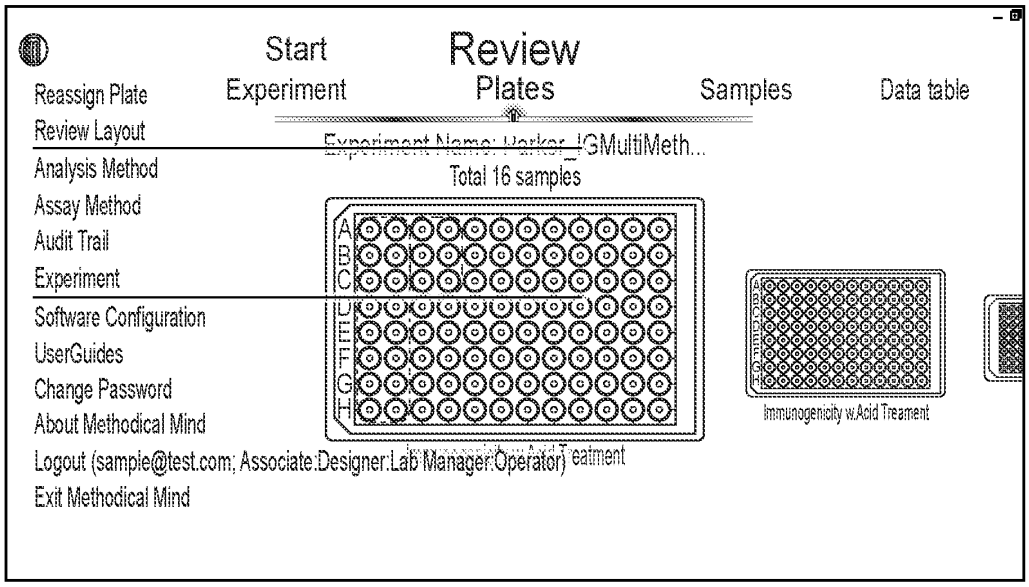

FIG. 64Z

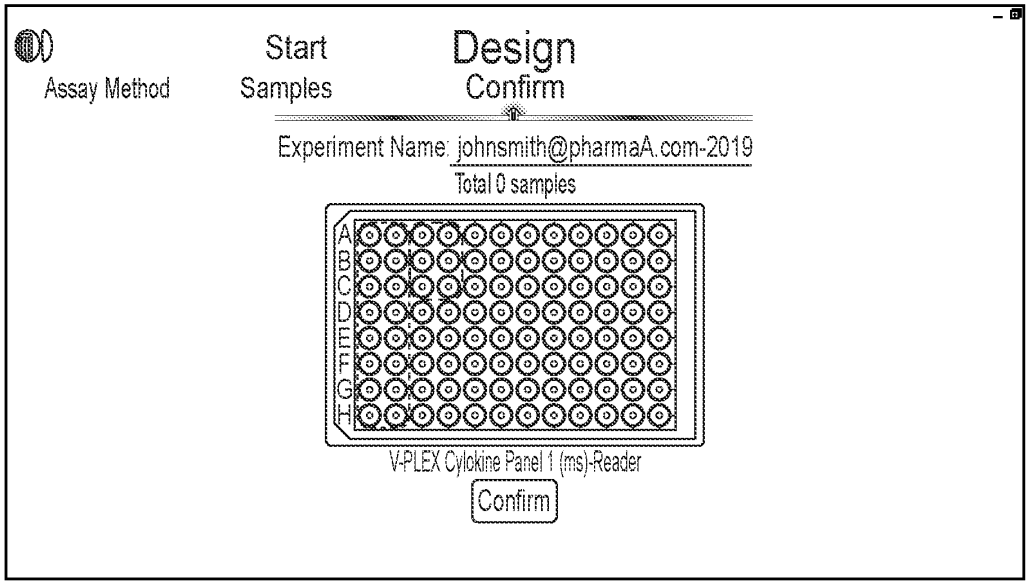

FIG. 64AA

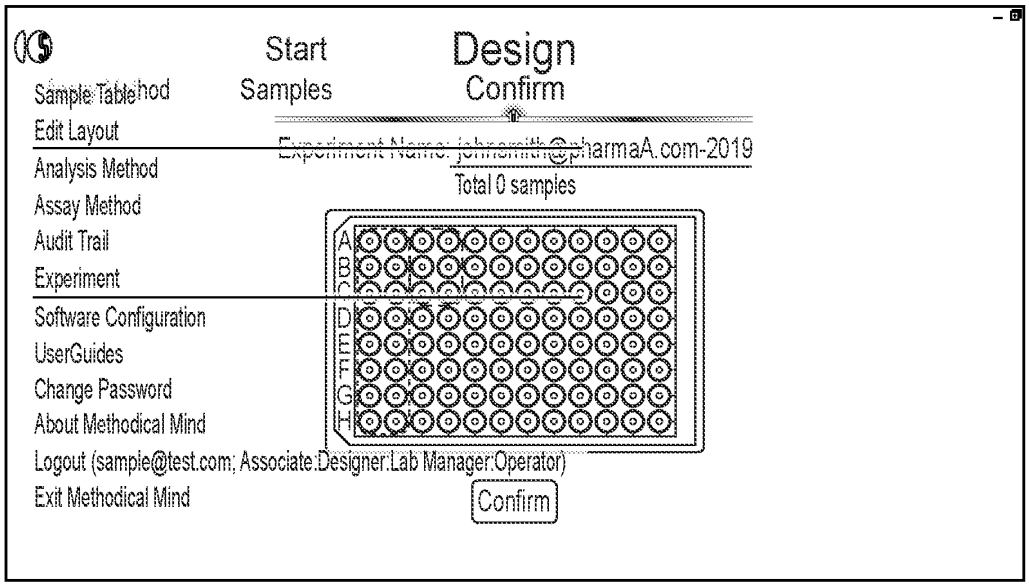

FIG. 64BB

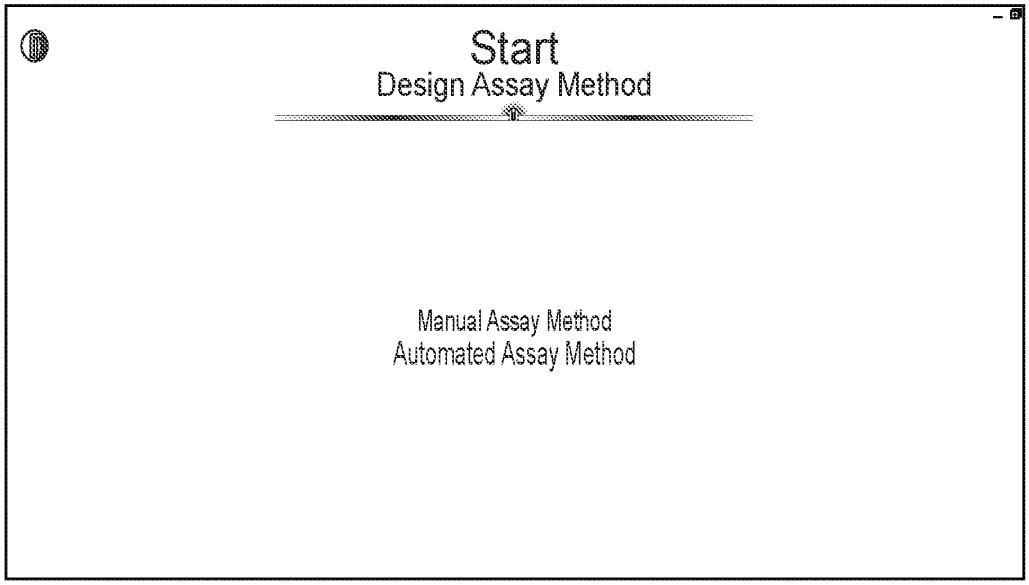

FIG. 64CC

FIG. 64DD

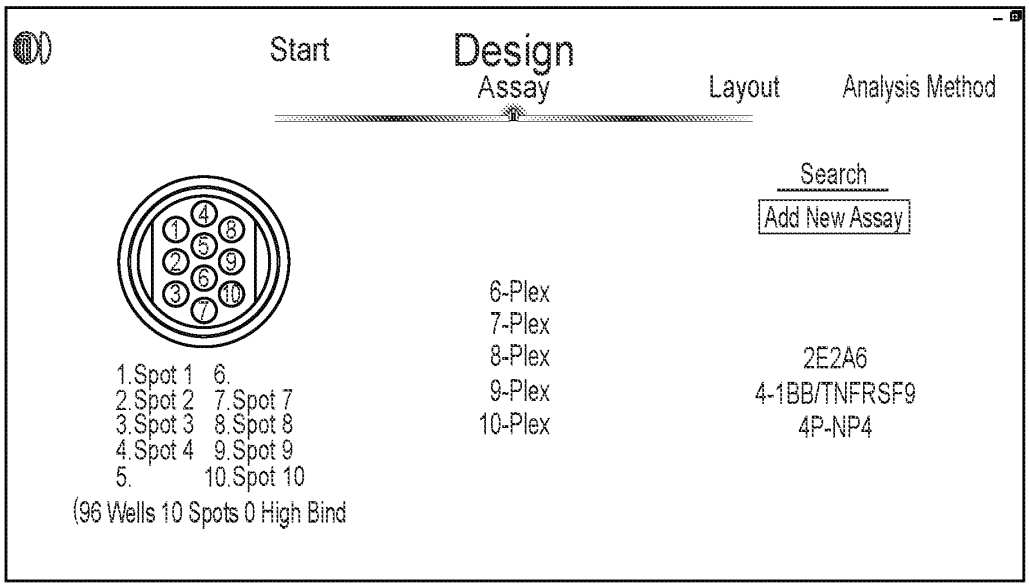

FIG. 64EE

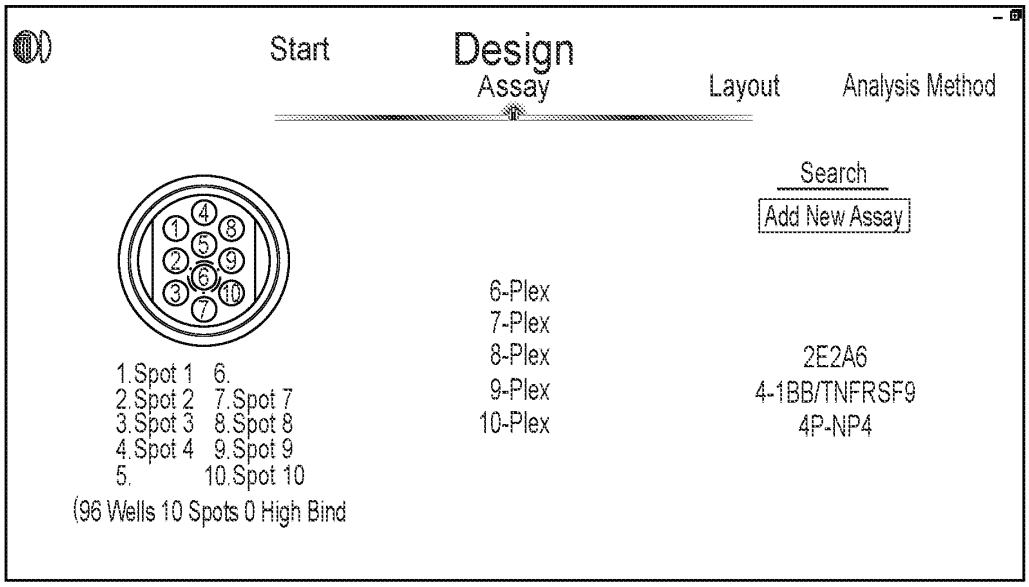

FIG. 64FF

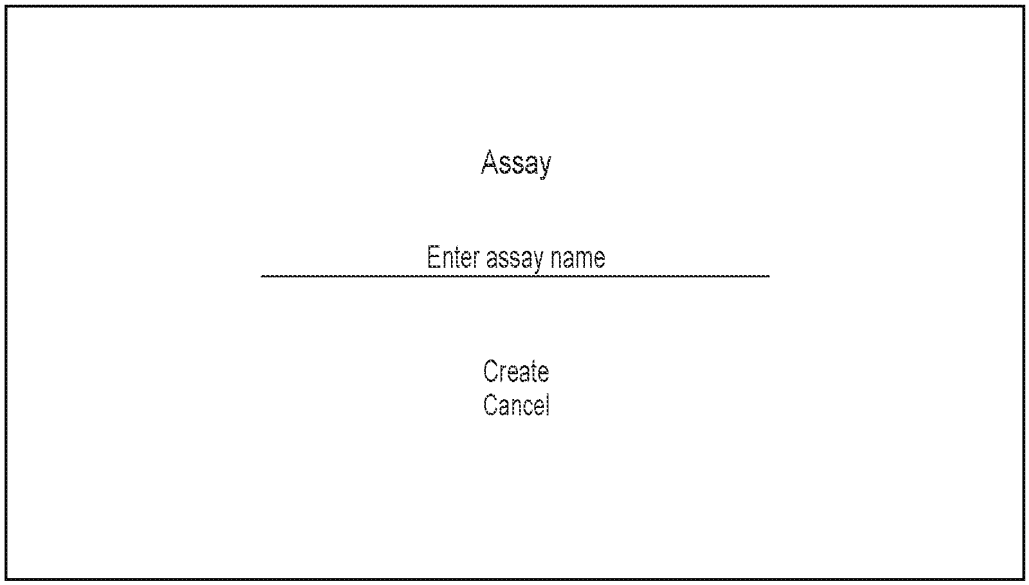

FIG. 64GG

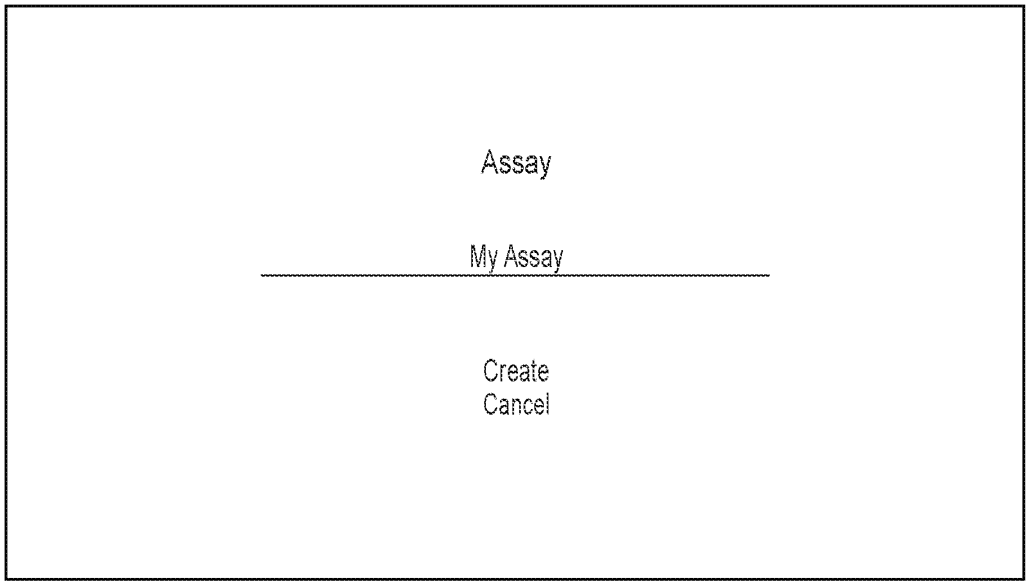

FIG. 64HH

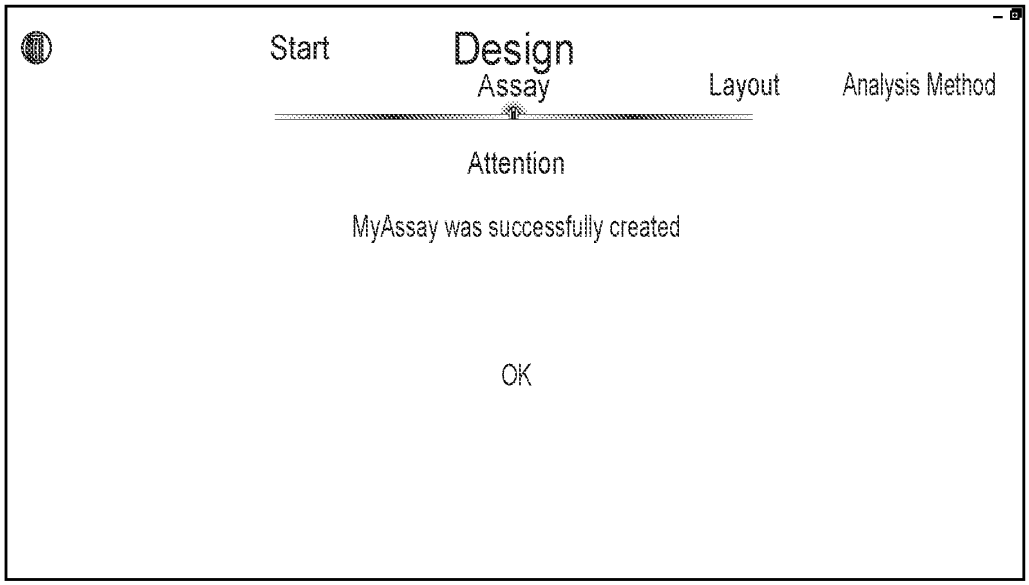

FIG. 64II

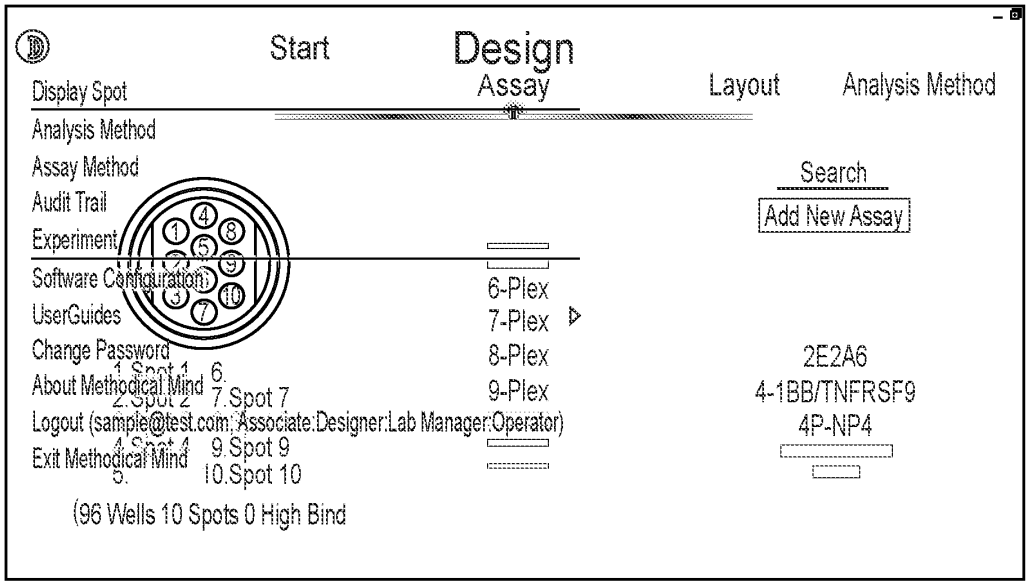

FIG. 64JJ

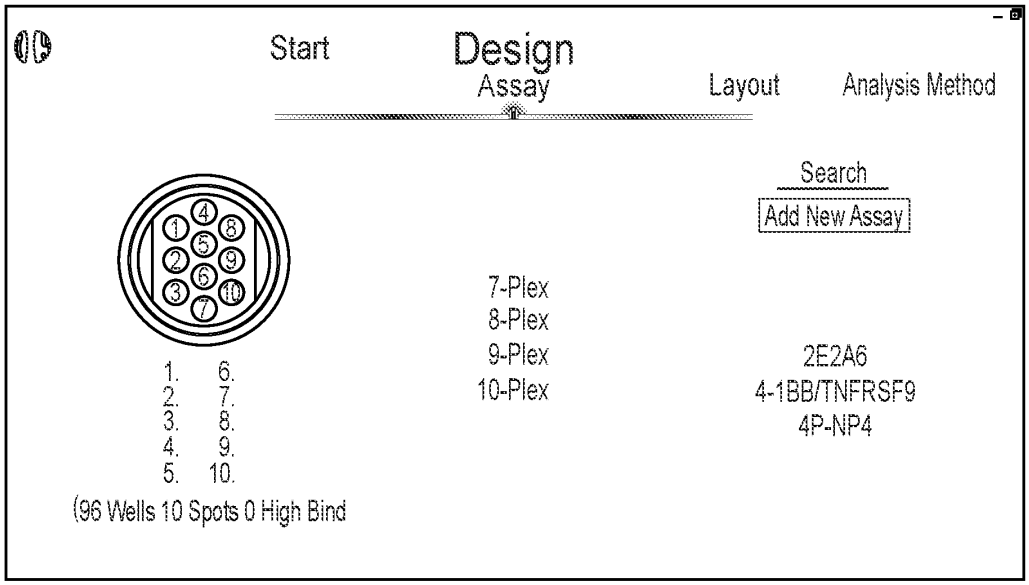

FIG. 64KK

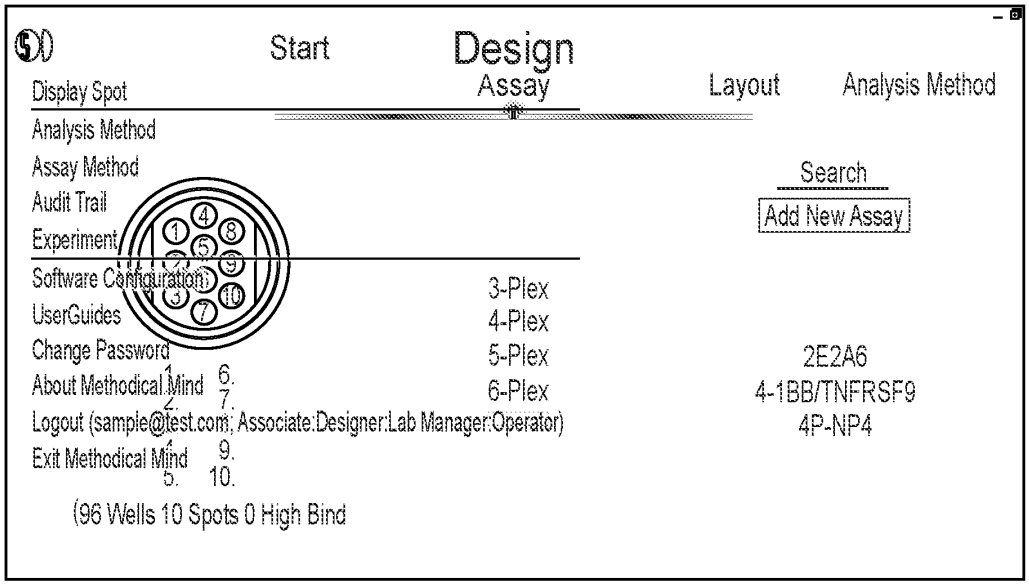

FIG. 64LL

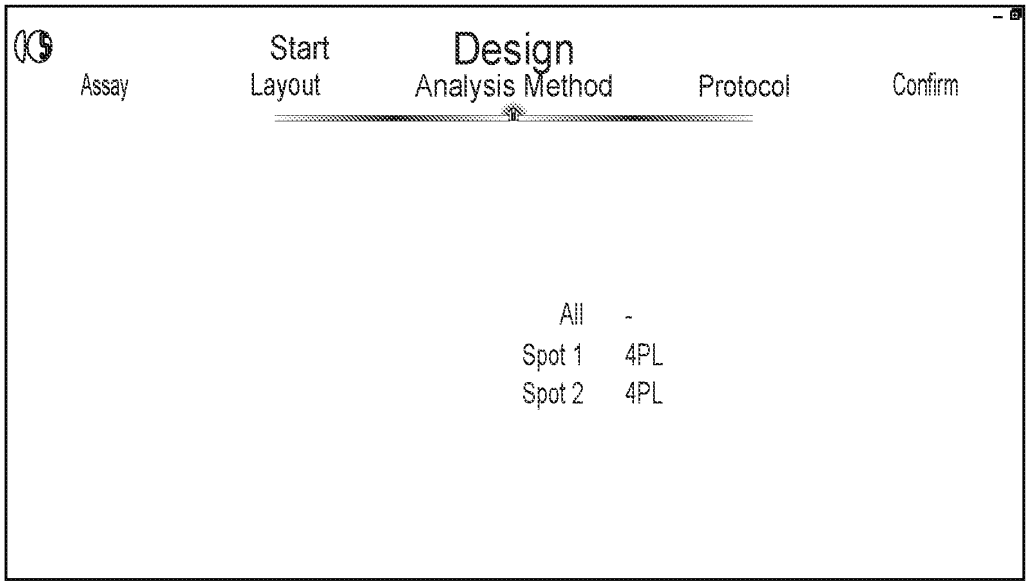

FIG. 64MM

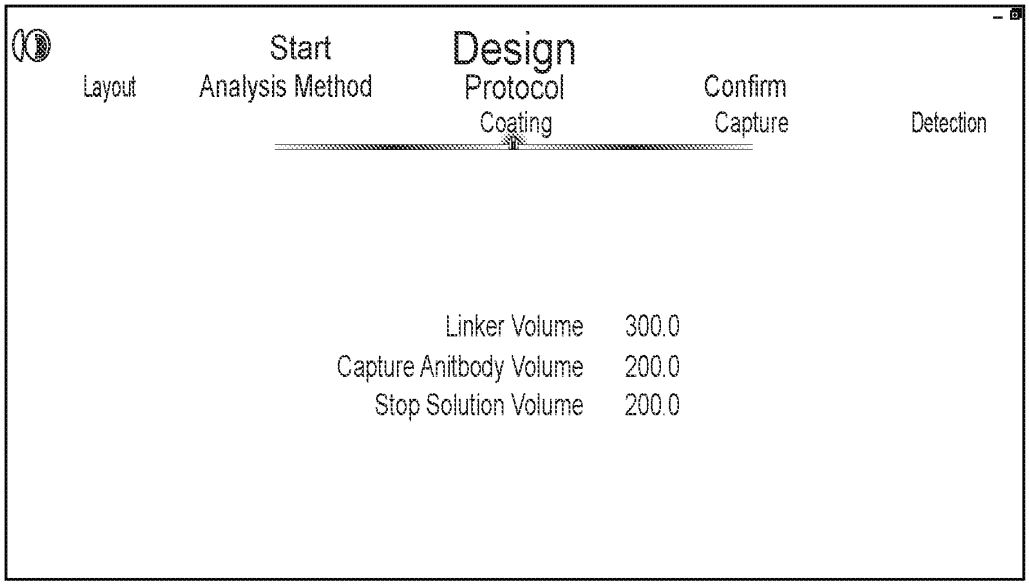

FIG. 64NN

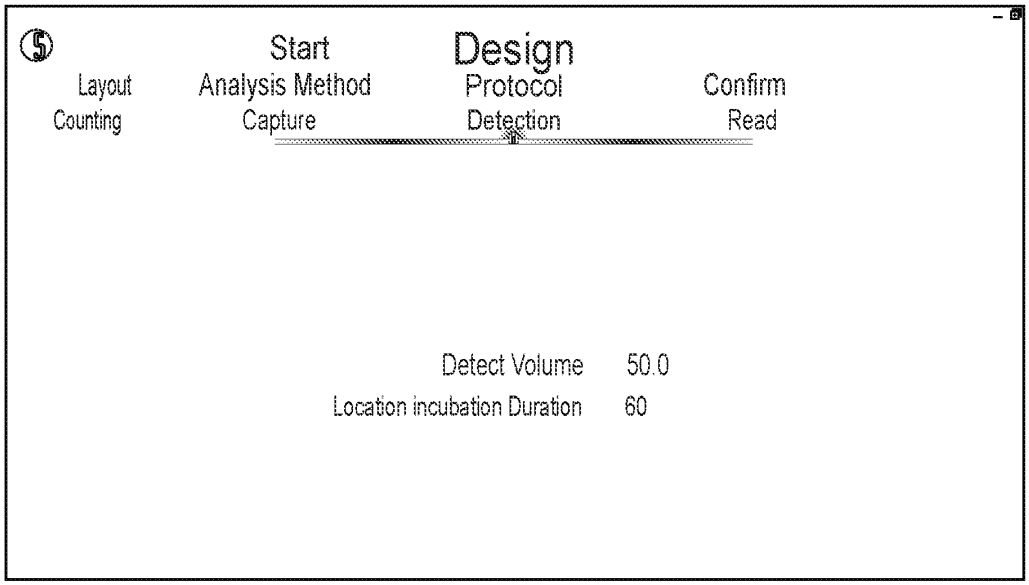

FIG. 64OO

