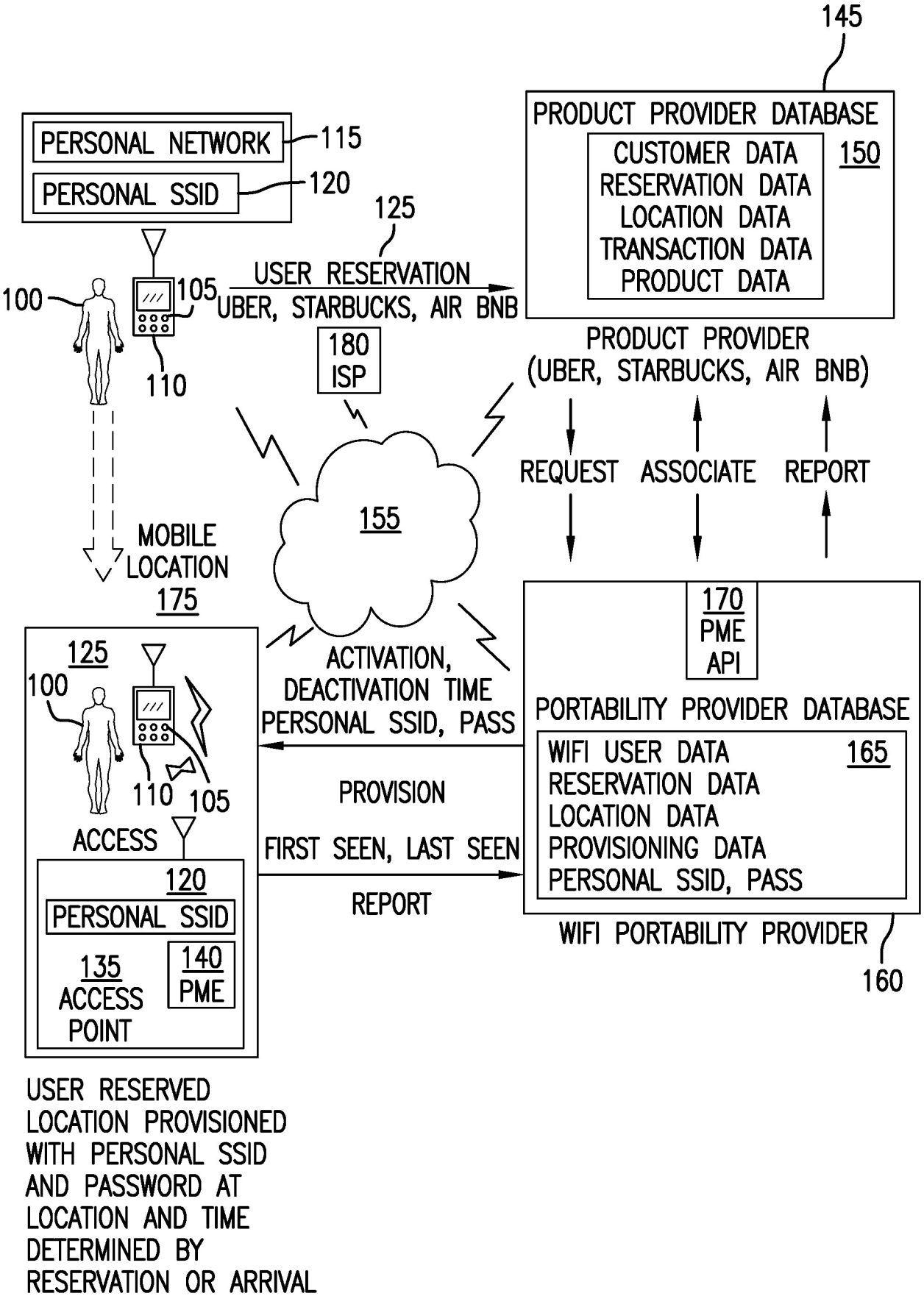
145
PRODUCT PROVIDER DATABASE
CUSTOMER DATA
RESERVATION DATA
LOCATION DATA
TRANSACTION DATA
PRODUCT DATA
150
PERSONAL NETWORK
115
PERSONAL SSID
120
125
USER RESERVATION
UBER, STARBUCKS, AIR BNB
100
105
110
180
ISP
PRODUCT PROVIDER
(UBER, STARBUCKS, AIR BNB)
REQUEST
ASSOCIATE
REPORT
155
MOBILE
LOCATION
175
170
PME
API
125
100
ACTIVATION,
DEACTIVATION TIME
PERSONAL SSID, PASS
PORTABILITY PROVIDER DATABASE
WIFI USER DATA
RESERVATION DATA
LOCATION DATA
PROVISIONING DATA
PERSONAL SSID, PASS
165
110
105
PROVISION
ACCESS
FIRST SEEN, LAST SEEN
120
PERSONAL SSID
REPORT
135
ACCESS
POINT
140
PME
WIFI PORTABILITY PROVIDER
160
USER RESERVED
LOCATION PROVISIONED
WITH PERSONAL SSID
AND PASSWORD AT
LOCATION AND TIME
DETERMINED BY
RESERVATION OR ARRIVAL