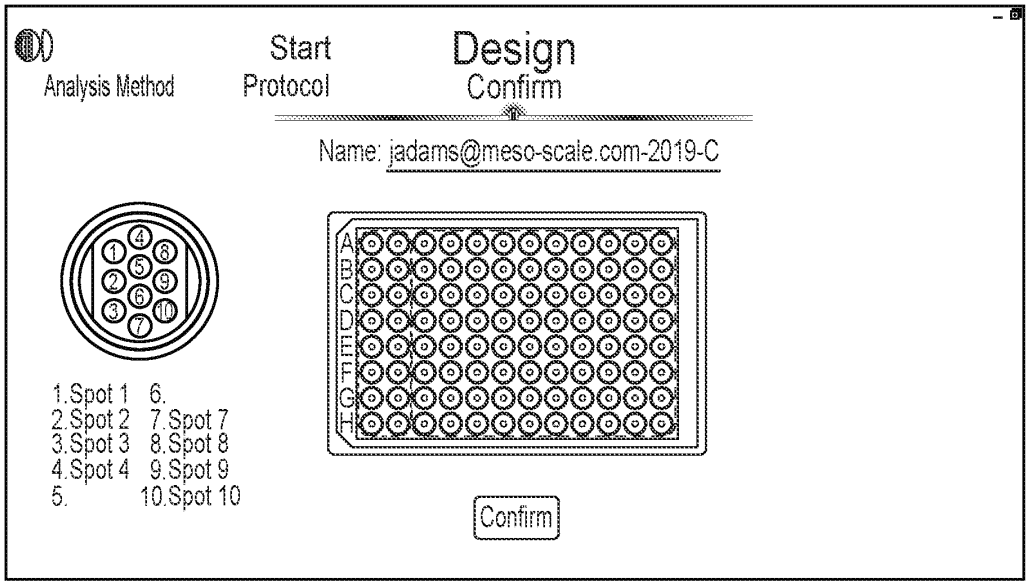

FIG. 64PP

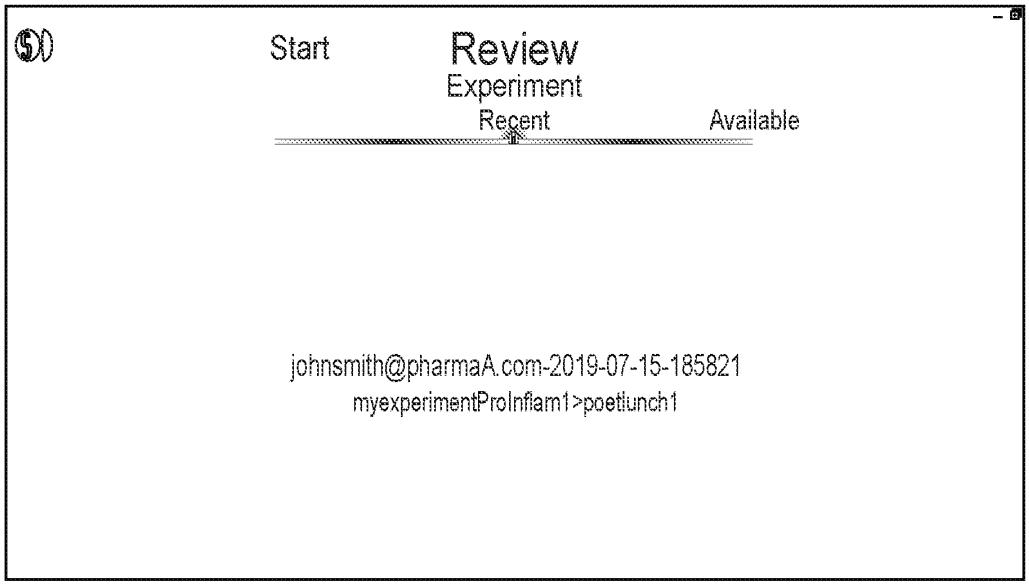

FIG. 64QQ

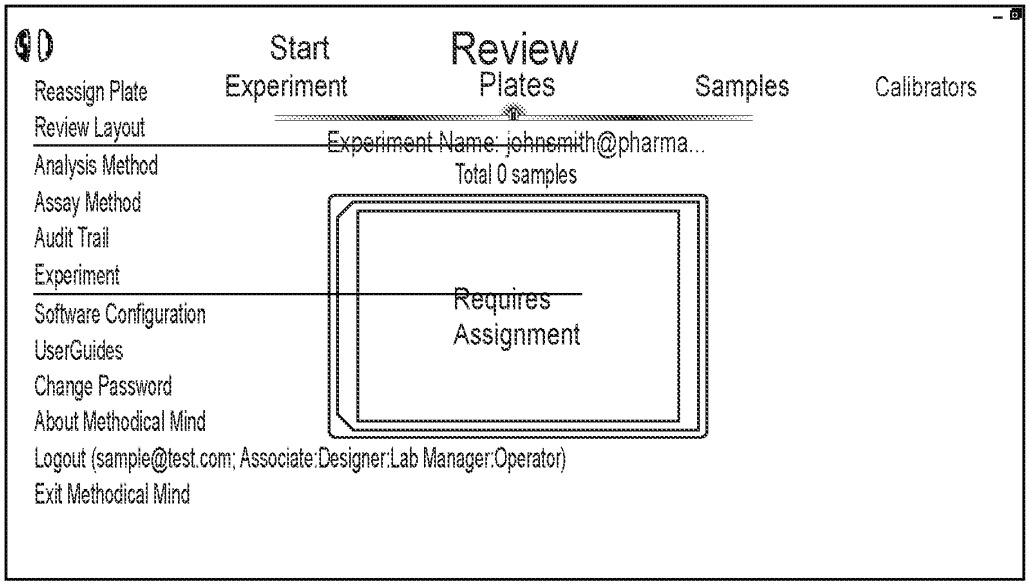

FIG. 64RR

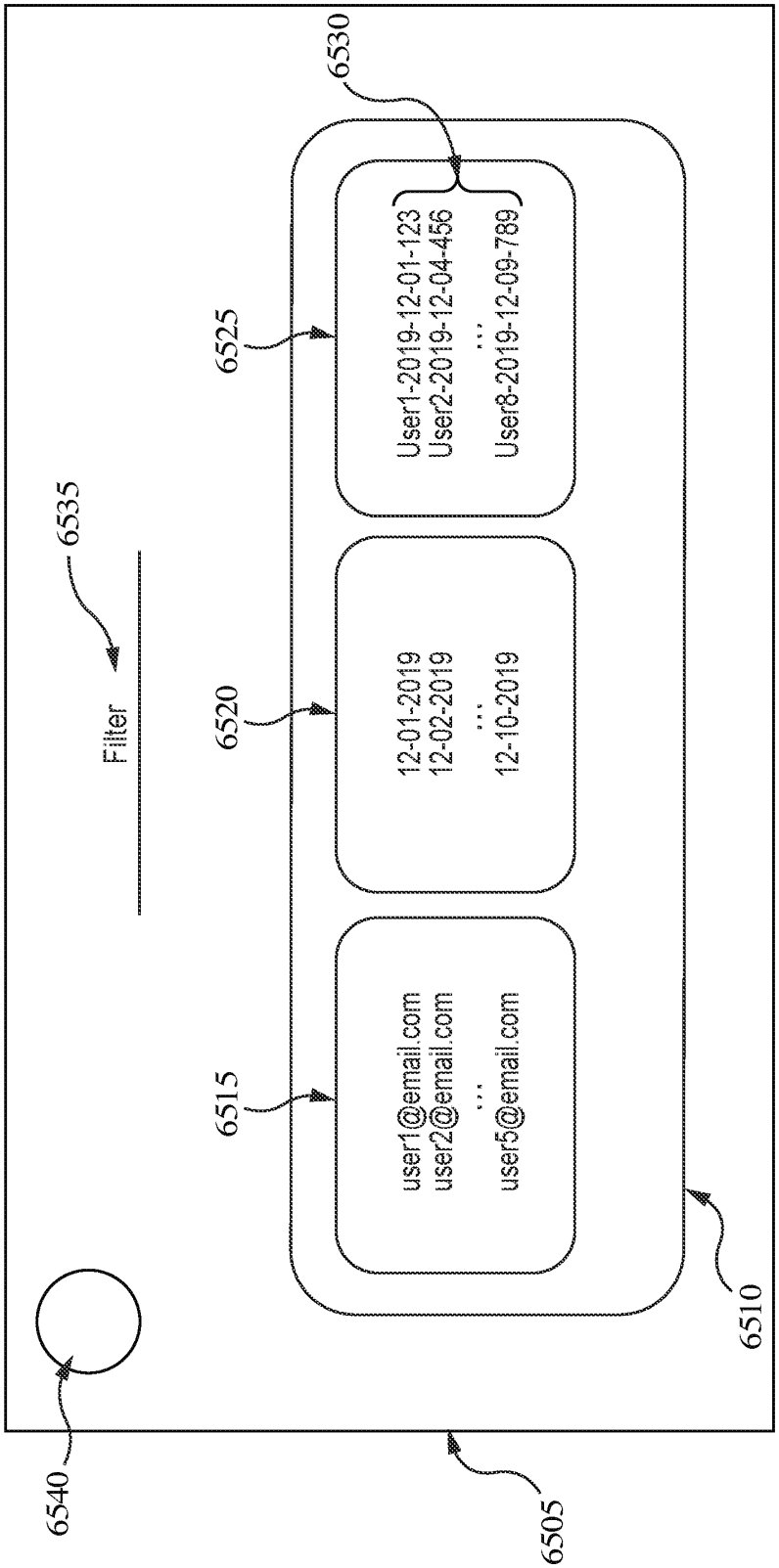
6530
6525
User1-2019-12-01-123
User2-2019-12-04-456
...
User8-2019-12-09-789
6535
Filter
6520
12-01-2019
12-02-2019
...
12-10-2019
6515
user1@email.com
user2@email.com
...
user5@email.com
6510
6540
6505

FIG. 65

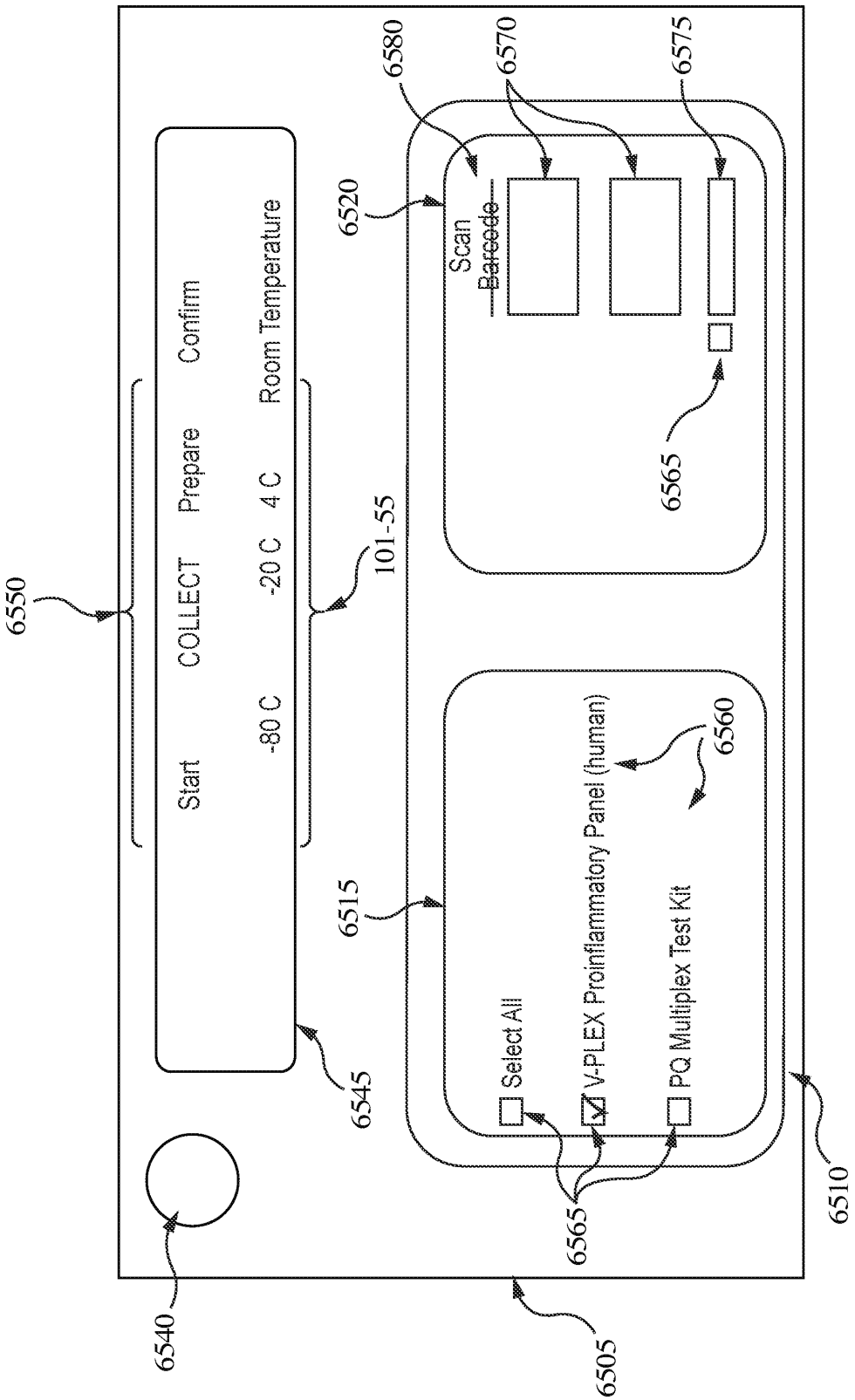
6550
Start
COLLECT
Prepare
Confirm
-80 C
-20 C
4 C
Room Temperature
101-55
6545
6540
6520
6515
6580
6570
6575
Scan Barcode
6565
6560
Select All
V-PLEX Proinflammatory Panel (human)
PQ Multiplex Test Kit
6565
6510
6505

FIG. 66

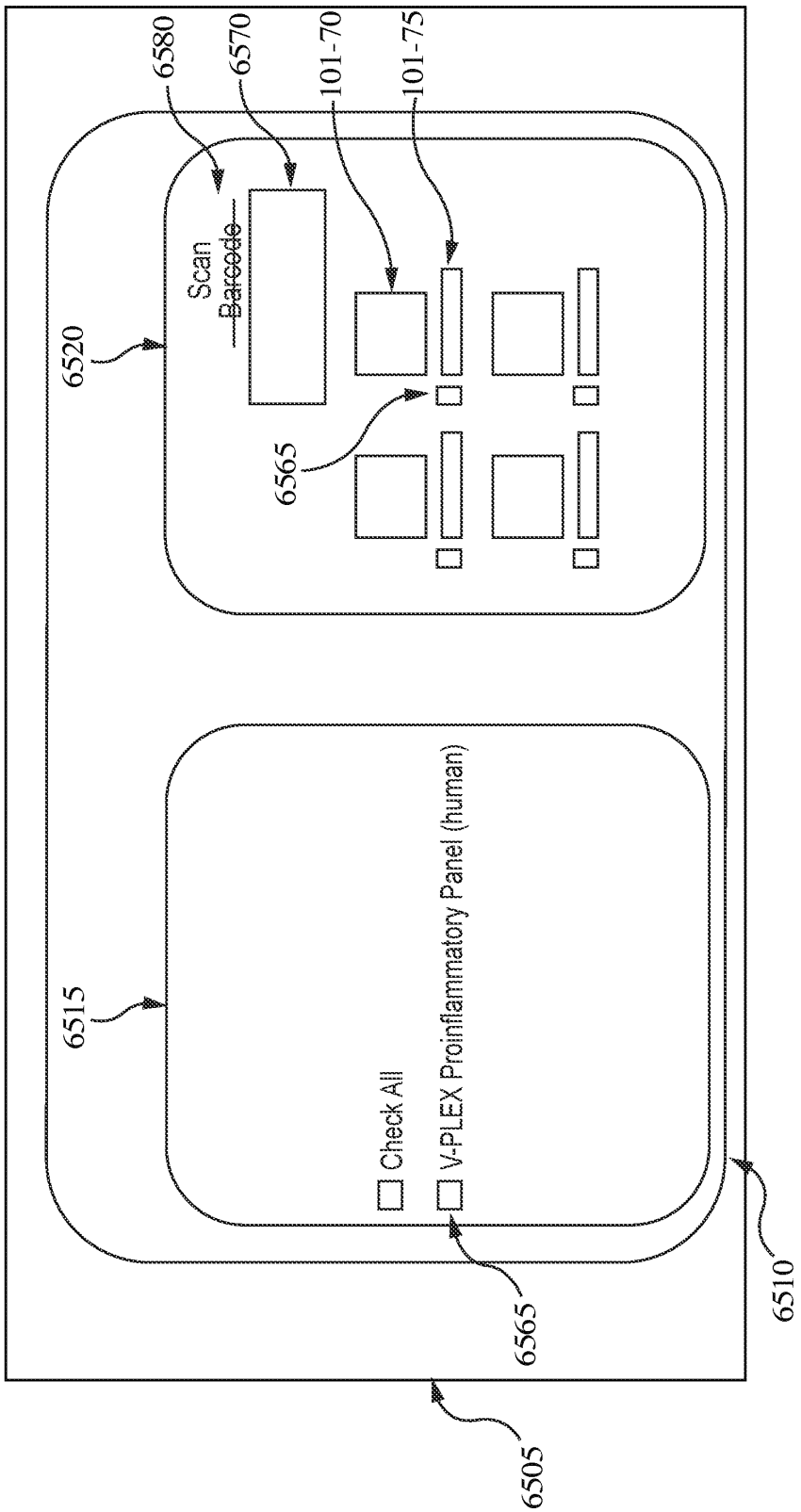
6580
6570
101-70
101-75
Scan
Barcode
6520
6565
6515
Check All
V-PLEX Proinflammatory Panel (human)
6565
6510
6505