FIG. 1

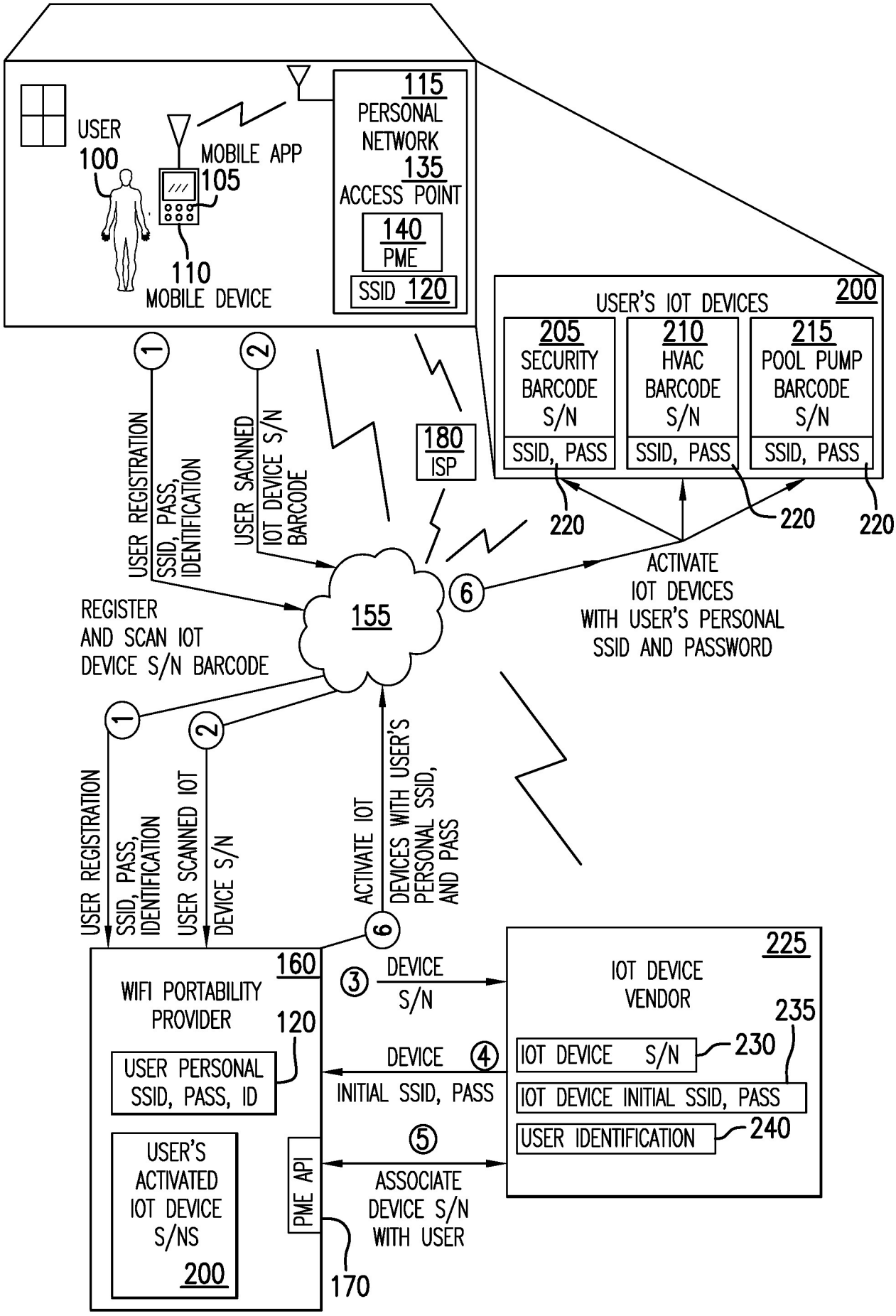
USER
100
MOBILE APP
105
110
MOBILE DEVICE
115
PERSONAL NETWORK
135
ACCESS POINT
140
PME
SSID 120
USER'S IOT DEVICES
200
205
SECURITY BARCODE S/N
SSID, PASS
210
HVAC BARCODE S/N
SSID, PASS
215
POOL PUMP BARCODE S/N
SSID, PASS
220
220
220
180
ISP
1
USER REGISTRATION SSID, PASS, IDENTIFICATION
2
USER SACNNED IOT DEVICE S/N BARCODE
REGISTER AND SCAN IOT DEVICE S/N BARCODE
155
6
ACTIVATE IOT DEVICES WITH USER'S PERSONAL SSID AND PASSWORD
1
USER REGISTRATION SSID, PASS, IDENTIFICATION
2
USER SCANNED IOT DEVICE S/N
ACTIVATE IOT DEVICES WITH USER'S PERSONAL SSID, AND PASS
6
160
WIFI PORTABILITY PROVIDER
120
USER PERSONAL SSID, PASS, ID
USER'S ACTIVATED IOT DEVICE S/NS
200
PME API
170
3
DEVICE S/N
4
DEVICE INITIAL SSID, PASS
5
ASSOCIATE DEVICE S/N WITH USER
225
IOT DEVICE VENDOR
235
IOT DEVICE S/N
230
IOT DEVICE INITIAL SSID, PASS
USER IDENTIFICATION
240