FIG. 67

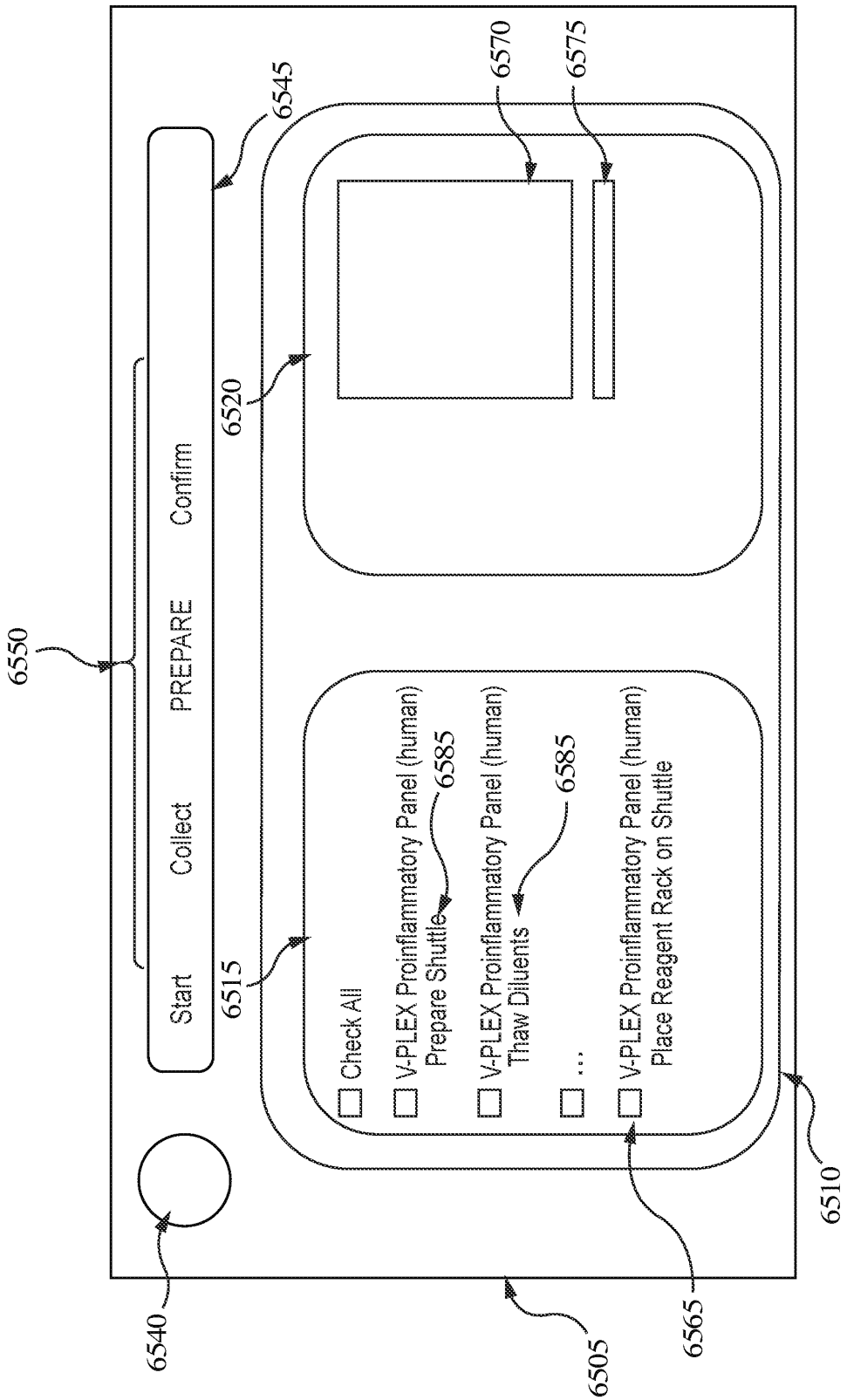
6550
Start
Collect
PREPARE
Confirm
6515
6545
6520
6570
6575
Check All
V-PLEX Proinflammatory Panel (human)
Prepare Shuttle
6585
V-PLEX Proinflammatory Panel (human)
Thaw Diluents
6585
...
V-PLEX Proinflammatory Panel (human)
Place Reagent Rack on Shuttle
6540
6505
6565
6510

FIG. 68

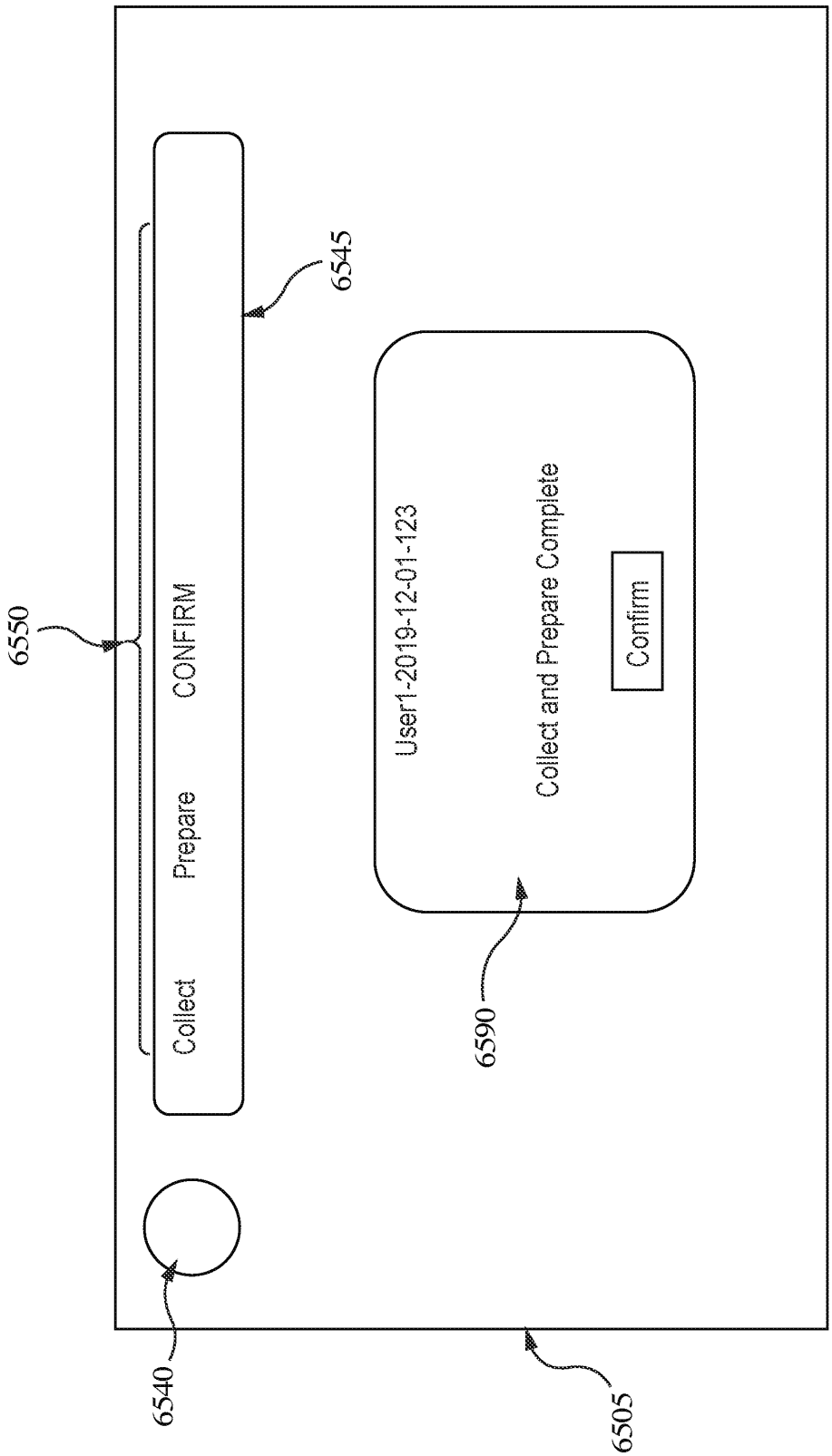
6550
Collect
Prepare
CONFIRM
6545
User1-2019-12-01-123
Collect and Prepare Complete
Confirm
6590
6540
6505

FIG. 69

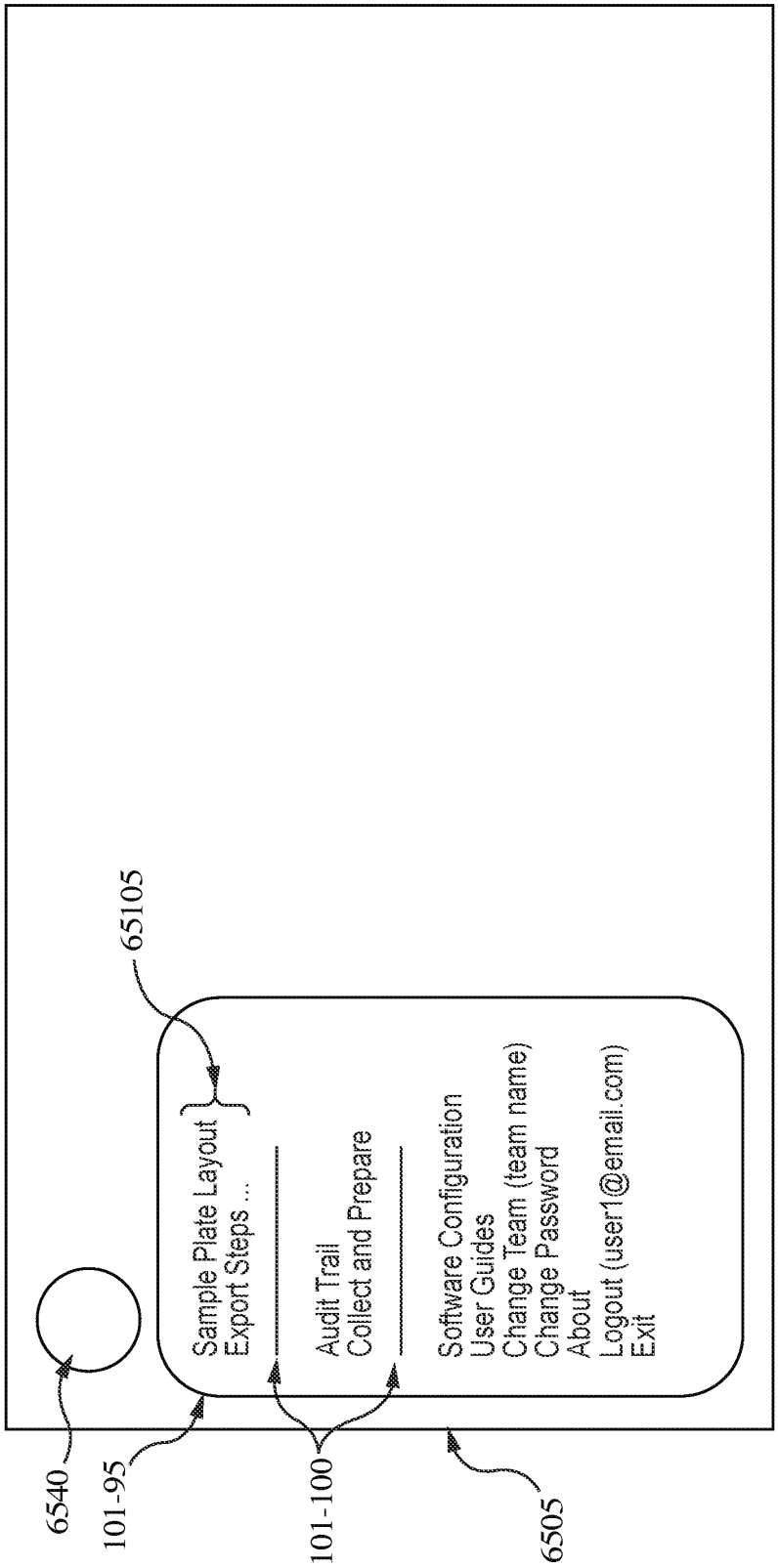
6540
101-95
65105
Sample Plate Layout
Export Steps ...
Audit Trail
Collect and Prepare
Software Configuration
User Guides
Change Team (team name)
Change Password
About
Logout (user1@email.com)
Exit
101-100
6505

FIG. 70

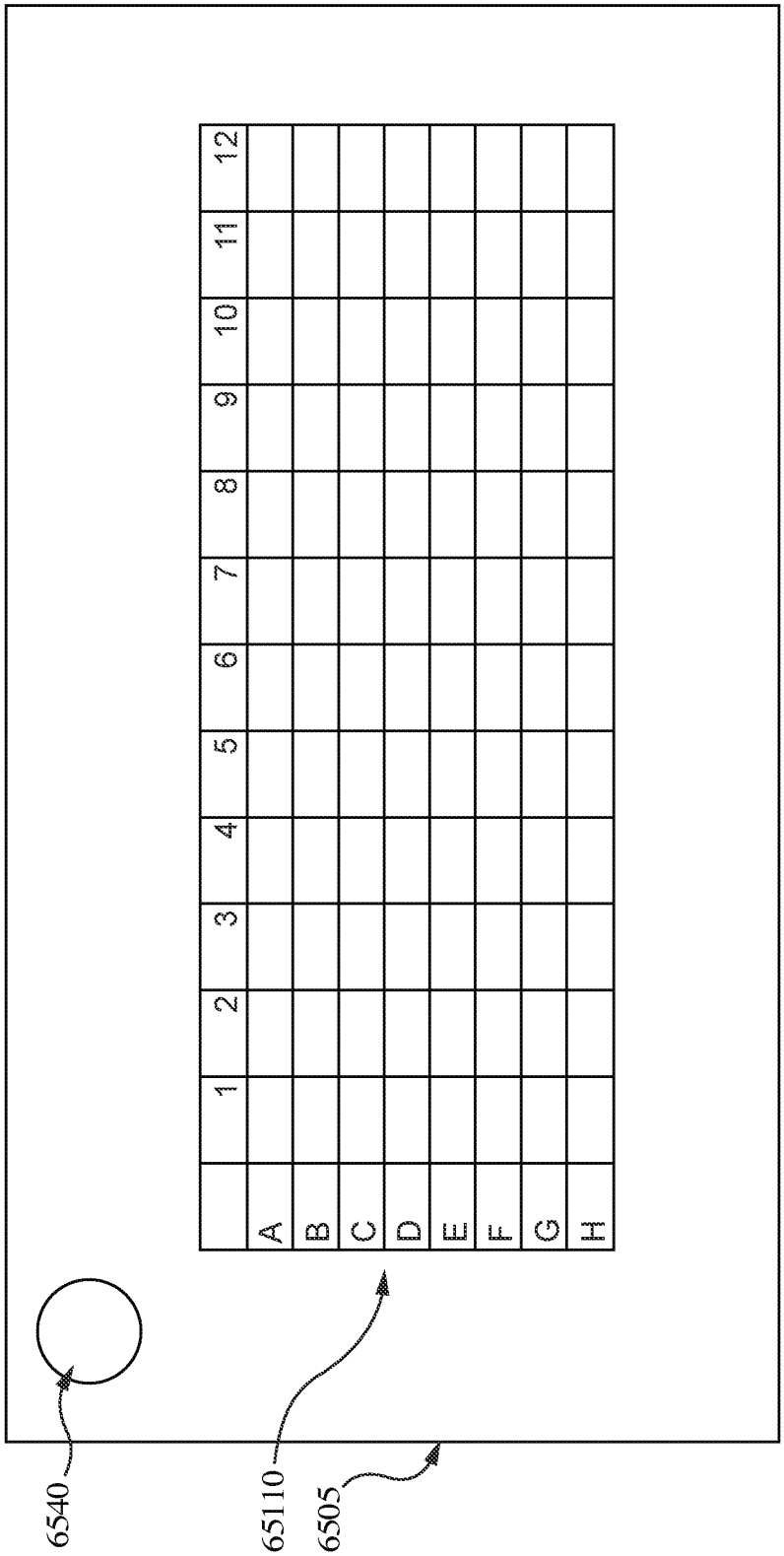

FIG. 71

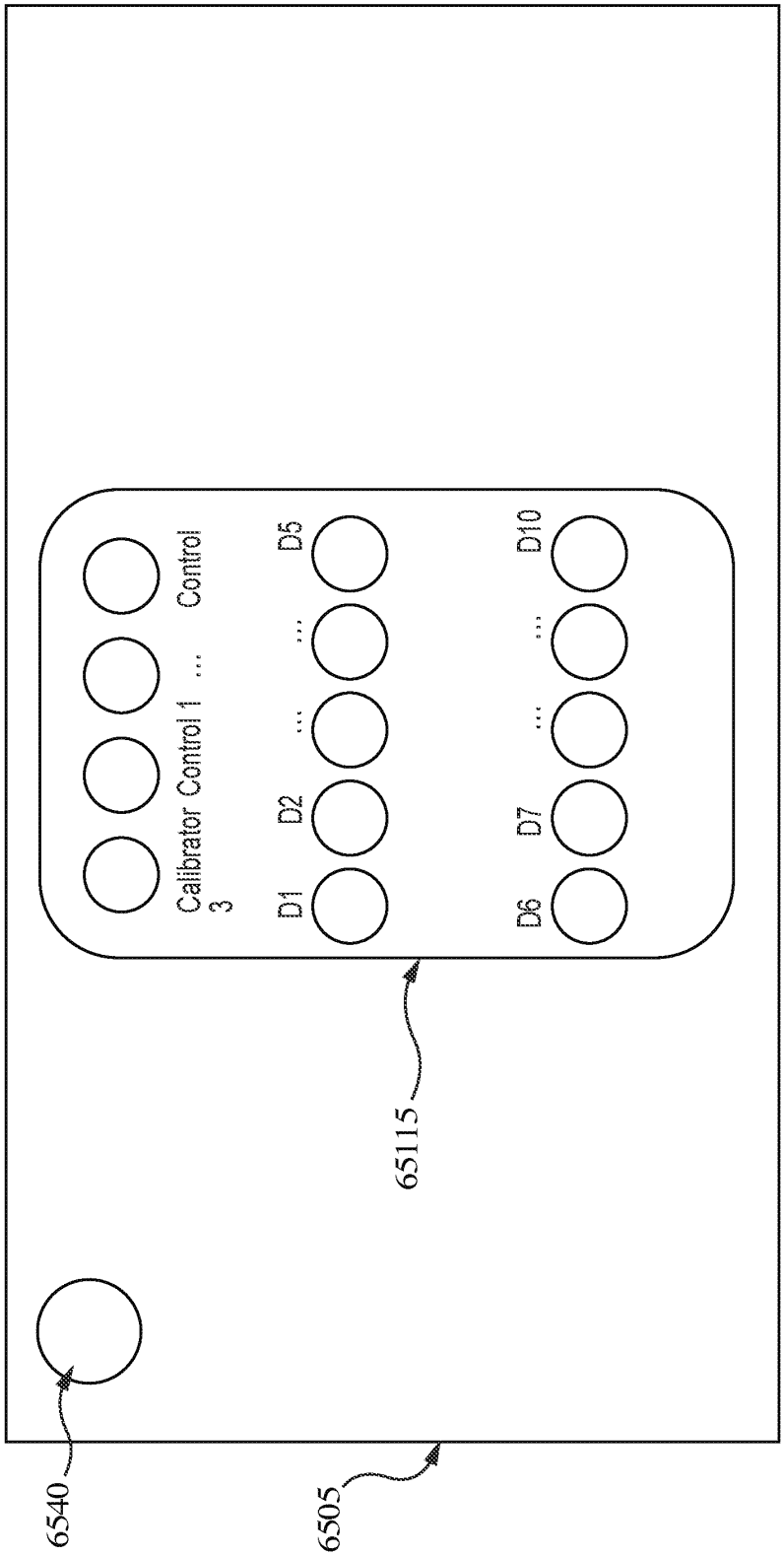
Calibrator Control 1 ... Control 3
D1
D2
...
D5
D6
D7
...
D10
65115
6540
6505