FIG.2

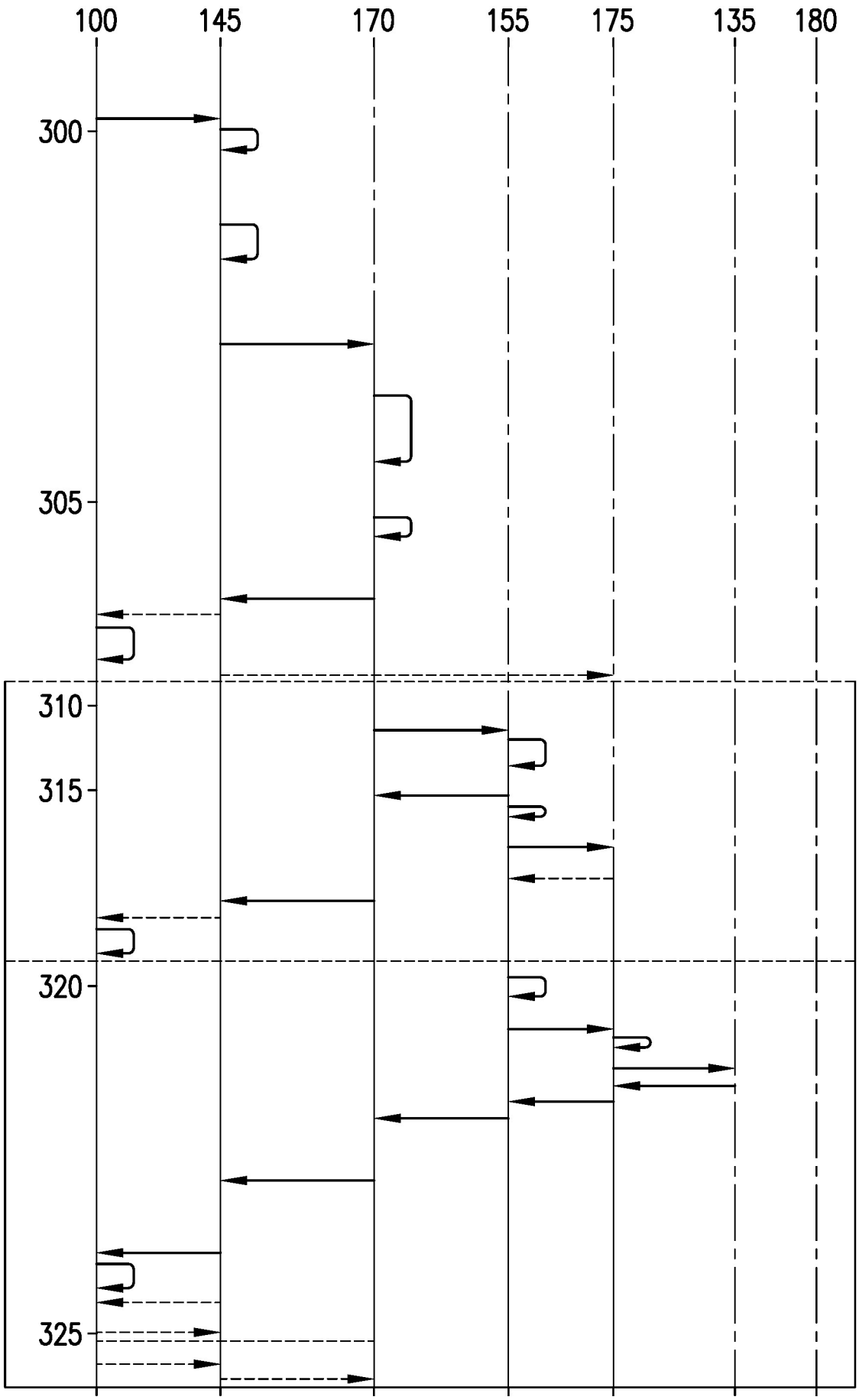

FIG.3A

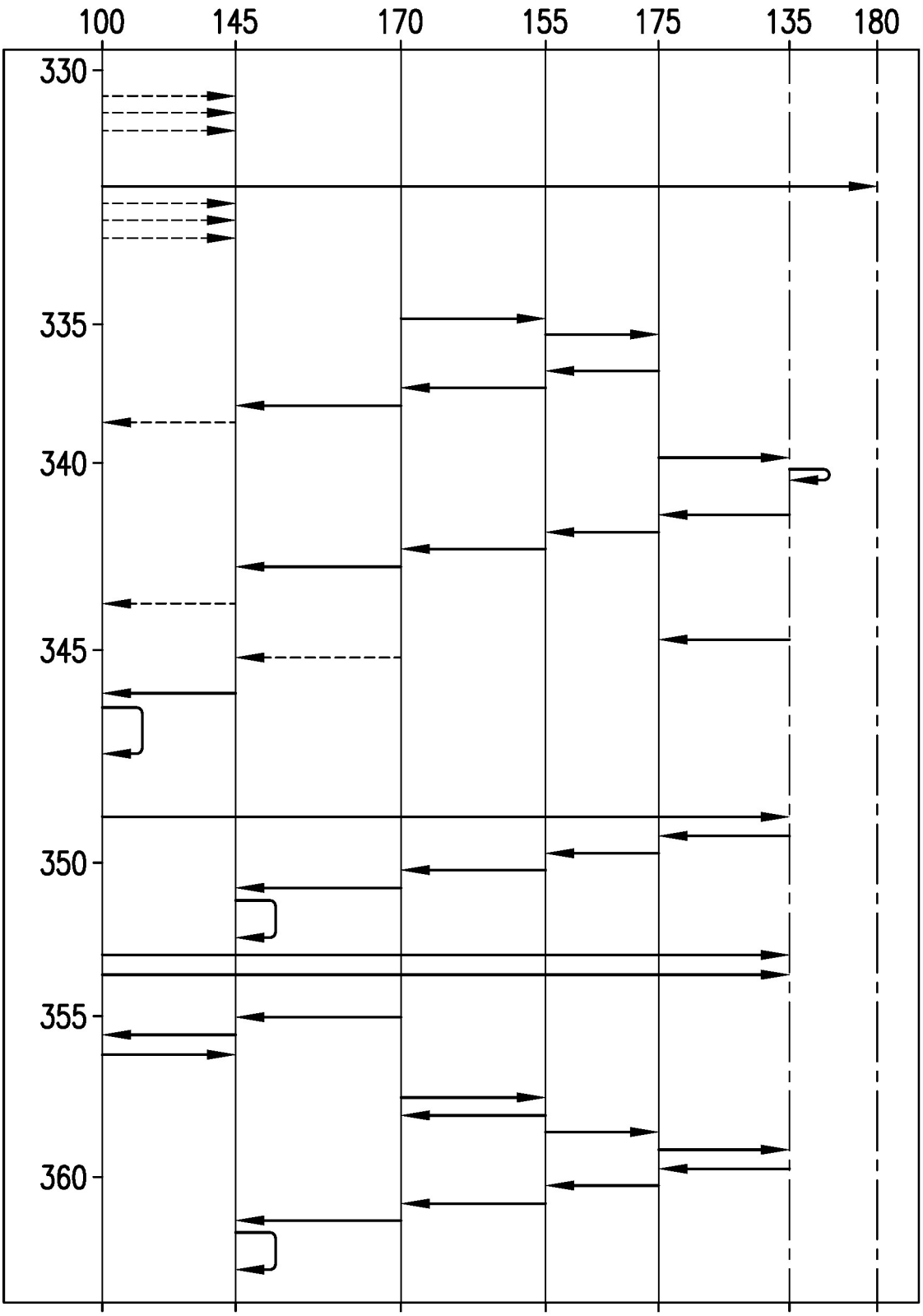

FIG.3B

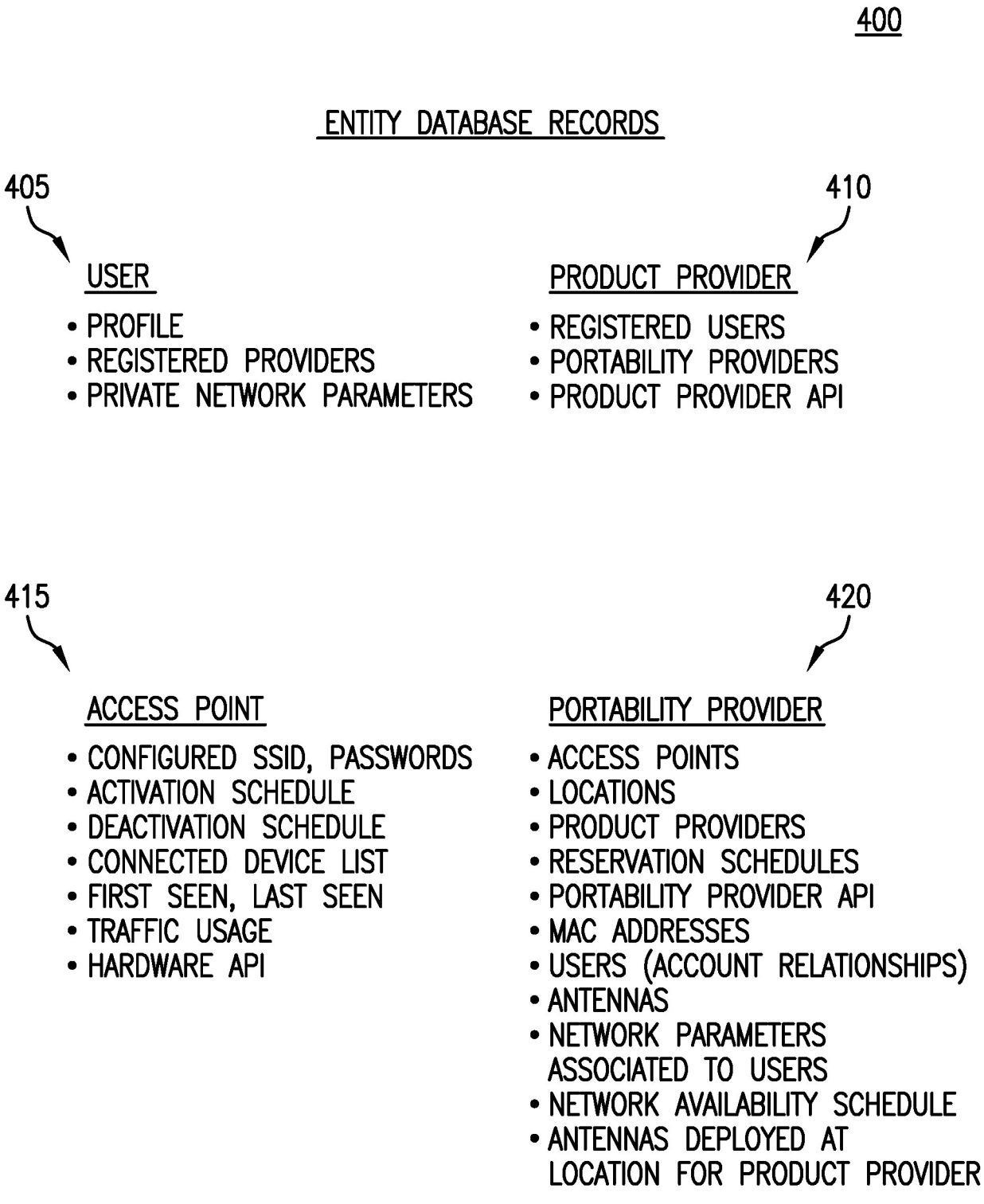
400
ENTITY DATABASE RECORDS
405
USER
• PROFILE
• REGISTERED PROVIDERS
• PRIVATE NETWORK PARAMETERS
410
PRODUCT PROVIDER
• REGISTERED USERS
• PORTABILITY PROVIDERS
• PRODUCT PROVIDER API
415
ACCESS POINT
• CONFIGURED SSID, PASSWORDS
• ACTIVATION SCHEDULE
• DEACTIVATION SCHEDULE
• CONNECTED DEVICE LIST
• FIRST SEEN, LAST SEEN
• TRAFFIC USAGE
• HARDWARE API
420
PORTABILITY PROVIDER
• ACCESS POINTS
• LOCATIONS
• PRODUCT PROVIDERS
• RESERVATION SCHEDULES
• PORTABILITY PROVIDER API
• MAC ADDRESSES
• USERS (ACCOUNT RELATIONSHIPS)
• ANTENNAS
• NETWORK PARAMETERS ASSOCIATED TO USERS
• NETWORK AVAILABILITY SCHEDULE
• ANTENNAS DEPLOYED AT LOCATION FOR PRODUCT PROVIDER

FIG.4

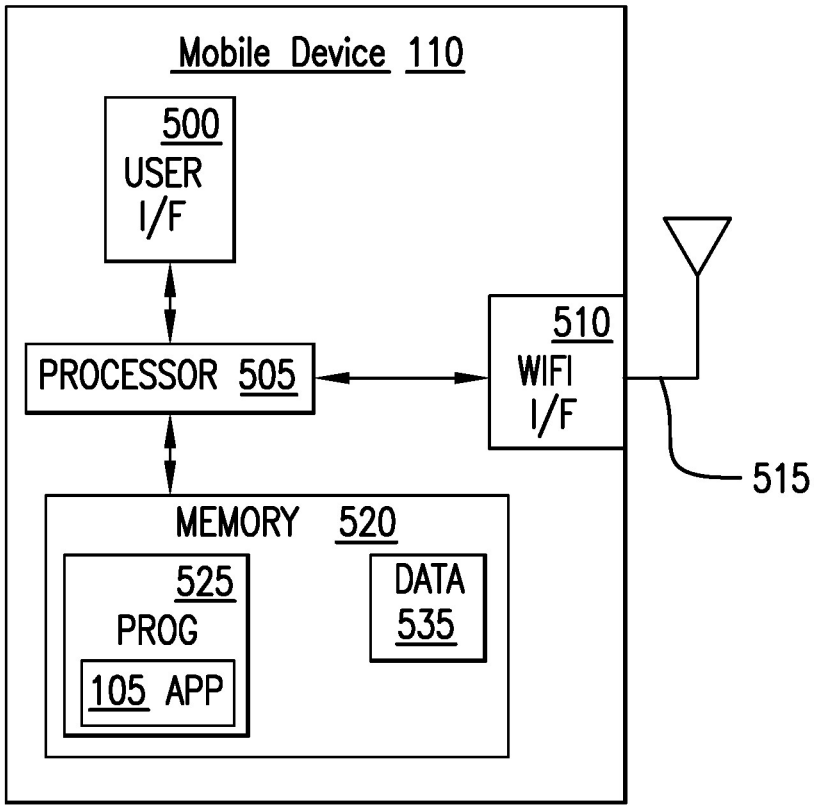
Mobile Device 110
500
USER
I/F
PROCESSOR 505
510
WIFI
I/F
515
MEMORY 520
525
PROG
105 APP
DATA
535