FIG. 72

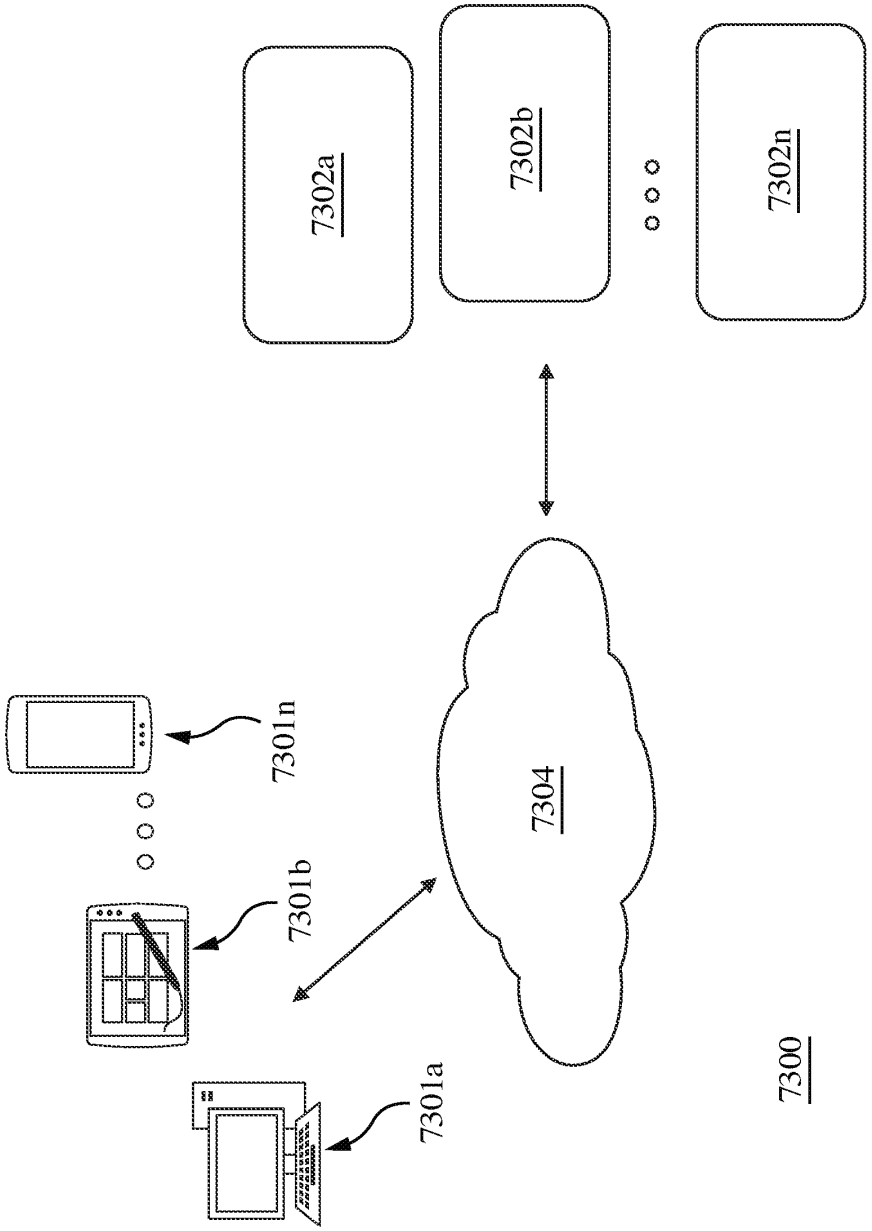

FIG. 73

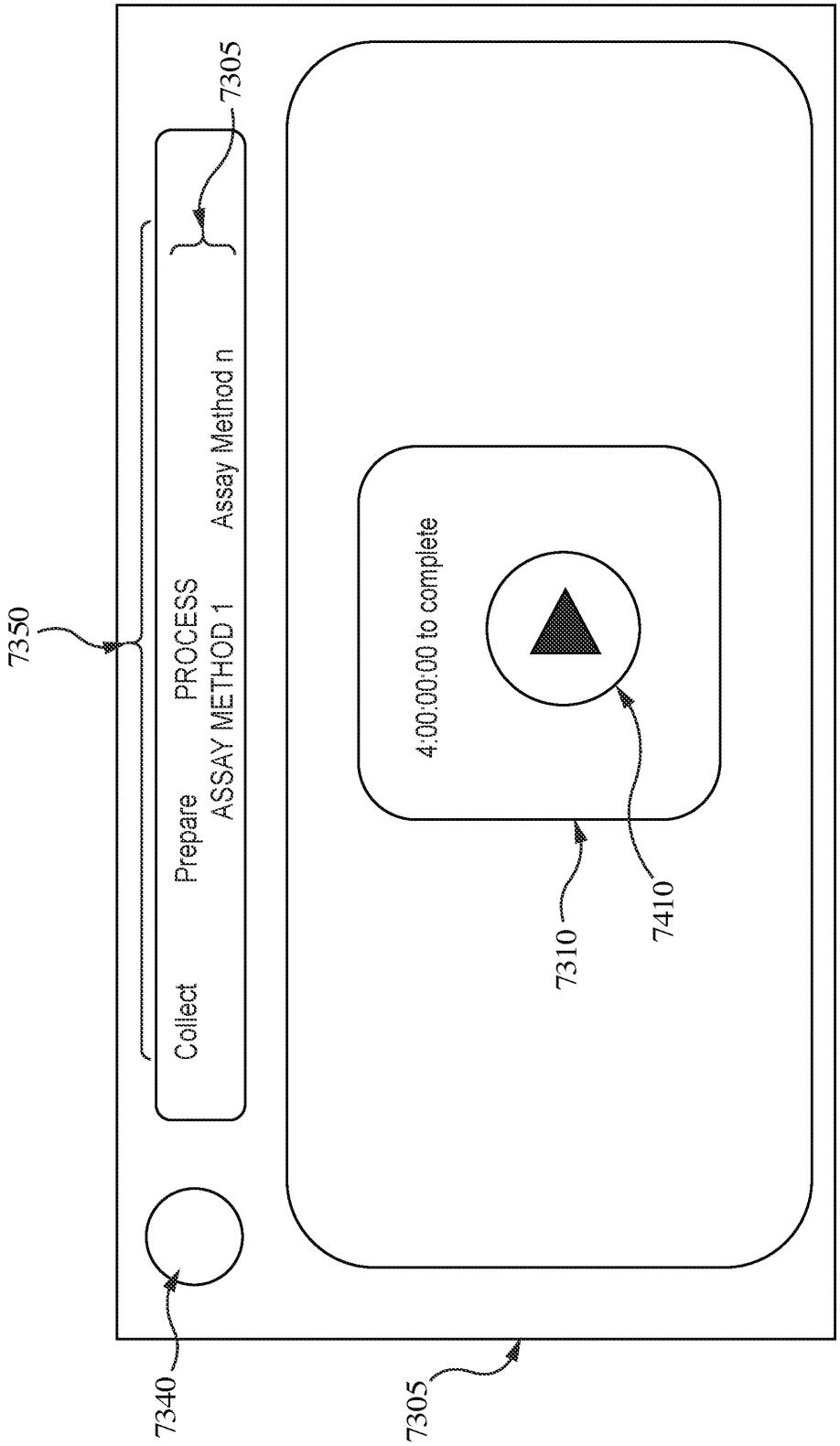
7350
7305
Collect
Prepare
PROCESS
ASSAY METHOD 1
Assay Method n
4:00:00:00 to complete
7310
7410
7340
7305

FIG. 74

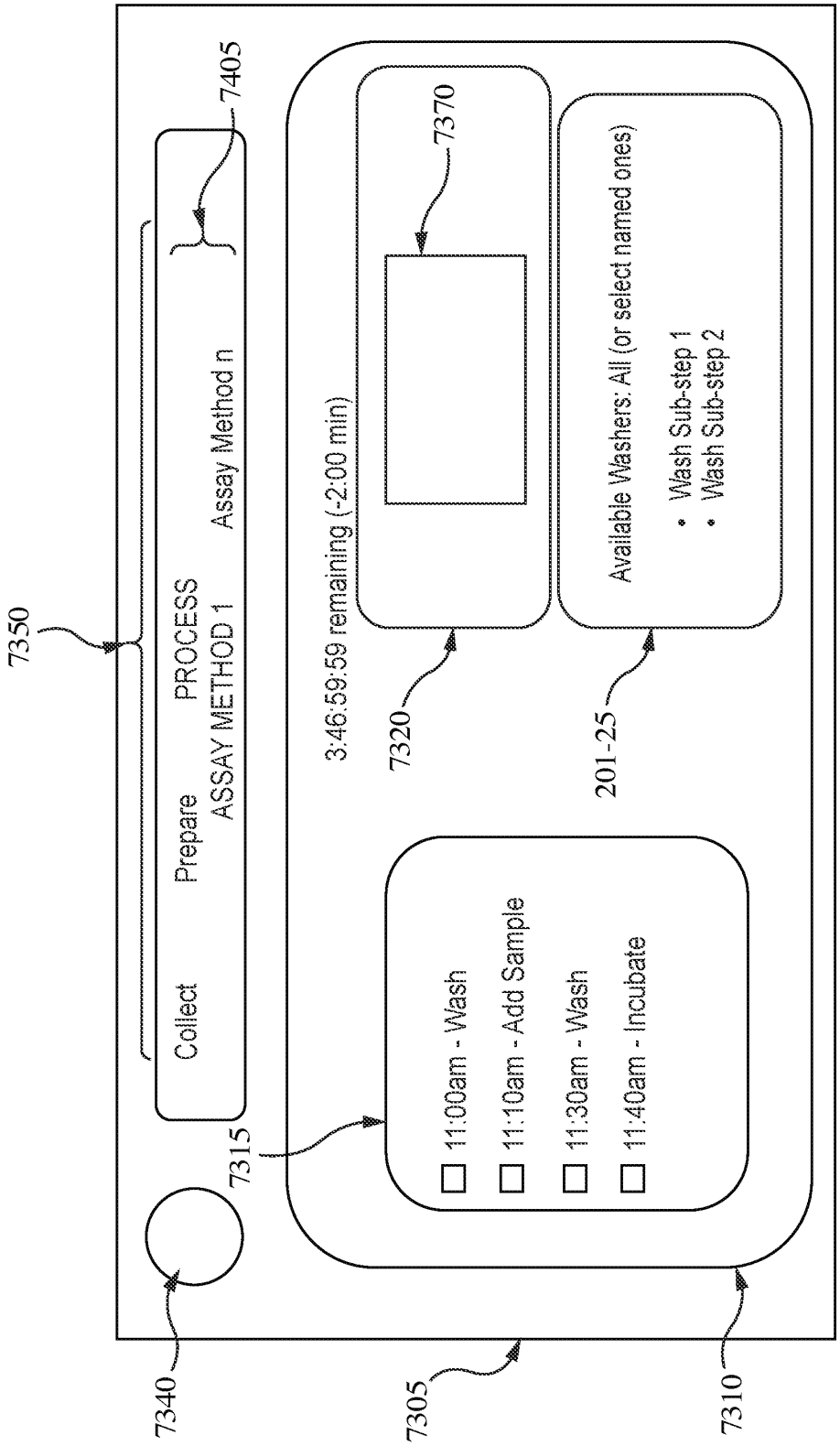
7350
7405
Collect
Prepare
PROCESS
ASSAY METHOD 1
Assay Method n
7315
7340
3:46:59:59 remaining (-2:00 min)
7370
7320
Available Washers: All (or select named ones)
• Wash Sub-step 1
• Wash Sub-step 2
201-25
11:00am - Wash
11:10am - Add Sample
11:30am - Wash
11:40am - Incubate
7305
7310

FIG. 75

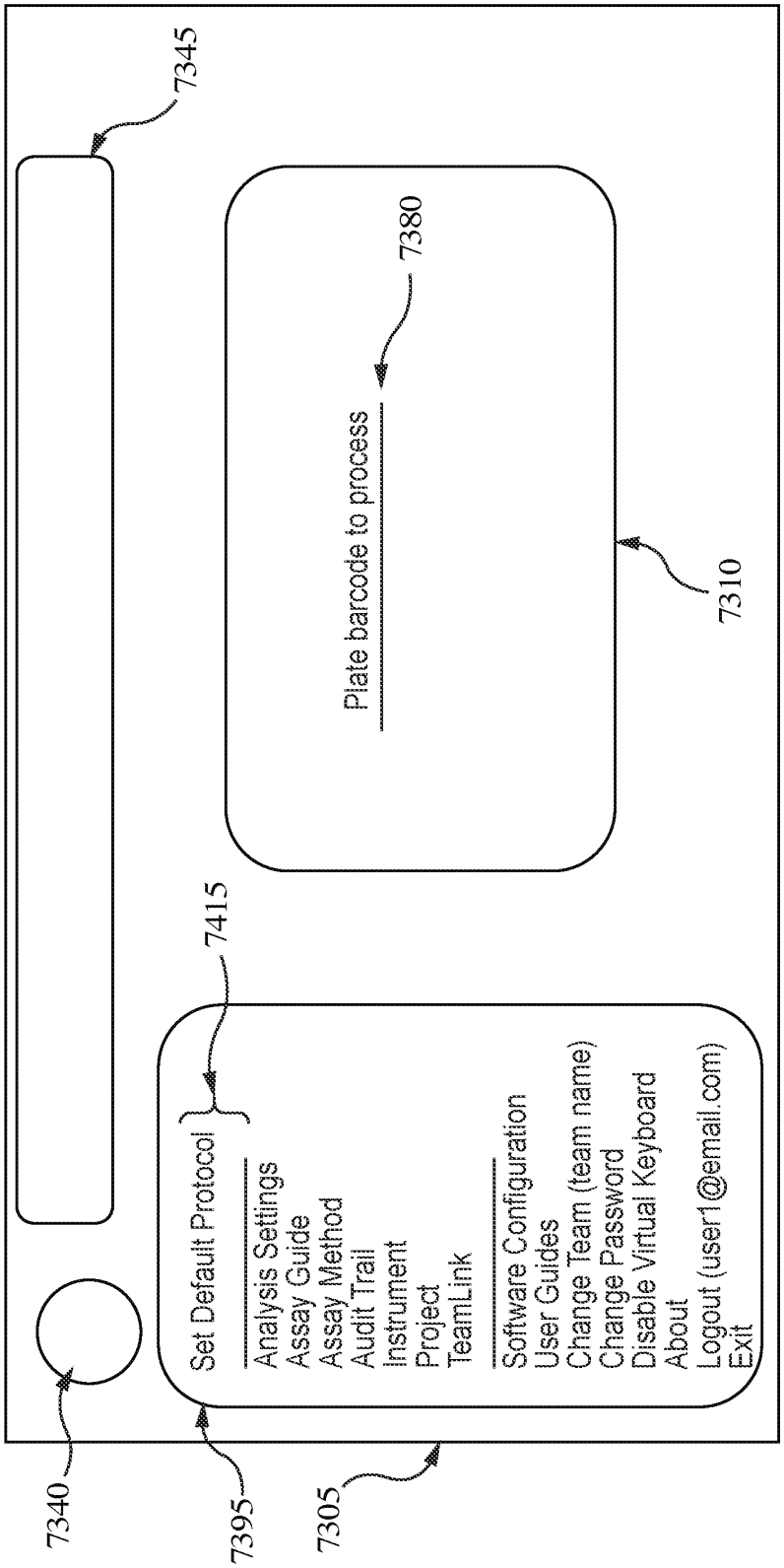
7345
7380
Plate barcode to process
7310
7415
Set Default Protocol
Analysis Settings
Assay Guide
Assay Method
Audit Trail
Instrument
Project
TeamLink
Software Configuration
User Guides
Change Team (team name)
Change Password
Disable Virtual Keyboard
About
Logout (user1@email.com)
Exit
7340
7395
7305

FIG. 76

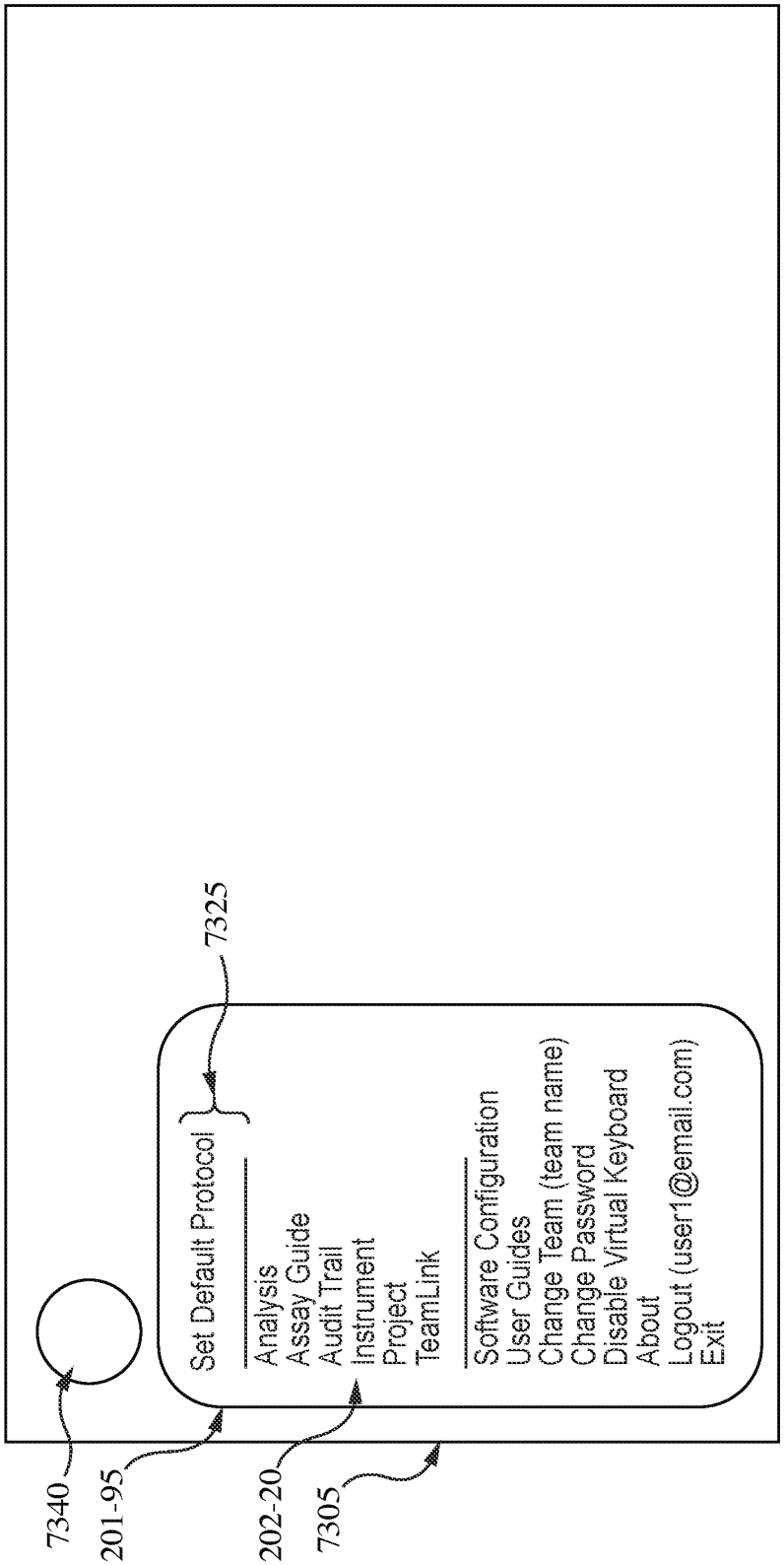
7340
201-95
202-20
7305
7325
Set Default Protocol
Analysis
Assay Guide
Audit Trail
Instrument
Project
TeamLink
Software Configuration
User Guides
Change Team (team name)
Change Password
Disable Virtual Keyboard
About
Logout (user1@email.com)
Exit

FIG. 77A

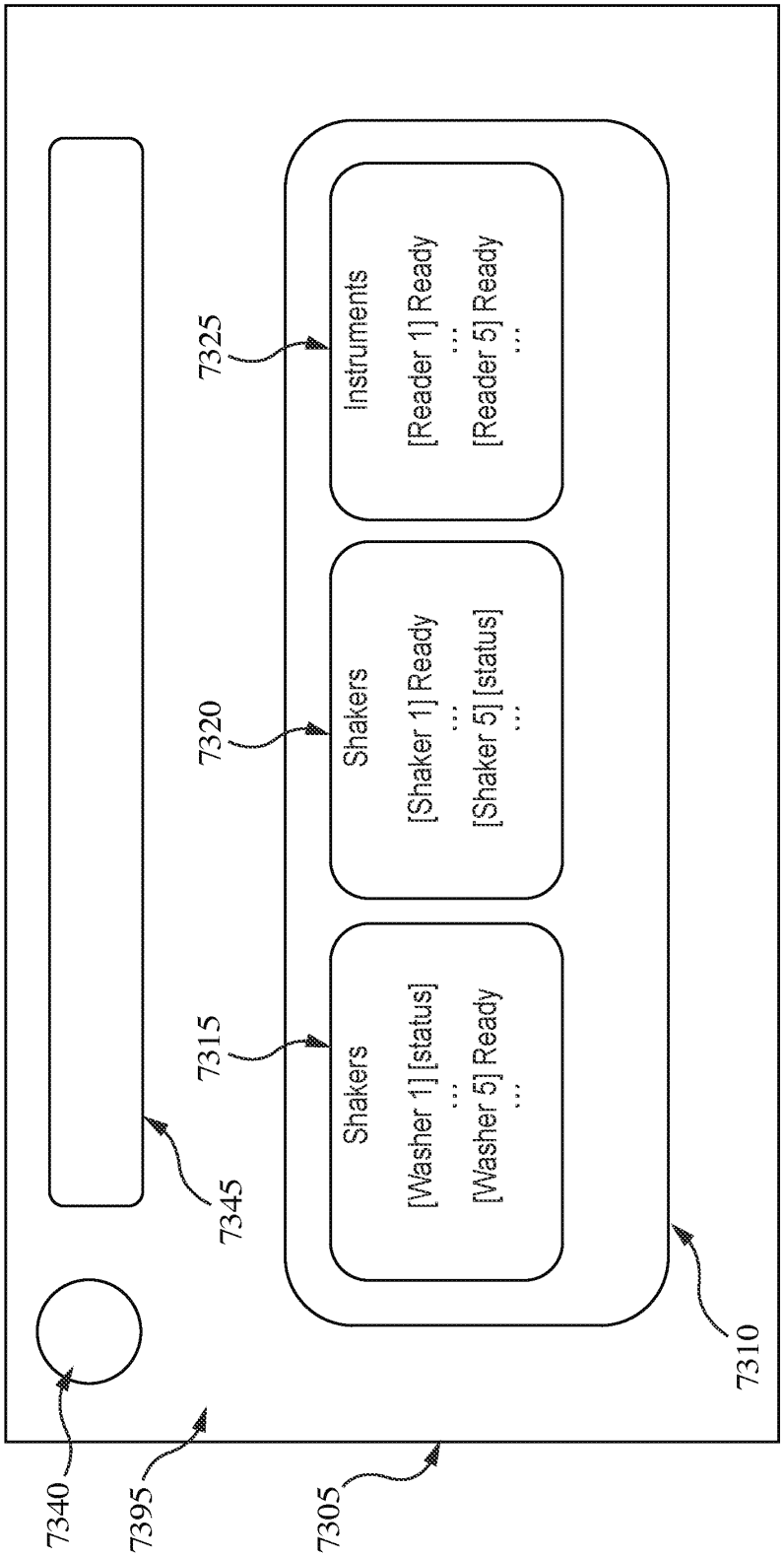
7340
7395
7305
7345
7315
Shakers
[Washer 1] [status]
...
[Washer 5] Ready
...
7320
Shakers
[Shaker 1] Ready
...
[Shaker 5] [status]
...
7325
Instruments
[Reader 1] Ready
...
[Reader 5] Ready
...
7310

FIG. 77B

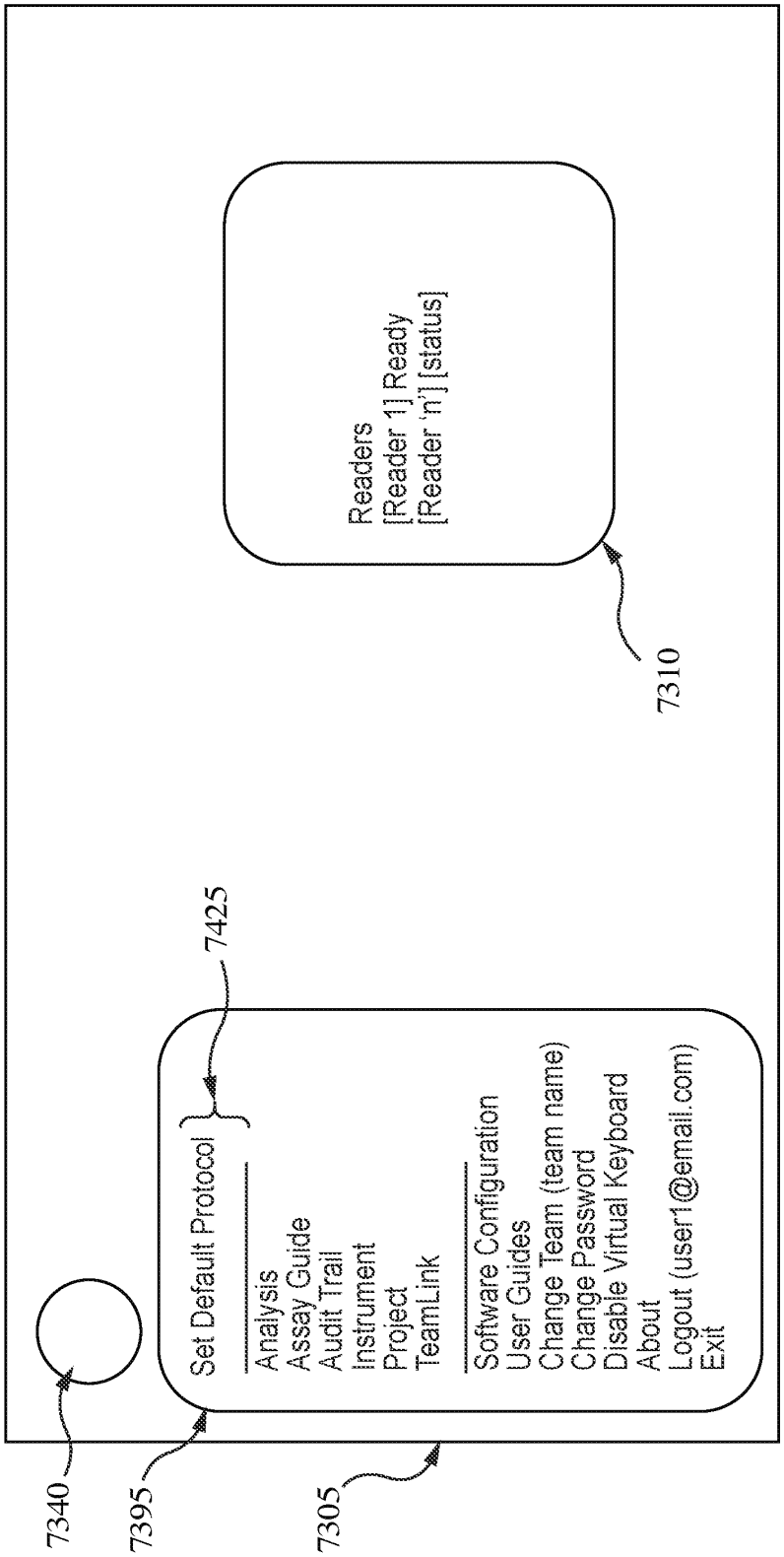
Set Default Protocol
Analysis
Assay Guide
Audit Trail
Instrument
Project
TeamLink
Software Configuration
User Guides
Change Team (team name)
Change Password
Disable Virtual Keyboard
About
Logout (user1@email.com)
Exit
Readers
[Reader 1] Ready
[Reader 'n'] [status]
7340
7395
7305
7425
7310

FIG. 77C

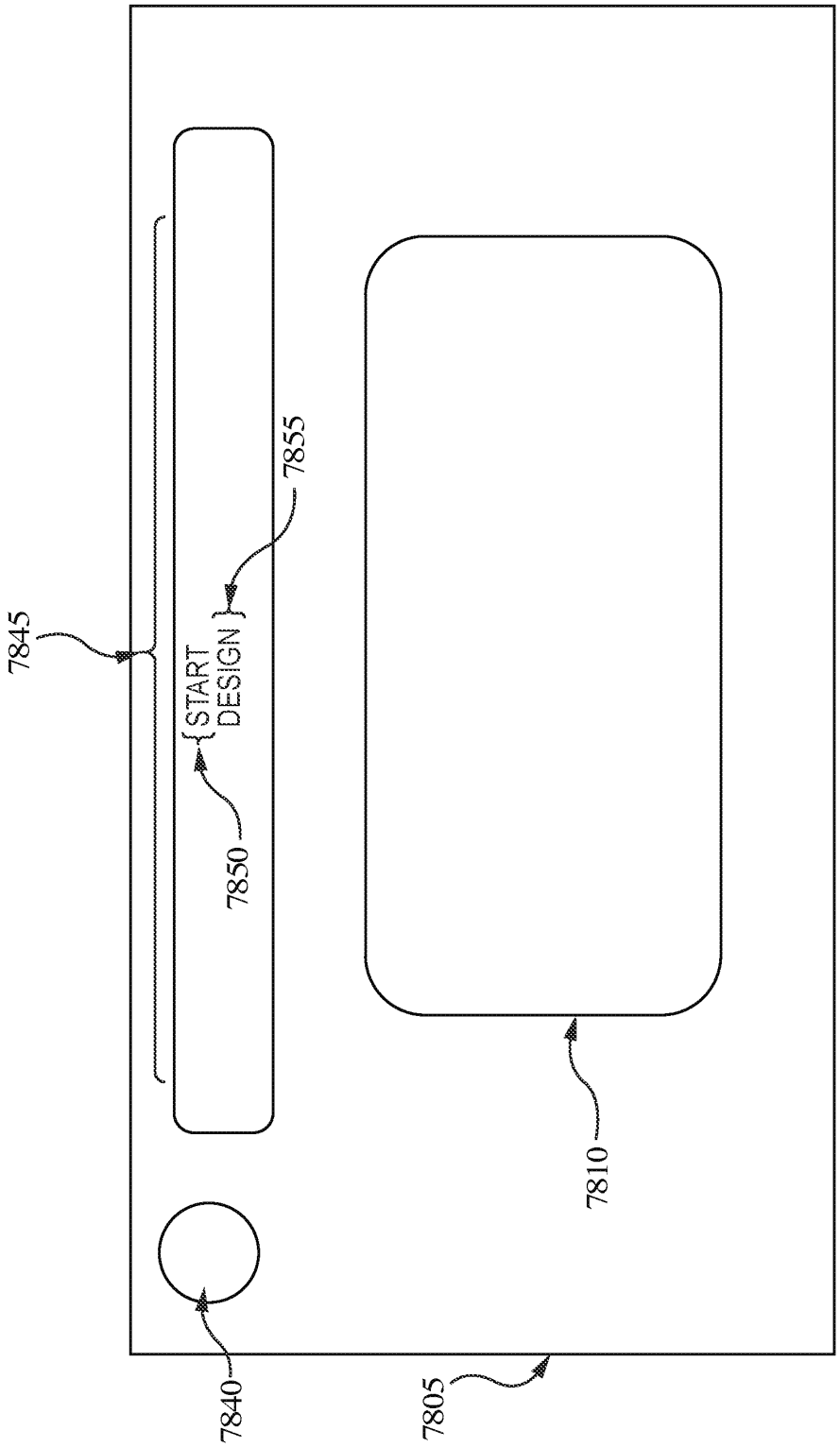

FIG. 78

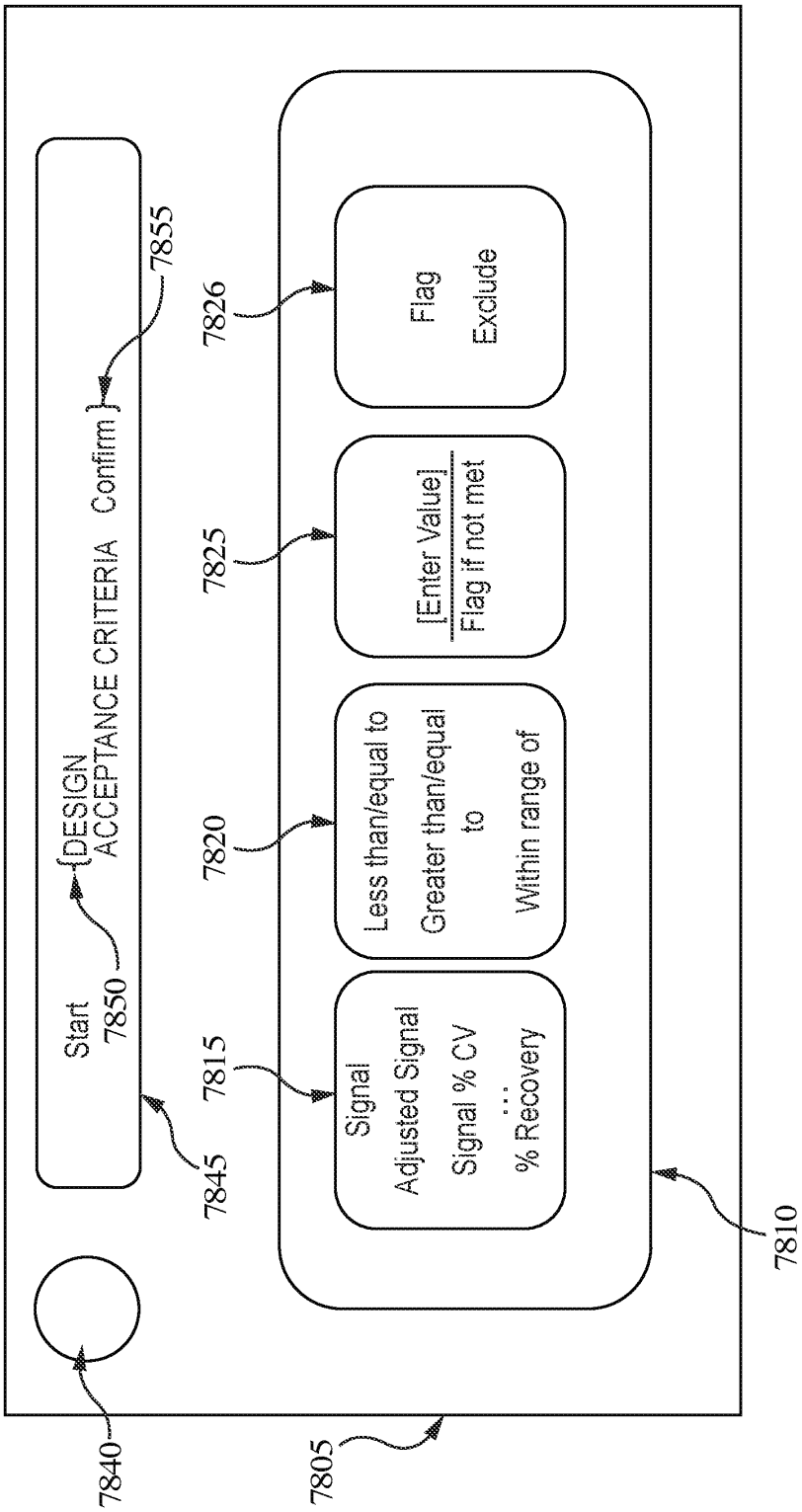
Start
7850
{DESIGN
ACCEPTANCE CRITERIA Confirm}
7855
7845
7815
Signal
Adjusted Signal
Signal % CV
...
% Recovery
7820
Less than/equal to
Greater than/equal
to
Within range of
7825
[Enter Value]
Flag if not met
7826
Flag
Exclude
7810
7840
7805

FIG. 79

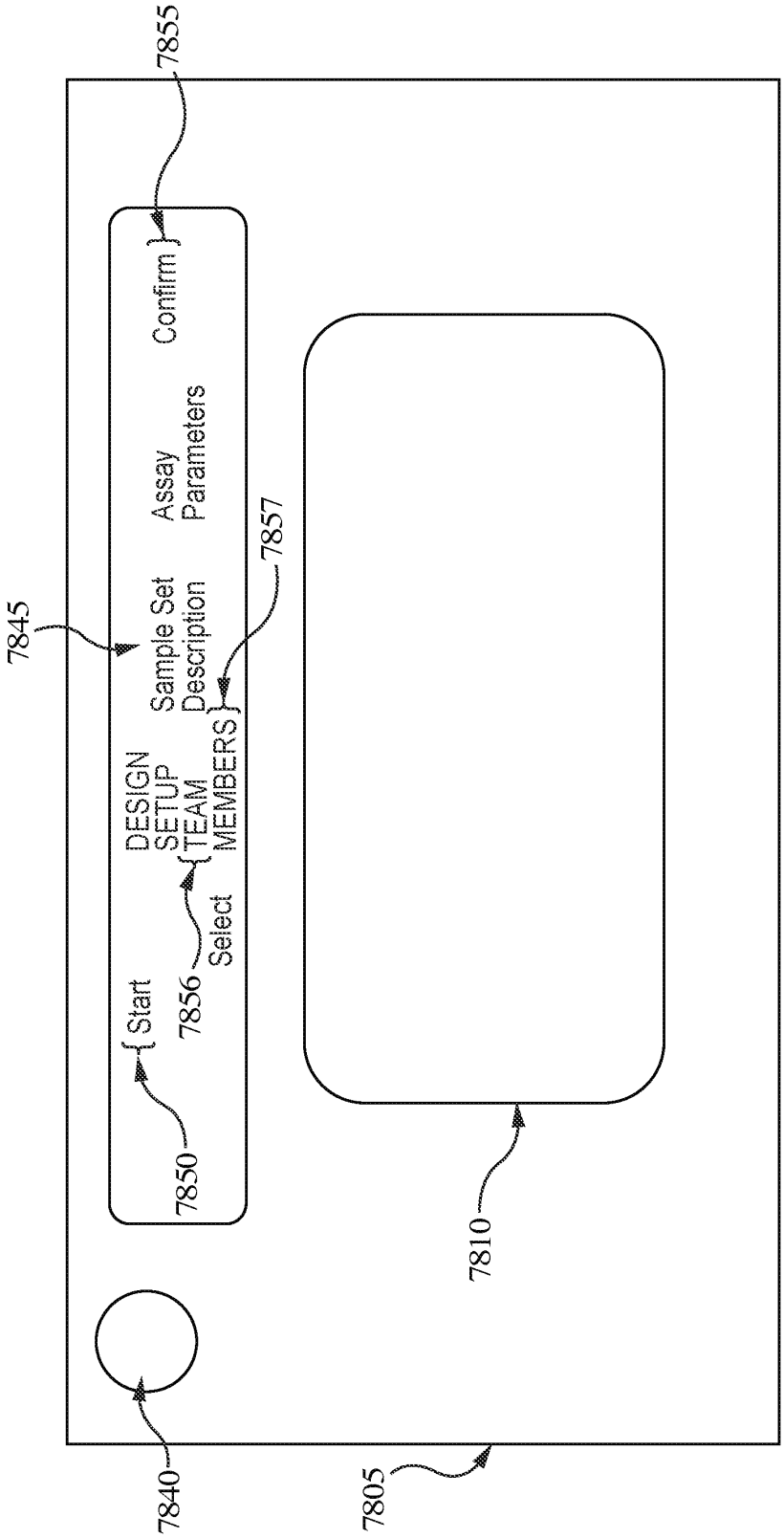
7855
Confirm
Assay Parameters
7857
7845
Sample Set Description
DESIGN SETUP TEAM MEMBERS
Select
7856
Start
7850
7810
7840
7805

FIG. 80

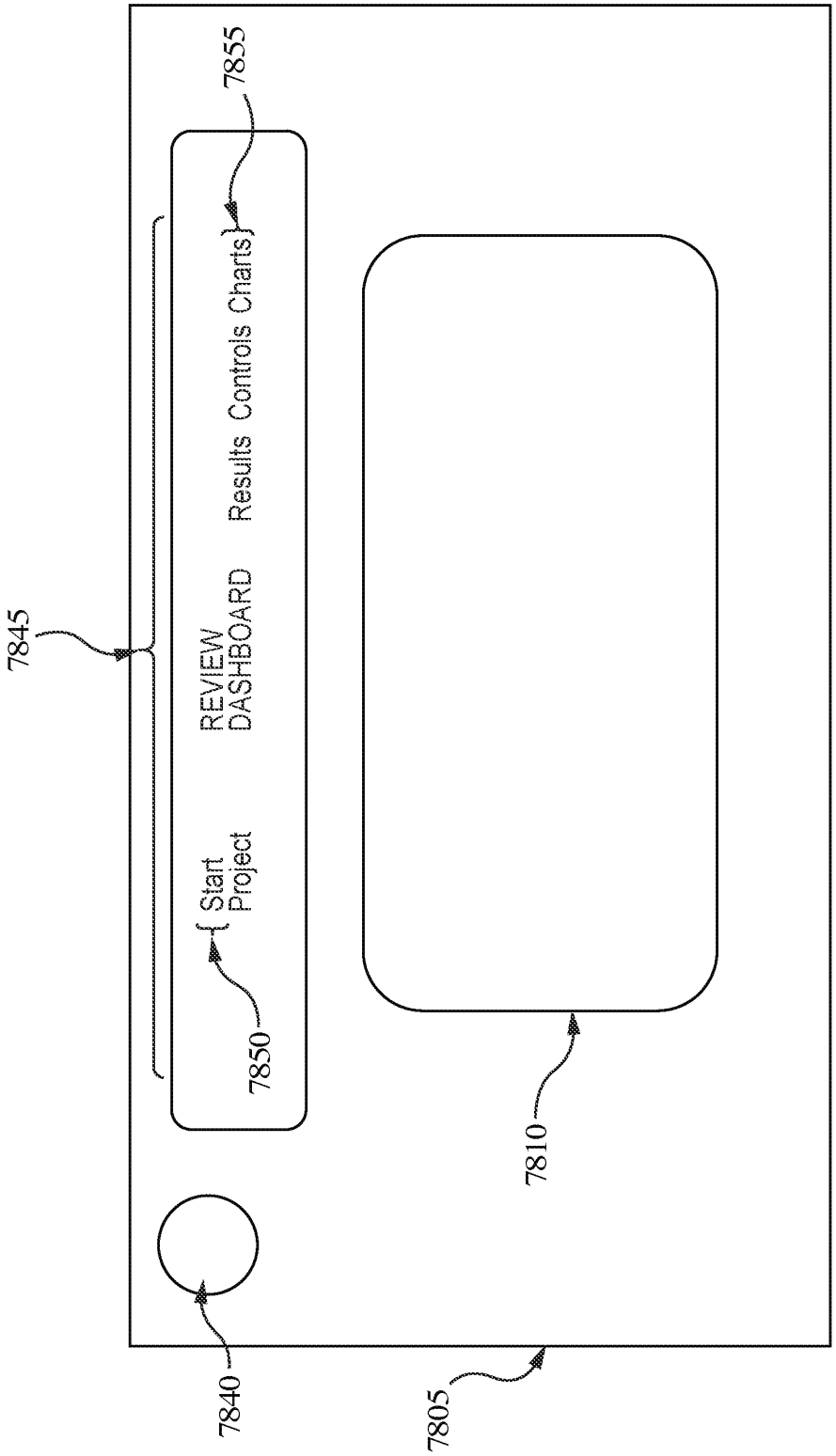
7845
7855
Start Project
REVIEW DASHBOARD
Results
Controls
Charts
7850
7810
7840
7805