FIG.5A

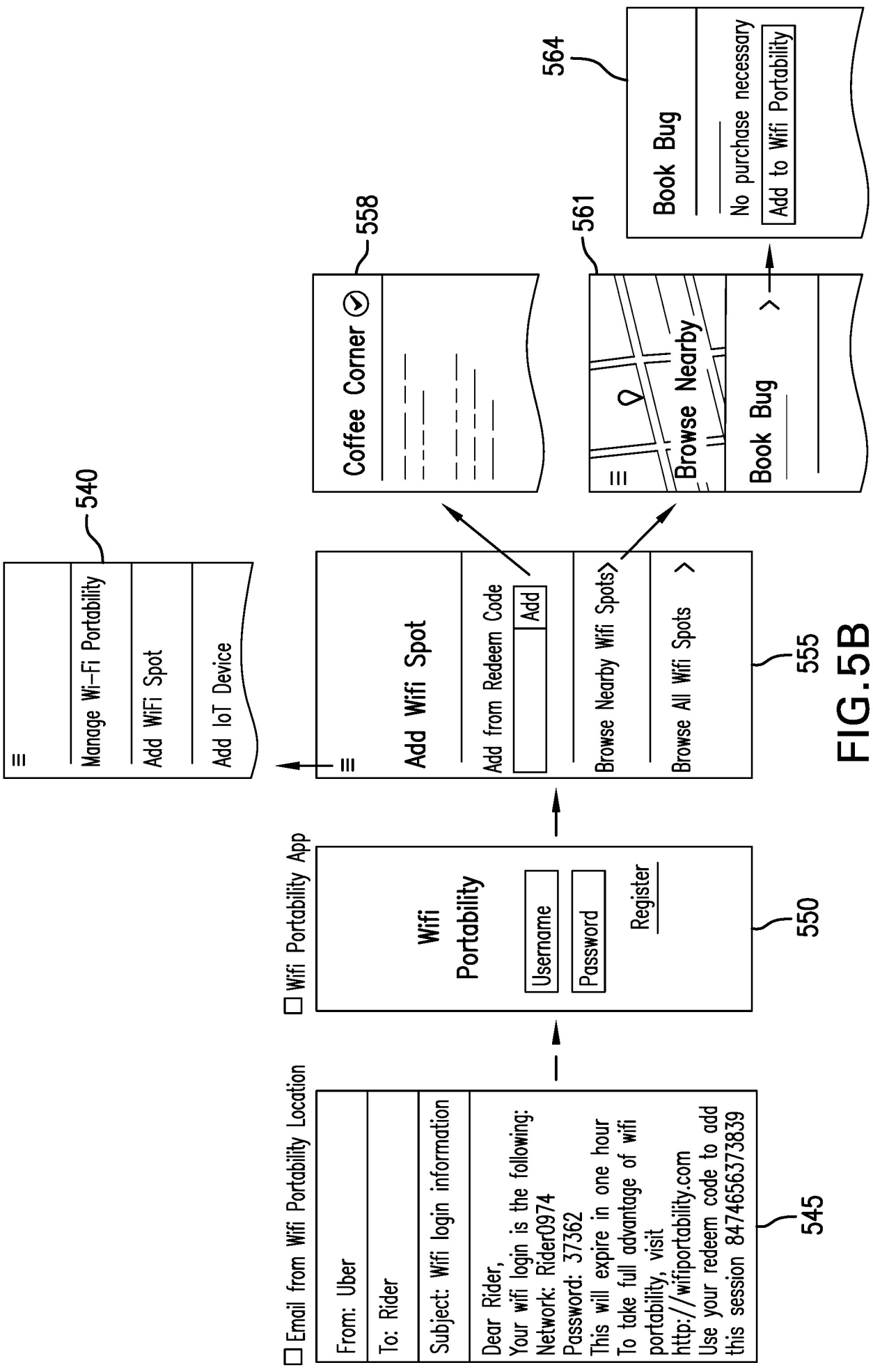
Email from Wifi Portability Location
From: Uber
To: Rider
Subject: Wifi login information
Dear Rider,
Your wifi login is the following:
Network: Rider0974
Password: 37362
This will expire in one hour
To take full advantage of wifi portability, visit http://wifiportability.com
Use your redeem code to add this session 847465637839
545
Wifi Portability App
Wifi Portability
Username
Password
Register
550
Add Wifi Spot
Add from Redeem Code
Add
Browse Nearby Wifi Spots
Browse All Wifi Spots
555
Manage Wi-Fi Portability
Add WiFi Spot
Add IoT Device
540
Coffee Corner
558
Browse Nearby
Book Bug
561
Book Bug
No purchase necessary
Add to Wifi Portability
564

FIG.5B

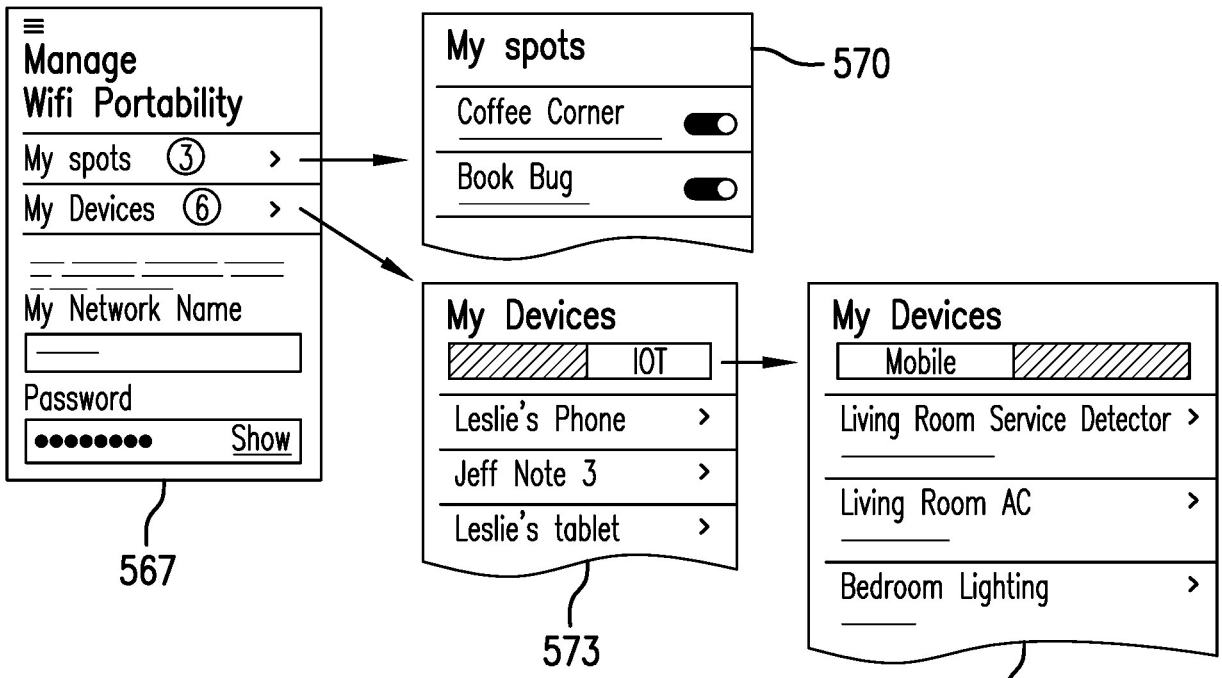
Manage
Wifi Portability
My spots 3
My Devices 6
My Network Name
Password
Show
567
My spots
Coffee Corner
Book Bug
570
My Devices
IOT
Leslie's Phone
Jeff Note 3
Leslie's tablet
573
My Devices
Mobile
Living Room Service Detector
Living Room AC
Bedroom Lighting
577

FIG.5C

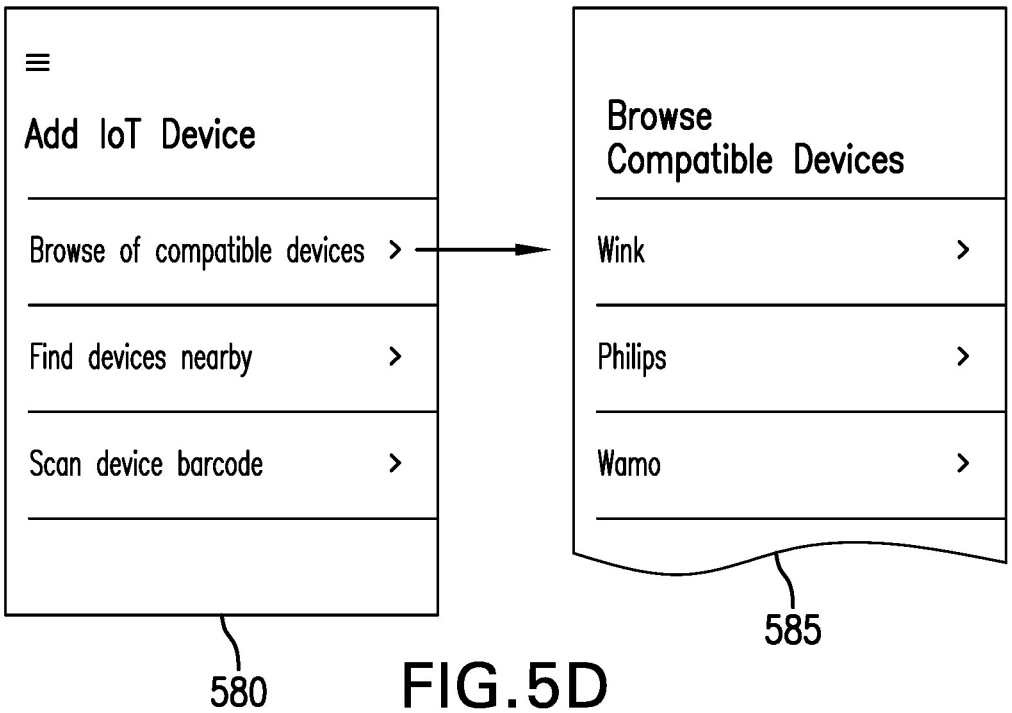
Add IoT Device
Browse of compatible devices
Find devices nearby
Scan device barcode
580
Browse
Compatible Devices
Wink
Philips
Wamo
585