FIG. 81

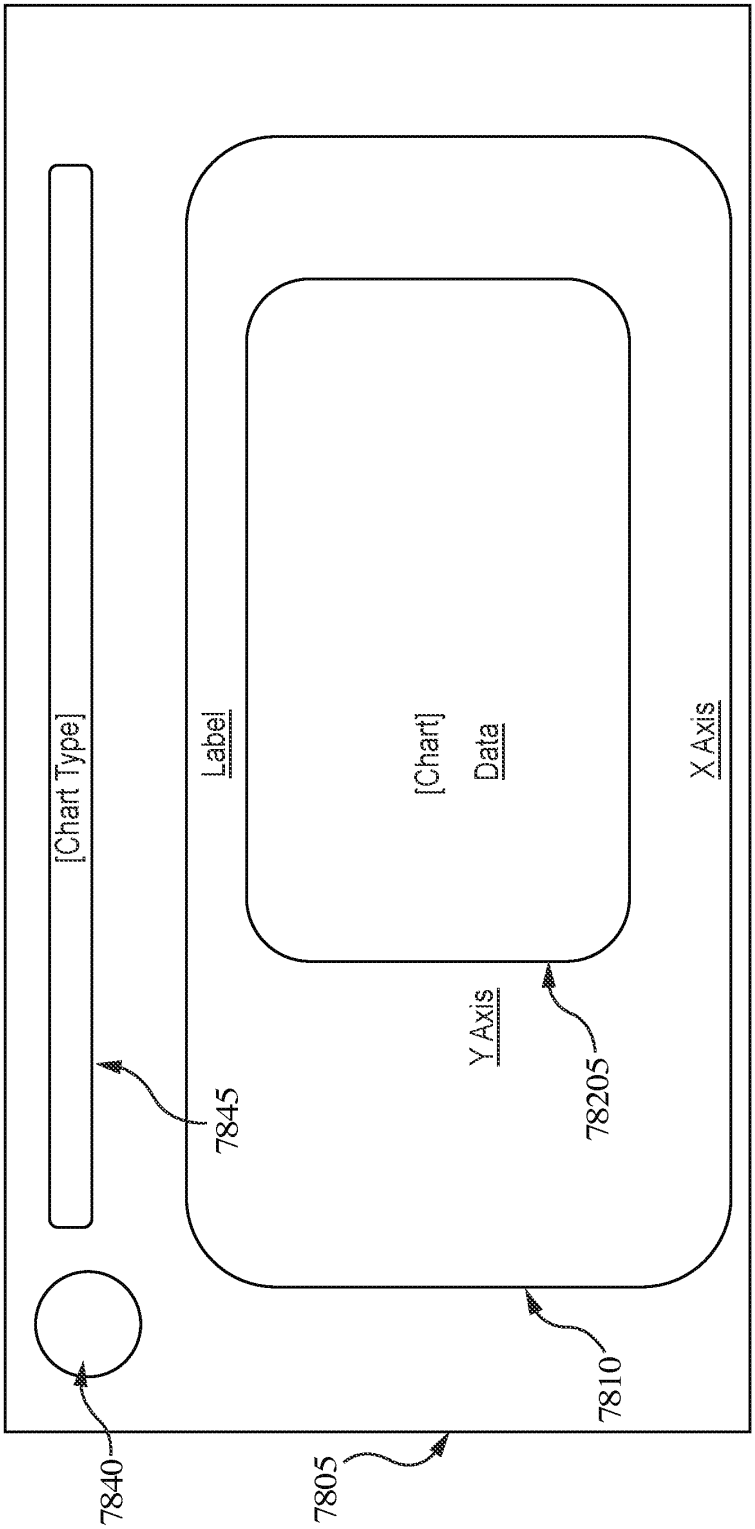
[Chart Type]
Label
[Chart]
Data
X Axis
Y Axis
7845
78205
7810
7840
7805

FIG. 82

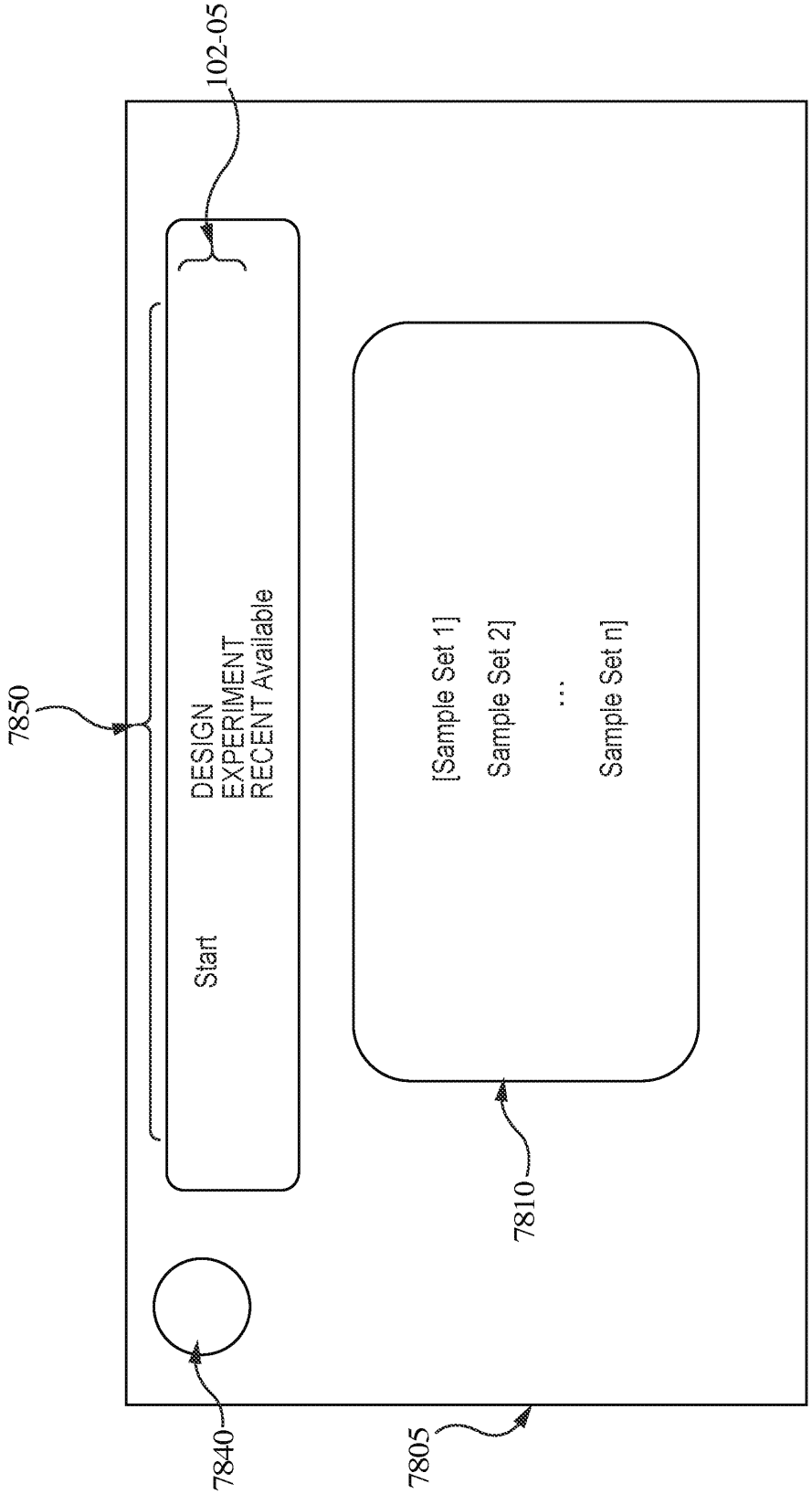
7850
102-05
Start
DESIGN
EXPERIMENT
RECENT Available
[Sample Set 1]
Sample Set 2]
...
Sample Set n]
7810
7840
7805

FIG. 83

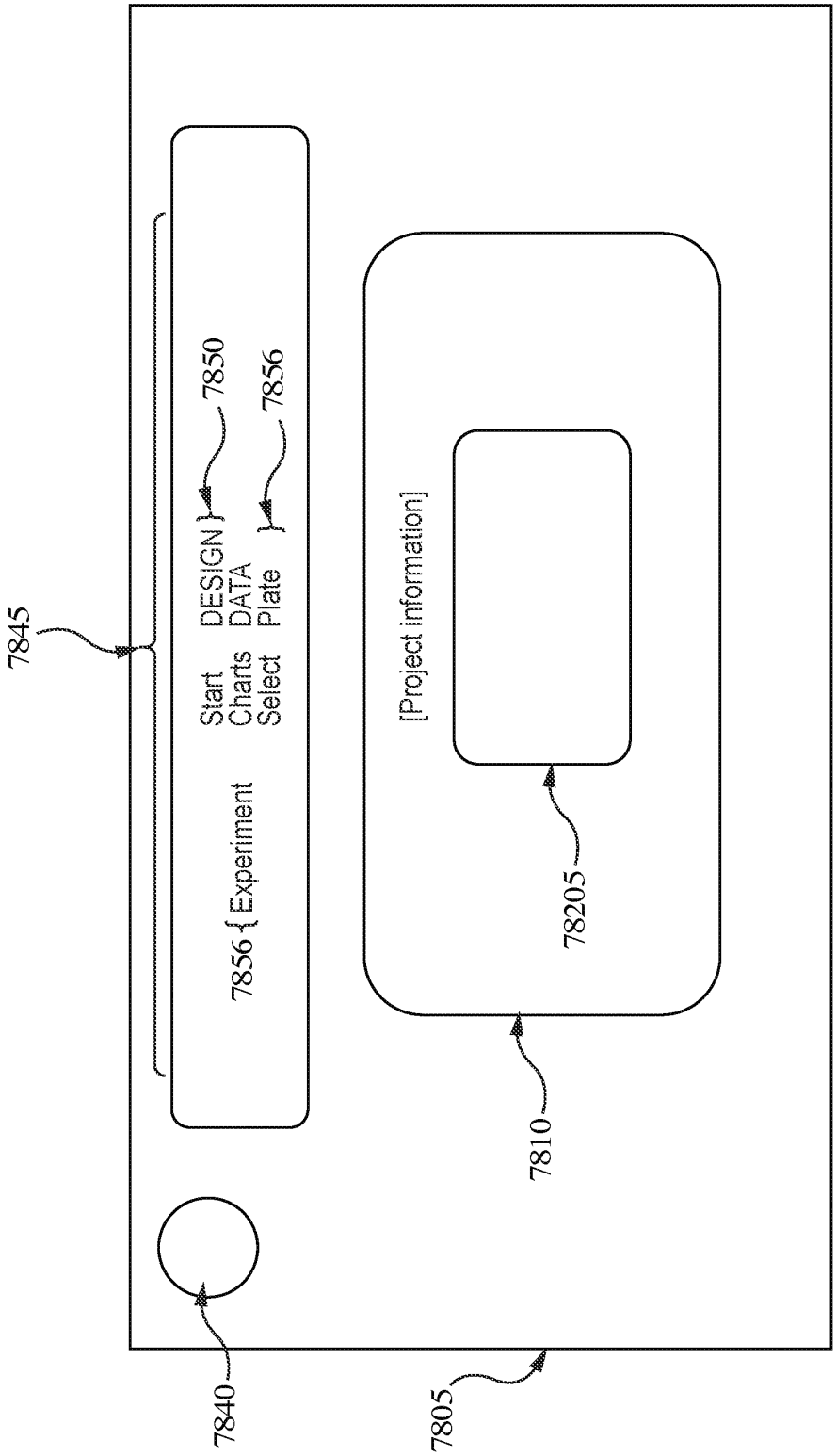
7845
7856
Experiment
Start
Charts
Select
DESIGN
DATA
Plate
7850
7856
[Project information]
78205
7810
7840
7805

FIG. 84

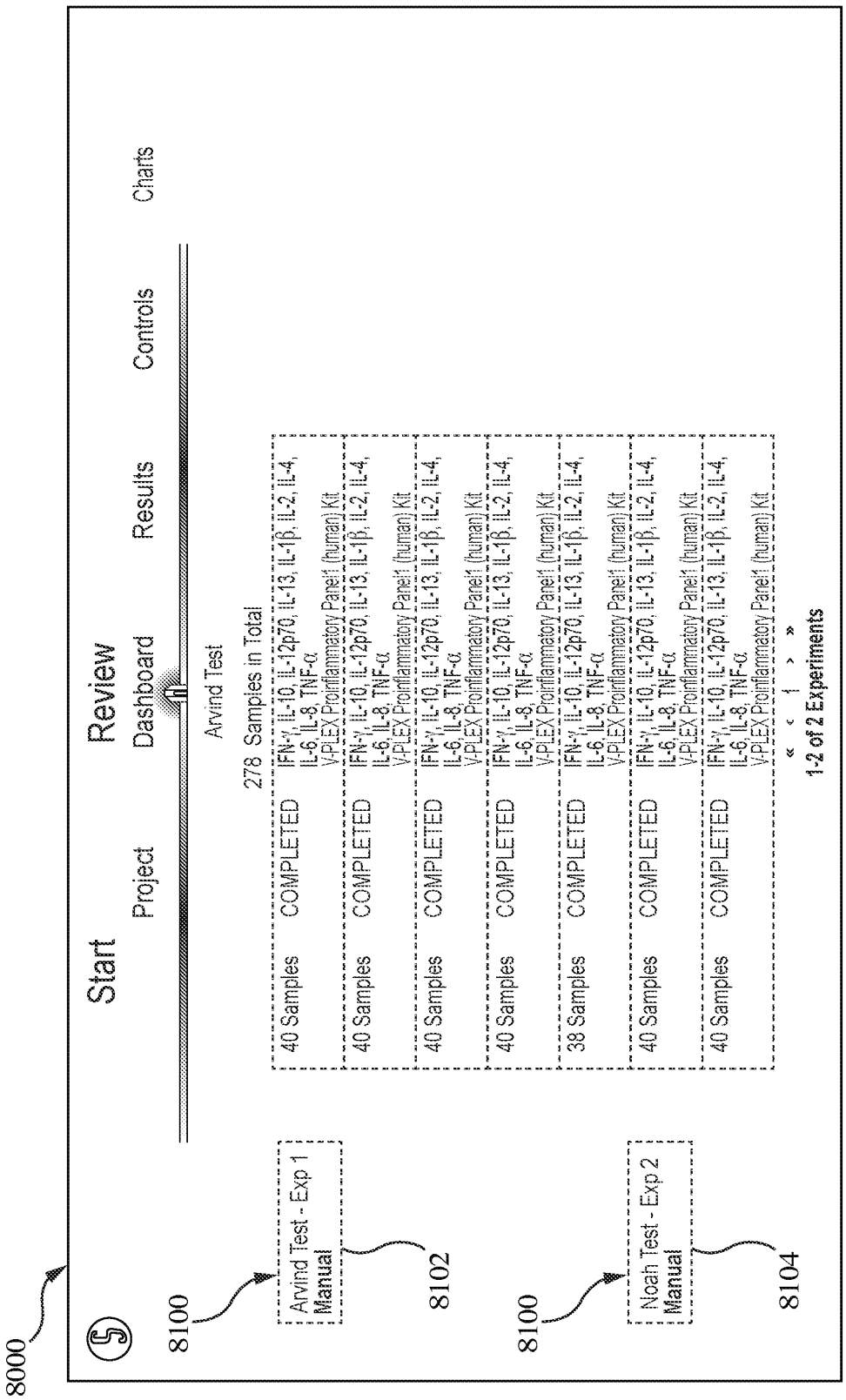
8000
Start
Review
Project
Dashboard
Results
Controls
Charts
8100
Arvind Test - Exp 1
Manual
8102
Arvind Test
278 Samples in Total
40 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
40 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
40 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
40 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
38 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
40 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
40 Samples COMPLETED IFN-γ, IL-10, IL-12p70, IL-13, IL-1β, IL-2, IL-4, IL-6, IL-8, TNF-α V-PLEX Proinflammatory Panel1 (human) Kit
« ‹ 1 › »
1-2 of 2 Experiments
8100
Noah Test - Exp 2
Manual
8104

FIG. 85

8000

Start Review

Project Dashboard Results Controls Charts

	IFN-γ (pg/mL)			IL-10 (pg/mL)			IL-12p70 (pg/mL)			IL-13 (pg/mL)			IL-1β (pg/mL)	
Sample ID	Avg. Signal	Avg. Calc. Conc.	Calc. Conc. CV	Avg. Signal	Avg. Calc. Conc.	Calc. Conc. CV	Avg. Signal	Avg. Calc. Conc.	Calc. Conc. CV	Avg. Signal	Avg. Calc. Conc.	Calc. Conc. CV	Avg. Signal	Avg. Calc. Conc.
1	67452	225	3.4	1977	4.62	2	97252	97.7	2.8	185840	294	0	53805	342
2	32508	104	1.6	1047	2.37	5.1	49739	49.1	7.6	83942	133	0.5	29049	180
3	16920	52.7	1.1	587	1.16	5.9	25074	24.3	4.6	39544	62.5	6.1	13962	84.1
4	76599	257	1.5	1465	3.41	4.8	84890	84.9	0.9	224598	355	1.8	50777	322
5	38515	125	0.4	751	1.6	6.1	43070	42.3	3.1	104806	166	1.3	25998	161
10	58358	193	4.3	15169	32	2.3	110073	111	4	293878	464	1.7	54290	345
11	30683	98.3	1.8	7161	16	3.2	56004	55.4	2.8	126674	200	1.9	28297	175
12	15156	47	0.5	3389	7.89	2.5	27127	26.3	4.9	58997	93.4	2	13414	80.6
13	95515	324	1.2	27695	55.5	0.2	94541	94.9	3.8	406796	642	0	63094	404
14	47696	156	3.5	11634	25.1	4.8	46080	45.4	3.8	187003	296	1.9	32353	202
15	23866	75.6	0.9	5592	12.7	3	23560	22.8	1.1	95918	152	3.5	17023	103
16	167	0.0138	0	189	NaN	NaN	198	0.0347	12.3	267	NaN	NaN	538	0.139
17	177	0.0382	117.2	165	NaN	NaN	178	0.018	6.7	242	NaN	NaN	561	NaN
18	156	NaN	NaN	163	NaN	NaN	210	0.0453	71.9	255	NaN	NaN	487	NaN
19	22723	71.8	0.7	5536	12.6	2.9	39894	39.1	2	53403	84.5	2.2	36295	227
20	11625	35.5	0.8	2677	6.27	2.4	20219	19.4	1.7	25582	40.4	3.8	19321	118
21	6082	17.9	0.2	1418	3.3	5.3	10506	9.88	0	13205	20.7	1.3	10054	59.5
22	20717	65.2	0.1	5663	12.8	6.5	56904	56.3	4.2	54744	86.6	3.7	31402	195
23	10220	31	2.5	2549	5.98	1.6	29004	28.2	2.6	28529	45	5.8	16351	99.2
24	5538	16.2	4	1423	3.31	0.4	15059	14.3	1.3	14634	22.9	2.4	8961	52.6
25	9164	27.7	8	195	NaN	NaN	4700	4.26	3.8	175574	178	4.5	34366	215
26	4335	12.5	4.9	162	NaN	NaN	2410	2.08	7.1	80195	127	1.7	17696	108

« ‹ 1 2 3 4 › »

1 - 50 of 198 Samples

FIG. 86

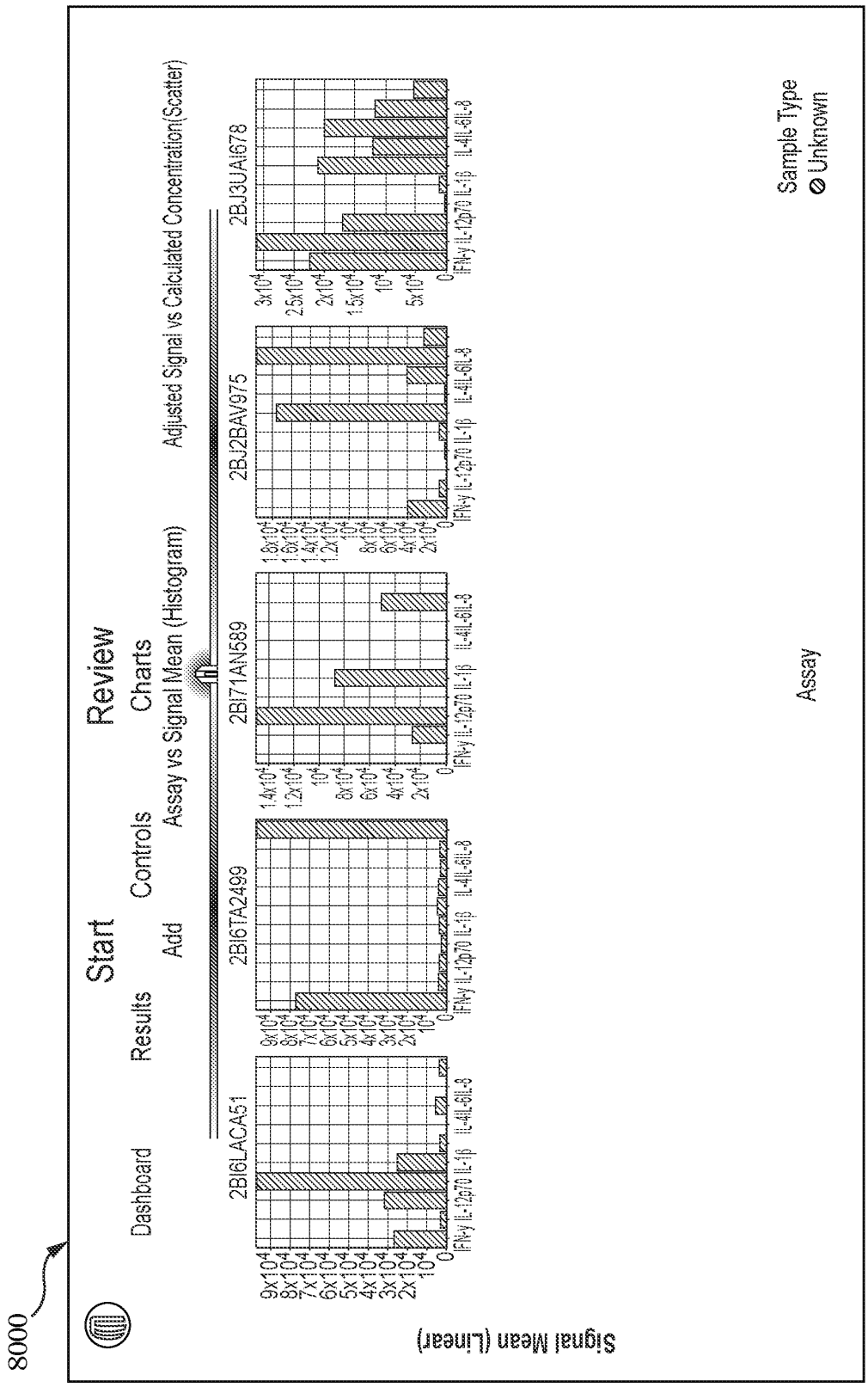
8000
Dashboard
Results
Start
Add
Controls
Review
Charts
Assay vs Signal Mean (Histogram)
Adjusted Signal vs Calculated Concentration(Scatter)
2BI6LACA51
2BI6TA2499
2BI71AN589
2BJ2BAV975
2BJ3UAI678
IFN-γ IL-12p70 IL-1β IL-4 IL-6 IL-8
Signal Mean (Linear)
Assay
Sample Type
Unknown

FIG. 87

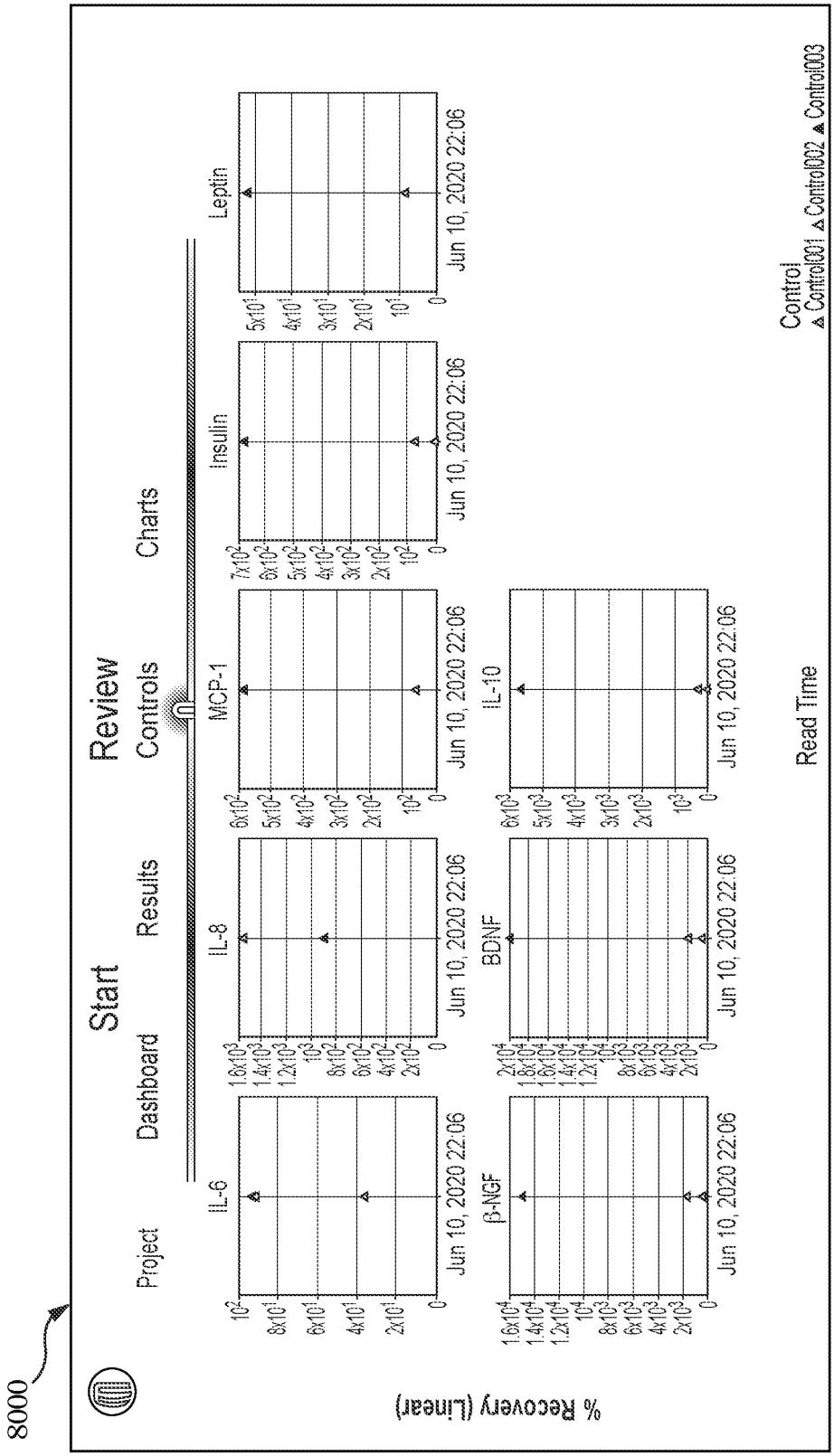
8000
Project
Dashboard
Start
Results
Controls
Review
Charts
IL-6
IL-8
MCP-1
Insulin
Leptin
β-NGF
BDNF
IL-10
Jun 10, 2020 22:06
% Recovery (Linear)
Read Time
Control
Control001
Control002
Control003

FIG. 88

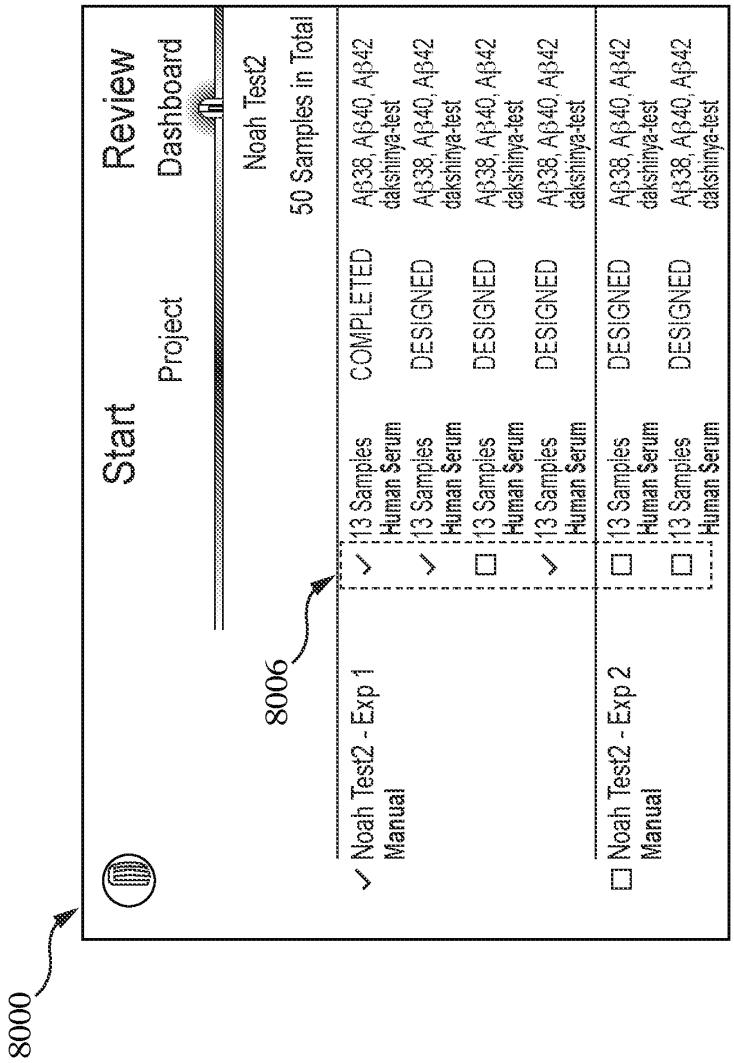
8000
Start
Project
Review
Dashboard
8006
Noah Test2
50 Samples in Total
Noah Test2 - Exp 1
Manual
13 Samples
Human Serum
COMPLETED
Aβ38, Aβ40, Aβ42
dakshinya-test
13 Samples
Human Serum
DESIGNED
Aβ38, Aβ40, Aβ42
dakshinya-test
13 Samples
Human Serum
DESIGNED
Aβ38, Aβ40, Aβ42
dakshinya-test
13 Samples
Human Serum
DESIGNED
Aβ38, Aβ40, Aβ42
dakshinya-test
Noah Test2 - Exp 2
Manual
13 Samples
Human Serum
DESIGNED
Aβ38, Aβ40, Aβ42
dakshinya-test
13 Samples
Human Serum
DESIGNED
Aβ38, Aβ40, Aβ42
dakshinya-test

FIG. 89

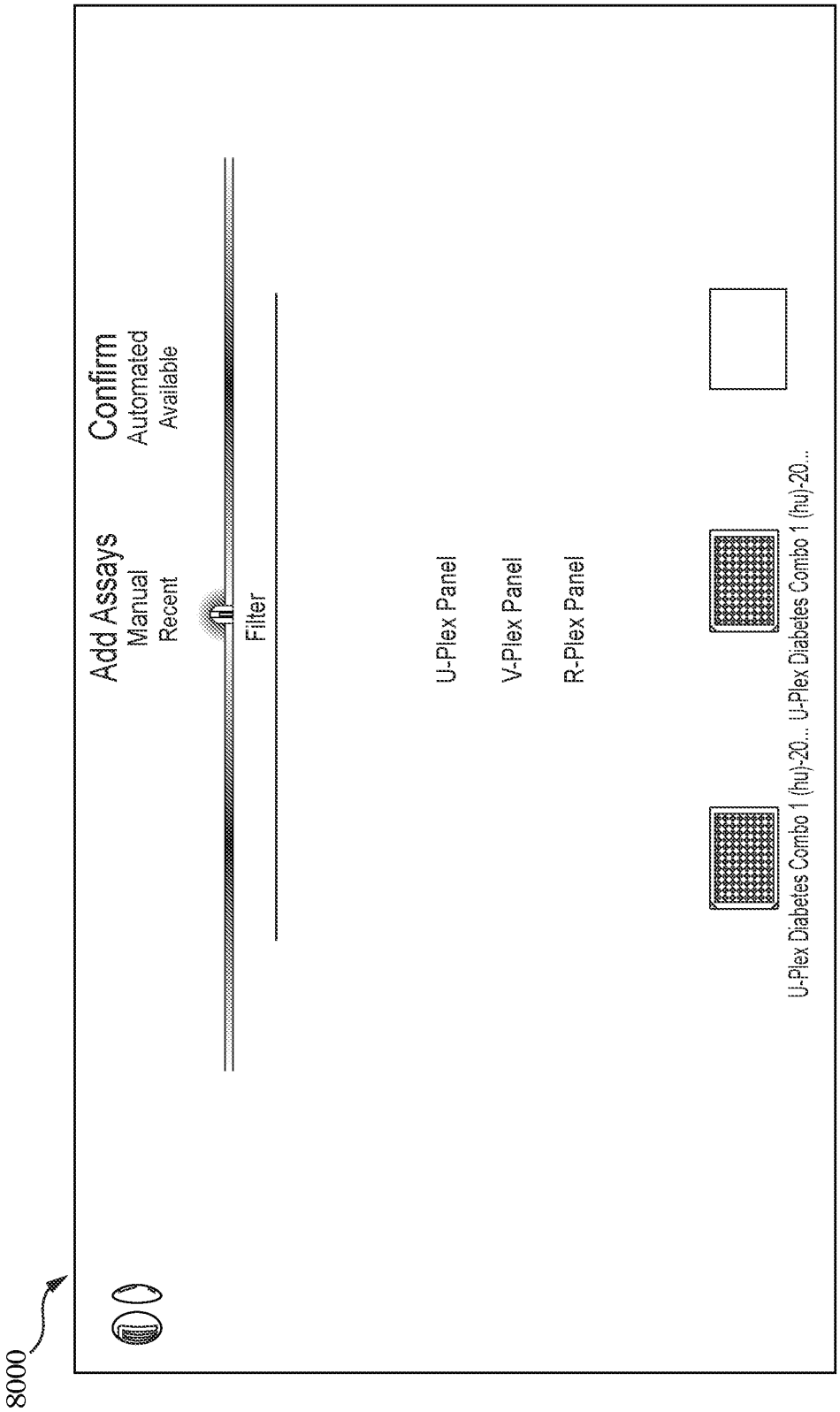
8000
Add Assays
Manual
Recent
Confirm
Automated
Available
Filter
U-Plex Panel
V-Plex Panel
R-Plex Panel
U-Plex Diabetes Combo 1 (hu)-20...
U-Plex Diabetes Combo 1 (hu)-20...

FIG. 90

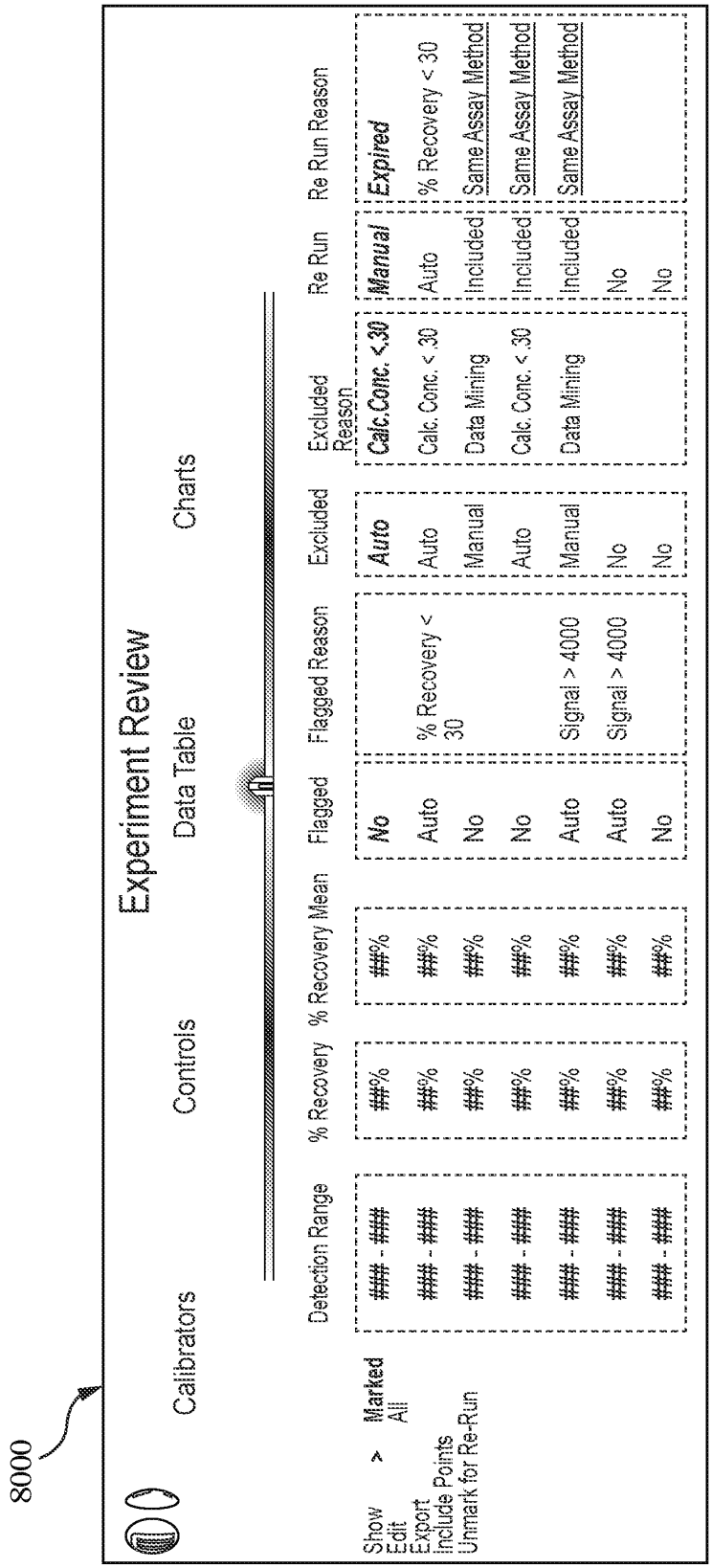
8000
Experiment Review
Calibrators
Controls
Data Table
Charts
Show
Edit
Export
Include Points
Unmark for Re-Run
>
Marked
All
Detection Range
% Recovery
% Recovery Mean
Flagged
Flagged Reason
Excluded
Excluded Reason
Re Run
Re Run Reason
-
##%
No
Auto
Calc.Conc. <.30
Manual
Expired
% Recovery < 30
Calc. Conc. < 30
Data Mining
Included
Same Assay Method
Signal > 4000

FIG. 91

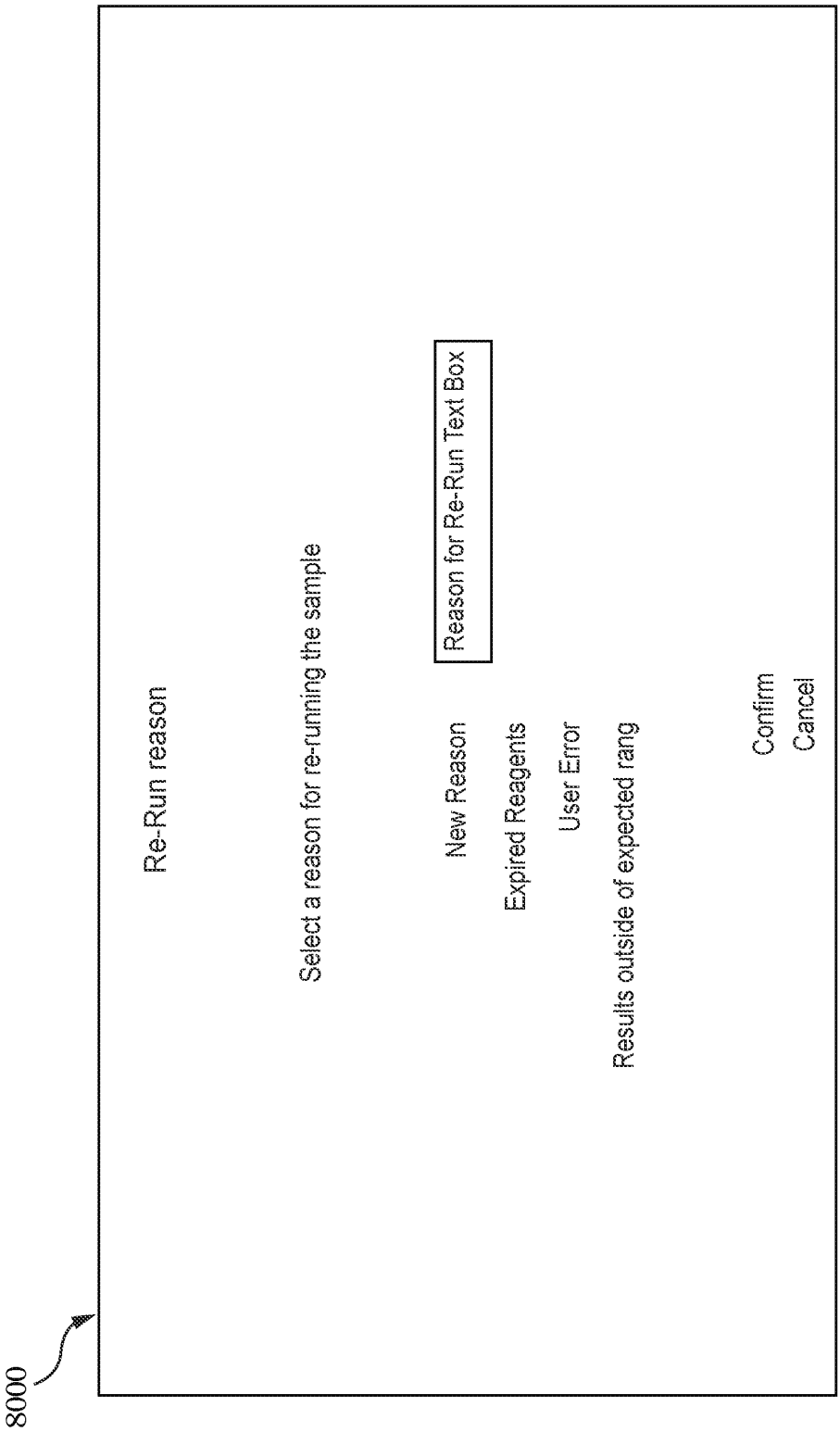
8000
Re-Run reason
Select a reason for re-running the sample
New Reason
Reason for Re-Run Text Box
Expired Reagents
User Error
Results outside of expected rang
Confirm
Cancel

FIG. 92

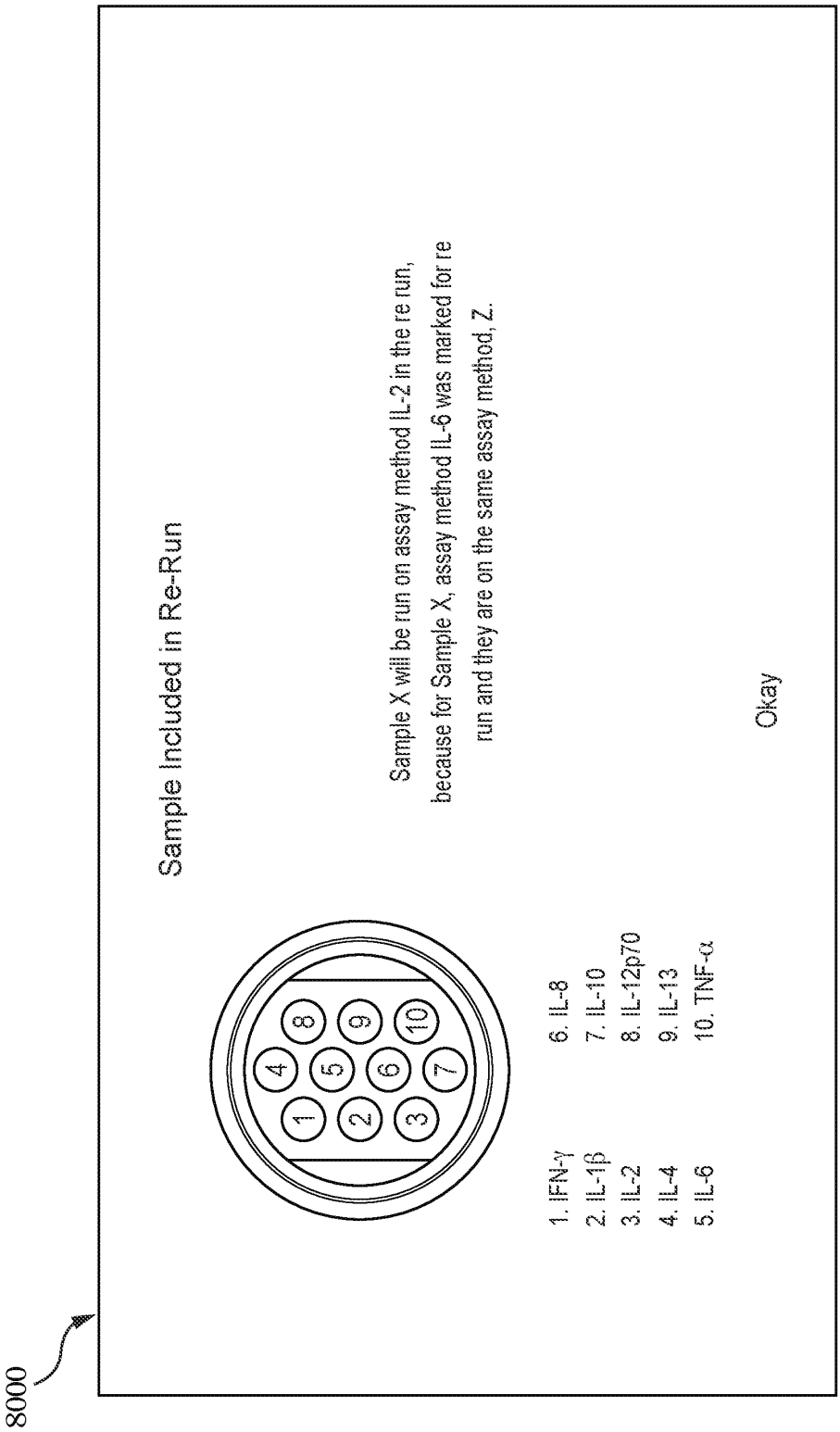
8000
Sample Included in Re-Run
1
2
3
4
5
6
7
8
9
10
1. IFN-γ
2. IL-1β
3. IL-2
4. IL-4
5. IL-6
6. IL-8
7. IL-10
8. IL-12p70
9. IL-13
10. TNF-α
Sample X will be run on assay method IL-2 in the re run, because for Sample X, assay method IL-6 was marked for re run and they are on the same assay method, Z.
Okay