FIG.5D

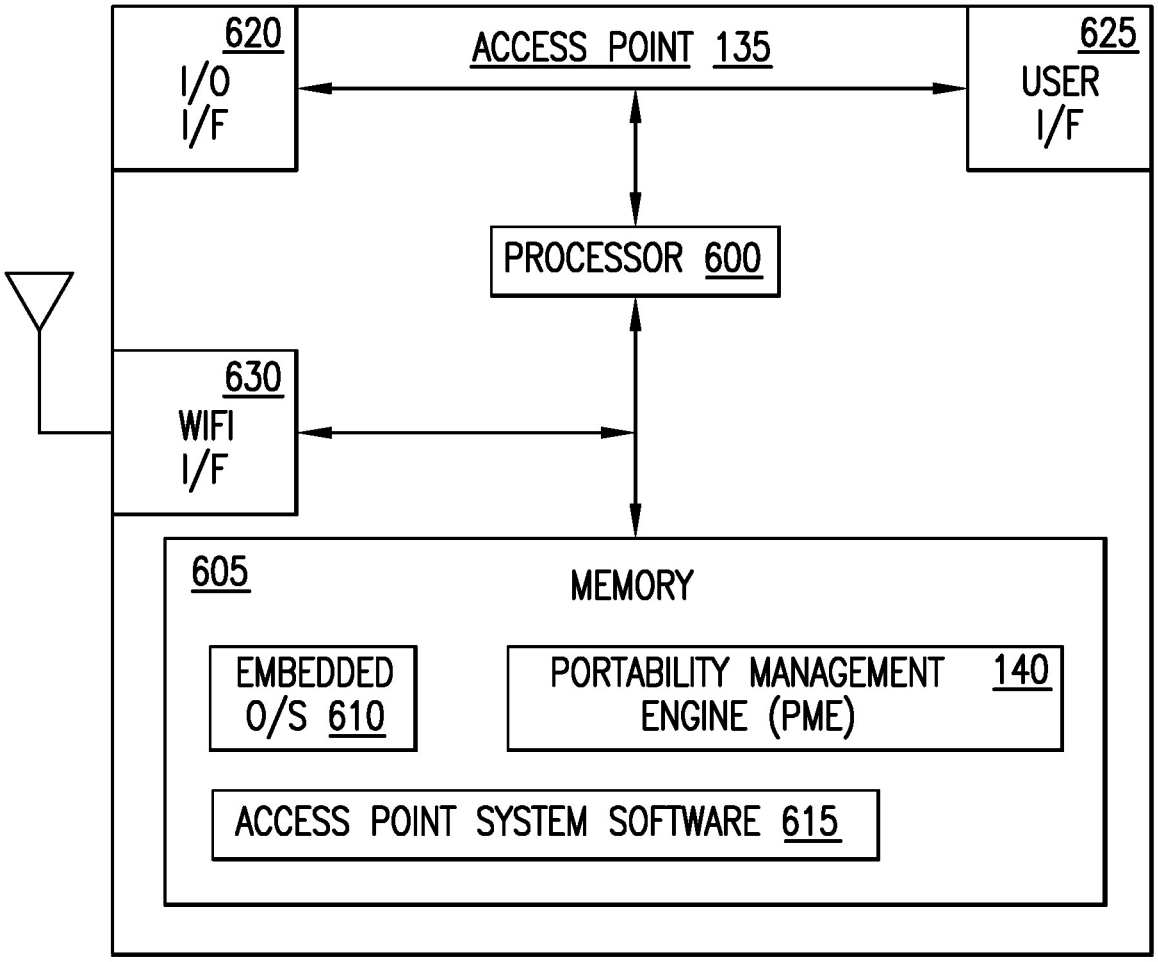
620
I/O
I/F
ACCESS POINT 135
625
USER
I/F
PROCESSOR 600
630
WIFI
I/F
605
MEMORY
EMBEDDED
O/S 610
PORTABILITY MANAGEMENT 140
ENGINE (PME)
ACCESS POINT SYSTEM SOFTWARE 615