FIG. 93

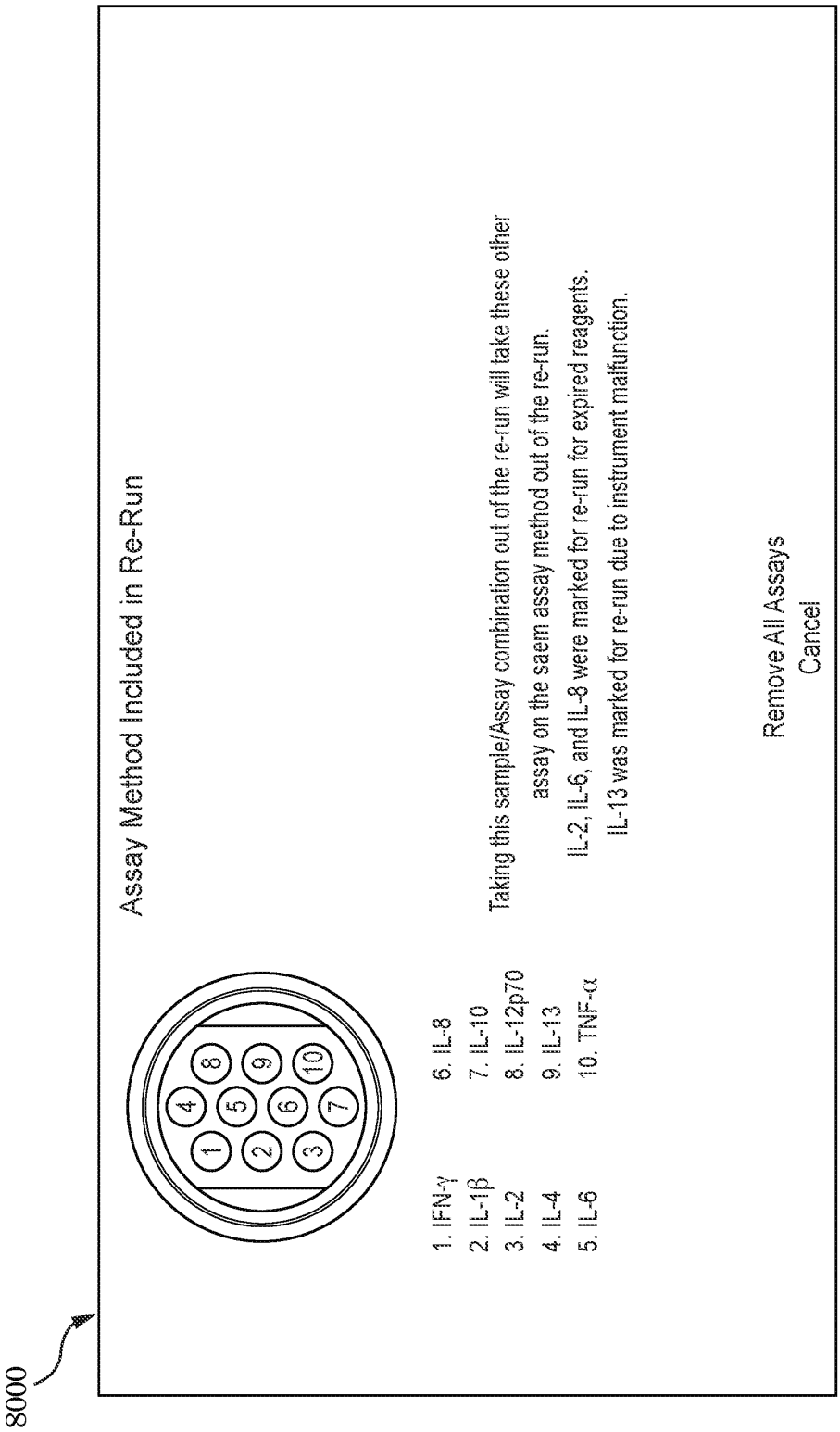
8000
Assay Method Included in Re-Run
1
2
3
4
5
6
7
8
9
10
1. IFN-γ
2. IL-1β
3. IL-2
4. IL-4
5. IL-6
6. IL-8
7. IL-10
8. IL-12p70
9. IL-13
10. TNF-α
Taking this sample/Assay combination out of the re-run will take these other assay on the saem assay method out of the re-run.
IL-2, IL-6, and IL-8 were marked for re-run for expired reagents.
IL-13 was marked for re-run due to instrument malfunction.
Remove All Assays
Cancel

FIG. 94

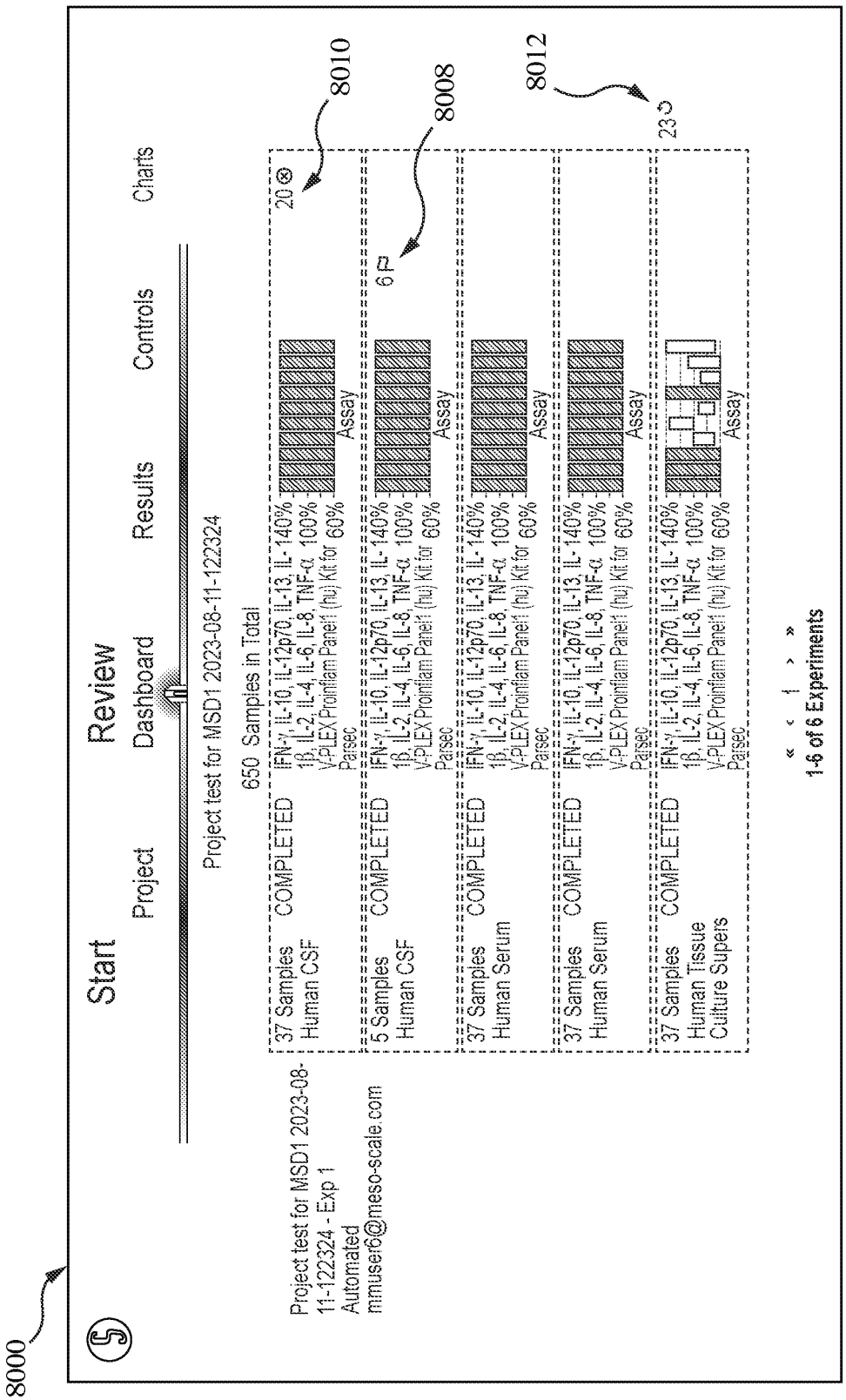
8000
Start
Project
Review
Dashboard
Results
Controls
Charts
Project test for MSD1 2023-08-11-122324
650 Samples in Total
Project test for MSD1 2023-08-11-122324 - Exp 1
Automated
mmuser6@meso-scale.com
37 Samples
Human CSF
COMPLETED
IFN-γ, IL-10, IL-12p70, IL-13, IL-140%
1β, IL-2, IL-4, IL-6, IL-8, TNF-α 100%
V-PLEX Proinflam Panel1 (hu) Kit for 60%
Parsec
Assay
8010
20
5 Samples
Human CSF
COMPLETED
IFN-γ, IL-10, IL-12p70, IL-13, IL-140%
1β, IL-2, IL-4, IL-6, IL-8, TNF-α 100%
V-PLEX Proinflam Panel1 (hu) Kit for 60%
Parsec
Assay
8008
6
37 Samples
Human Serum
COMPLETED
IFN-γ, IL-10, IL-12p70, IL-13, IL-140%
1β, IL-2, IL-4, IL-6, IL-8, TNF-α 100%
V-PLEX Proinflam Panel1 (hu) Kit for 60%
Parsec
Assay
37 Samples
Human Serum
COMPLETED
IFN-γ, IL-10, IL-12p70, IL-13, IL-140%
1β, IL-2, IL-4, IL-6, IL-8, TNF-α 100%
V-PLEX Proinflam Panel1 (hu) Kit for 60%
Parsec
Assay
8012
23
37 Samples
Human Tissue
Culture Supers
COMPLETED
IFN-γ, IL-10, IL-12p70, IL-13, IL-140%
1β, IL-2, IL-4, IL-6, IL-8, TNF-α 100%
V-PLEX Proinflam Panel1 (hu) Kit for 60%
Parsec
Assay
« ‹ 1 › »
1-6 of 6 Experiments

FIG. 95

8000

Marked for Rerun

Search Keyword (23 results)

Plate	Barcode	Sample Set	Sample Index	Sample Name	Sample Type	Assay	Well	Spot	Dilution	Conc.	Conc. Unit
Plate_1	2BJ1IAS306	StandardLayout		Cal001	Calibrator	IFN-γ	A02	1			
Plate_1	2BJ1IAS306	StandardLayout		Cal001	Calibrator	IL-1β	A02	2			
Plate_1	2BJ1IAS306	StandardLayout		Cal001	Calibrator	IL-2	A02	3			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IFN-γ	B02	1			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-1β	B02	2			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-2	B02	3			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-4	B02	4			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-6	B02	5			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-8	B02	6			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-10	B02	7			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-12p70	B02	8			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-13	B02	9			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	TNF-α	B02	10			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IFN-γ	B01	1			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-1β	B01	2			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-2	B01	3			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-4	B01	4			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-6	B01	5			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-8	B01	6			
Plate_1	2BJ1IAS306	StandardLayout		Cal002	Calibrator	IL-10	B01	7			

FIG. 96

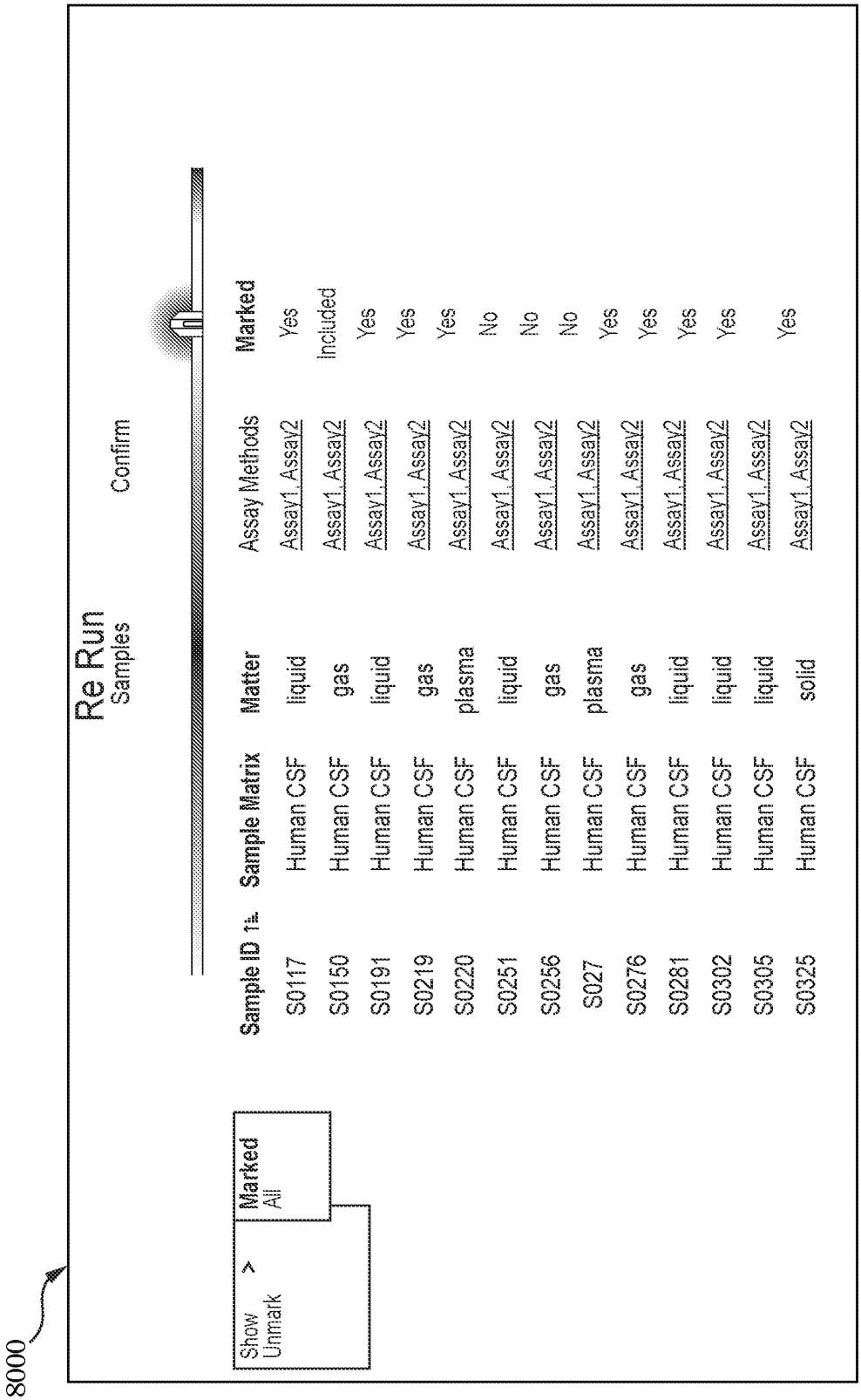
8000
Re Run
Samples
Confirm
Show
Unmark
Marked
All
Sample ID
Sample Matrix
Matter
Assay Methods
Marked
S0117 Human CSF liquid Assay1,Assay2 Yes
S0150 Human CSF gas Assay1,Assay2 Included
S0191 Human CSF liquid Assay1,Assay2 Yes
S0219 Human CSF gas Assay1,Assay2 Yes
S0220 Human CSF plasma Assay1,Assay2 Yes
S0251 Human CSF liquid Assay1,Assay2 No
S0256 Human CSF gas Assay1,Assay2 No
S027 Human CSF plasma Assay1,Assay2 No
S0276 Human CSF gas Assay1,Assay2 Yes
S0281 Human CSF liquid Assay1,Assay2 Yes
S0302 Human CSF liquid Assay1,Assay2 Yes
S0305 Human CSF liquid Assay1,Assay2 Yes
S0325 Human CSF solid Assay1,Assay2 Yes

FIG. 97

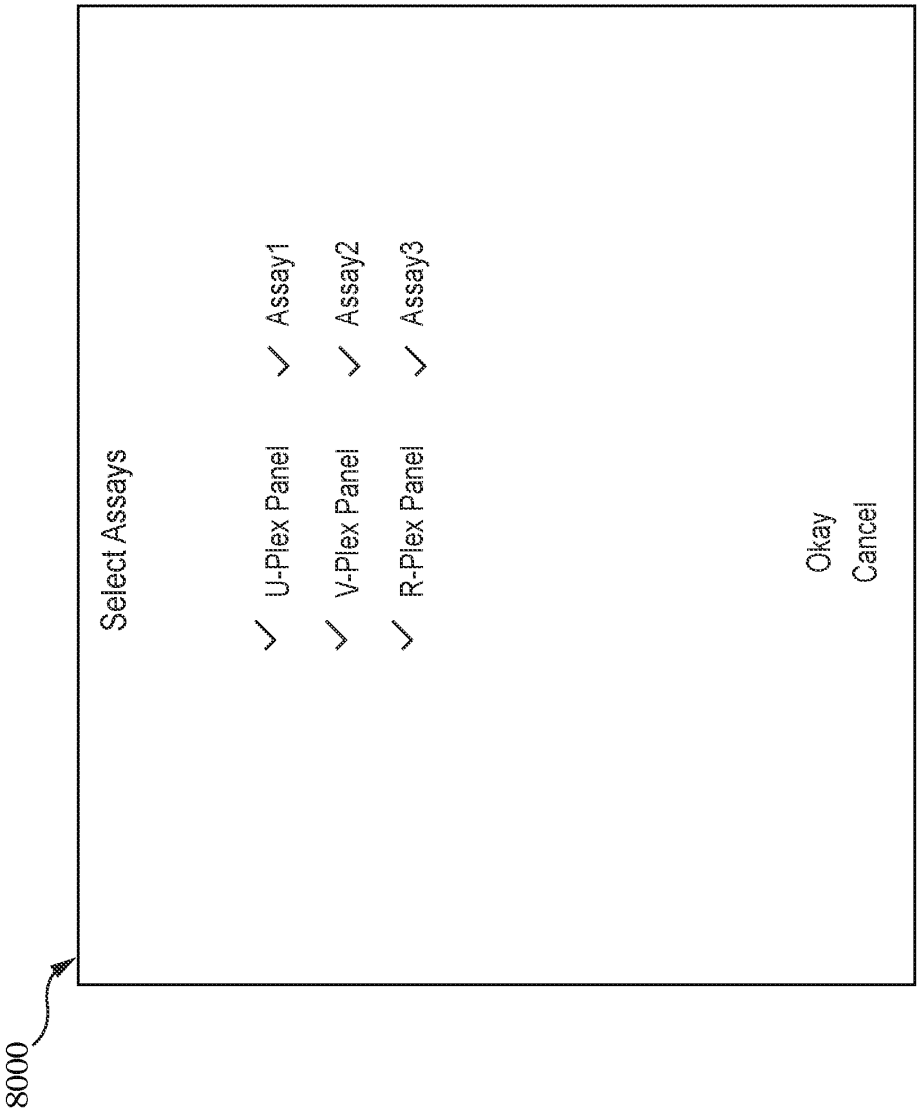
8000
Select Assays
U-Plex Panel
V-Plex Panel
R-Plex Panel
Assay1
Assay2
Assay3
Okay
Cancel

FIG. 98

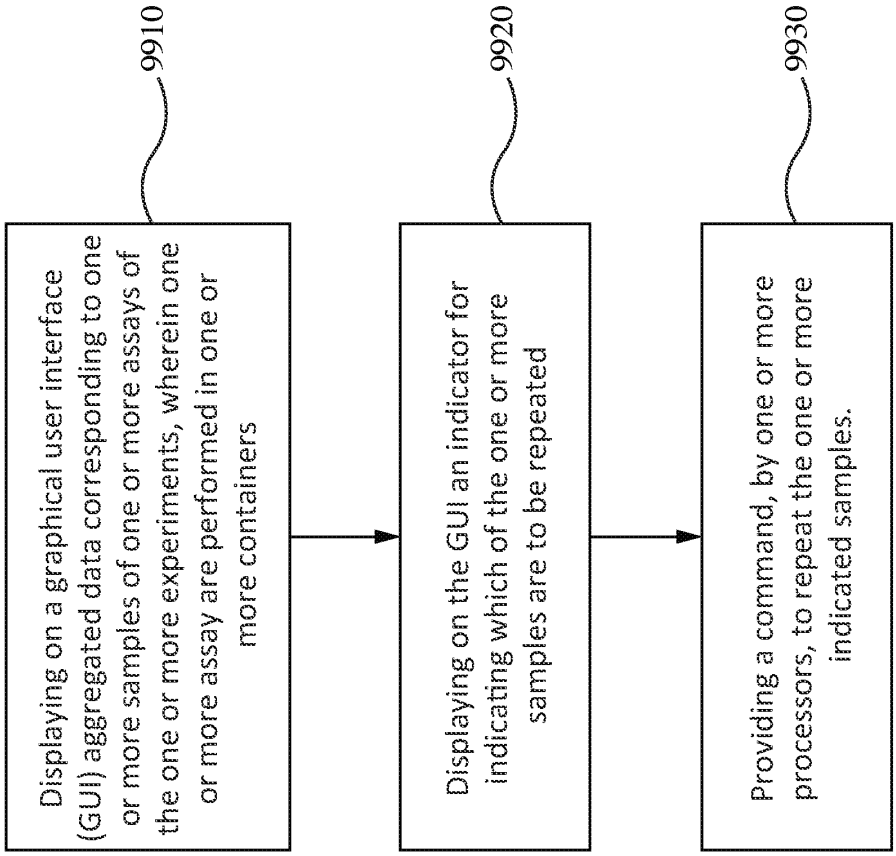
9910
Displaying on a graphical user interface (GUI) aggregated data corresponding to one or more samples of one or more assays of the one or more experiments, wherein one or more assay are performed in one or more containers
9920
Displaying on the GUI an indicator for indicating which of the one or more samples are to be repeated
9930
Providing a command, by one or more processors, to repeat the one or more indicated samples.

FIG. 99