FIG.6

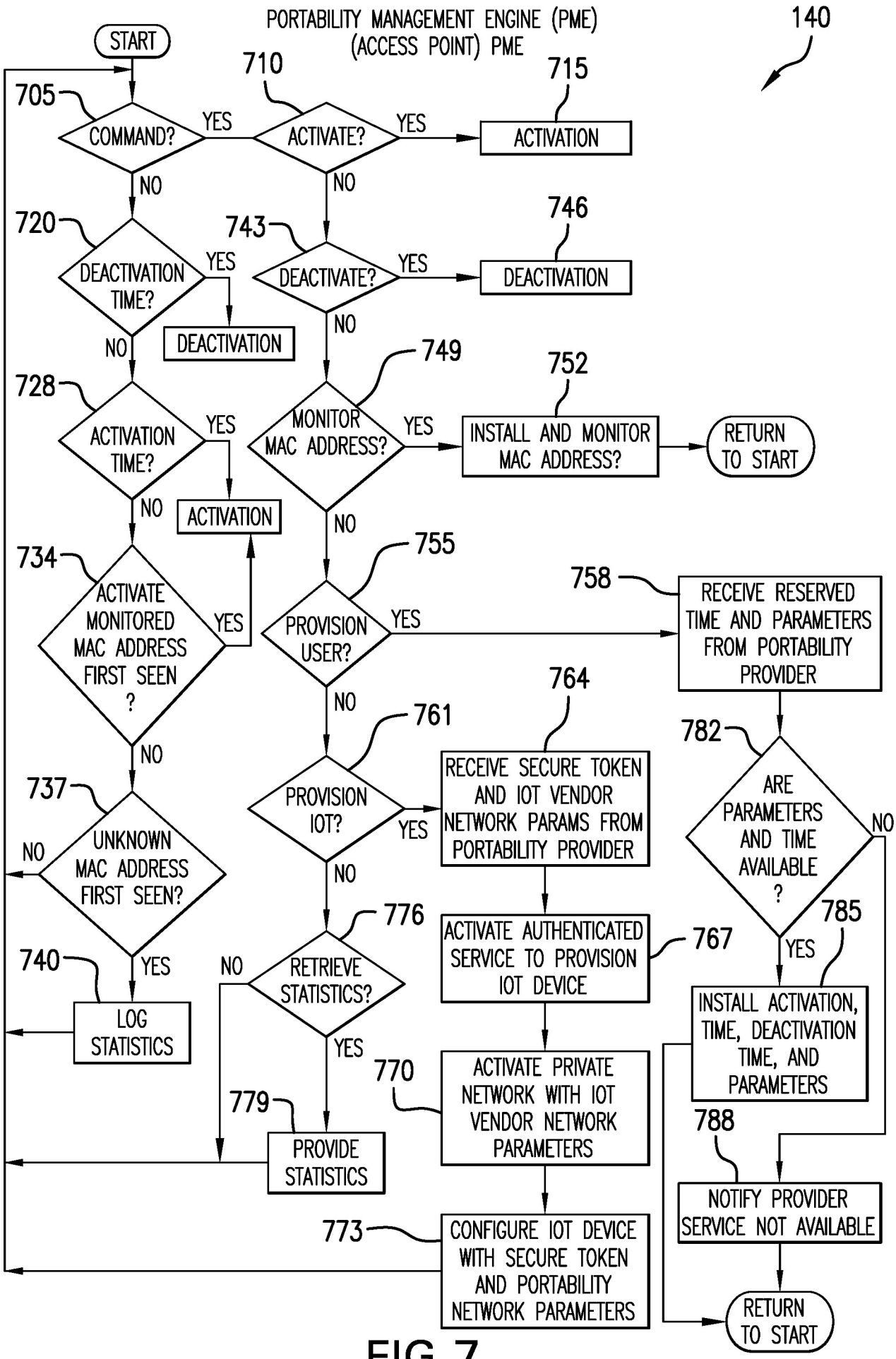
PORTABILITY MANAGEMENT ENGINE (PME)
(ACCESS POINT) PME
140
START
705
COMMAND?
YES
NO
710
ACTIVATE?
YES
715
ACTIVATION
NO
720
DEACTIVATION TIME?
YES
DEACTIVATION
NO
743
DEACTIVATE?
YES
746
DEACTIVATION
NO
728
ACTIVATION TIME?
YES
ACTIVATION
NO
749
MONITOR MAC ADDRESS?
YES
752
INSTALL AND MONITOR MAC ADDRESS?
RETURN TO START
NO
734
ACTIVATE MONITORED MAC ADDRESS FIRST SEEN ?
YES
NO
755
PROVISION USER?
YES
758
RECEIVE RESERVED TIME AND PARAMETERS FROM PORTABILITY PROVIDER
NO
761
PROVISION IOT?
YES
764
RECEIVE SECURE TOKEN AND IOT VENDOR NETWORK PARAMS FROM PORTABILITY PROVIDER
NO
737
UNKNOWN MAC ADDRESS FIRST SEEN?
NO
YES
740
LOG STATISTICS
776
RETRIEVE STATISTICS?
NO
YES
779
PROVIDE STATISTICS
767
ACTIVATE AUTHENTICATED SERVICE TO PROVISION IOT DEVICE
770
ACTIVATE PRIVATE NETWORK WITH IOT VENDOR NETWORK PARAMETERS
773
CONFIGURE IOT DEVICE WITH SECURE TOKEN AND PORTABILITY NETWORK PARAMETERS
782
ARE PARAMETERS AND TIME AVAILABLE ?
NO
YES
785
INSTALL ACTIVATION, TIME, DEACTIVATION TIME, AND PARAMETERS
788
NOTIFY PROVIDER SERVICE NOT AVAILABLE
RETURN TO START

FIG.7

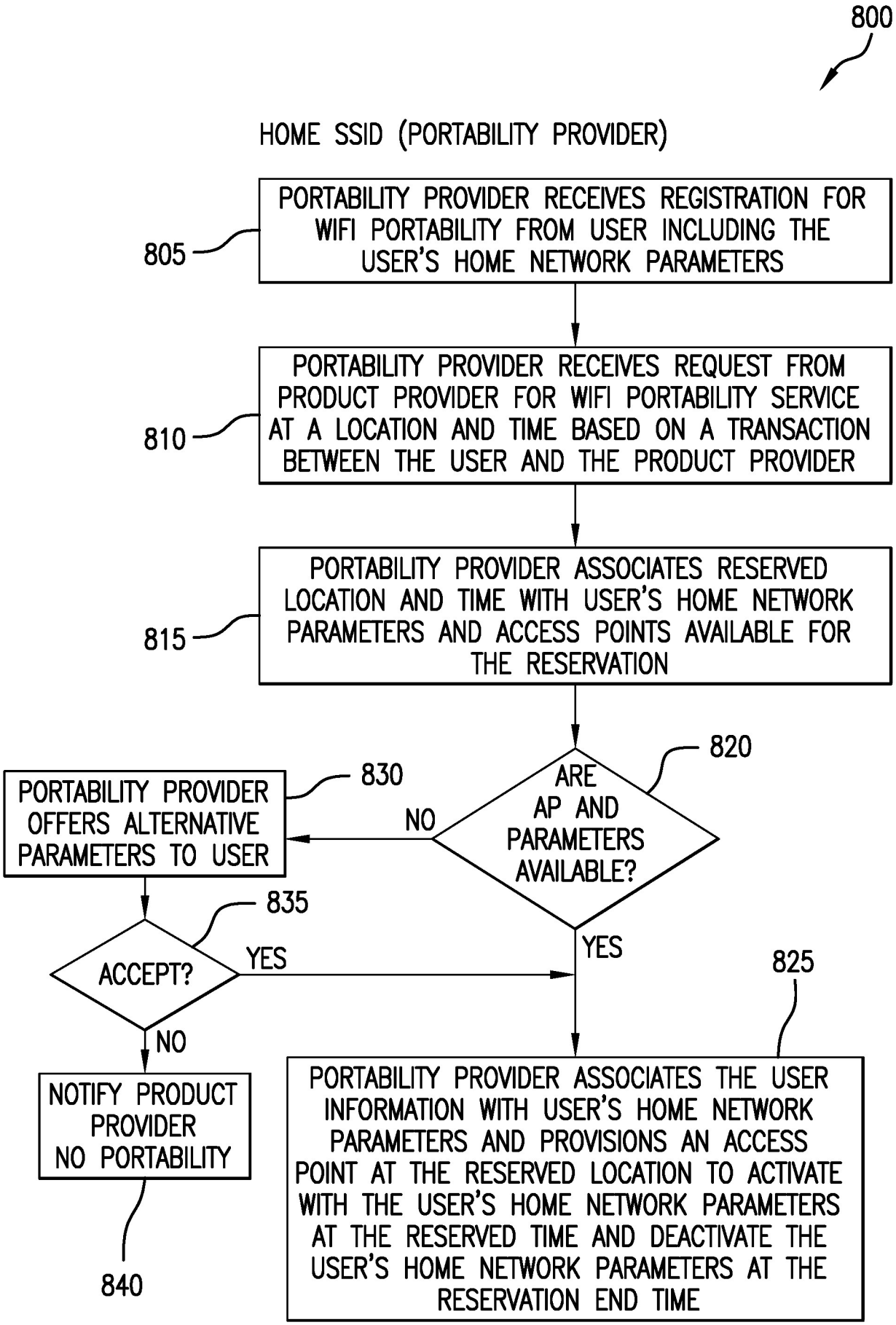
800
HOME SSID (PORTABILITY PROVIDER)
805
PORTABILITY PROVIDER RECEIVES REGISTRATION FOR WIFI PORTABILITY FROM USER INCLUDING THE USER'S HOME NETWORK PARAMETERS
810
PORTABILITY PROVIDER RECEIVES REQUEST FROM PRODUCT PROVIDER FOR WIFI PORTABILITY SERVICE AT A LOCATION AND TIME BASED ON A TRANSACTION BETWEEN THE USER AND THE PRODUCT PROVIDER
815
PORTABILITY PROVIDER ASSOCIATES RESERVED LOCATION AND TIME WITH USER'S HOME NETWORK PARAMETERS AND ACCESS POINTS AVAILABLE FOR THE RESERVATION
820
ARE AP AND PARAMETERS AVAILABLE?
NO
830
PORTABILITY PROVIDER OFFERS ALTERNATIVE PARAMETERS TO USER
835
ACCEPT?
YES
NO
YES
825
PORTABILITY PROVIDER ASSOCIATES THE USER INFORMATION WITH USER'S HOME NETWORK PARAMETERS AND PROVISIONS AN ACCESS POINT AT THE RESERVED LOCATION TO ACTIVATE WITH THE USER'S HOME NETWORK PARAMETERS AT THE RESERVED TIME AND DEACTIVATE THE USER'S HOME NETWORK PARAMETERS AT THE RESERVATION END TIME
NOTIFY PRODUCT PROVIDER NO PORTABILITY
840

FIG.8

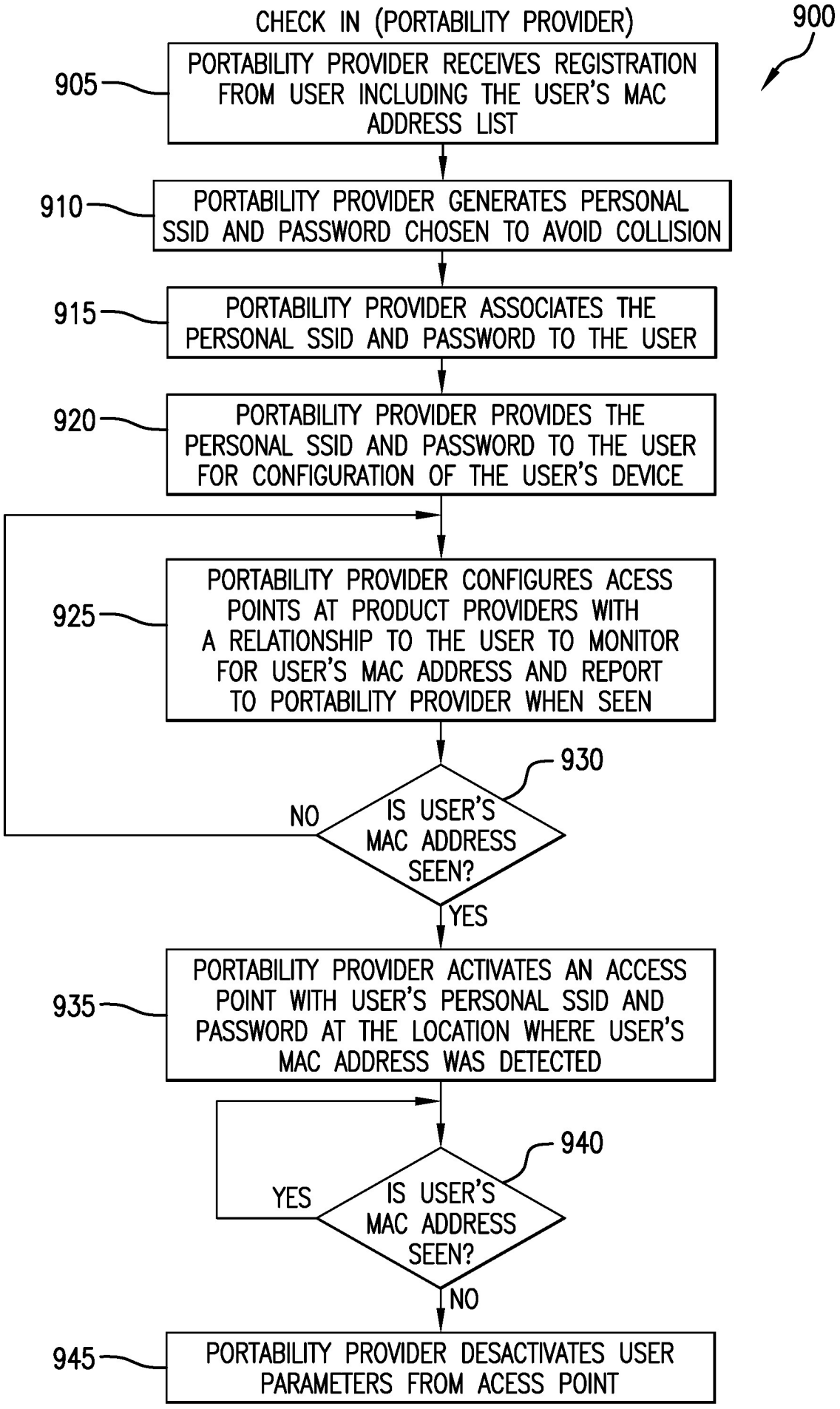
CHECK IN (PORTABILITY PROVIDER)
900
905
PORTABILITY PROVIDER RECEIVES REGISTRATION FROM USER INCLUDING THE USER'S MAC ADDRESS LIST
910
PORTABILITY PROVIDER GENERATES PERSONAL SSID AND PASSWORD CHOSEN TO AVOID COLLISION
915
PORTABILITY PROVIDER ASSOCIATES THE PERSONAL SSID AND PASSWORD TO THE USER
920
PORTABILITY PROVIDER PROVIDES THE PERSONAL SSID AND PASSWORD TO THE USER FOR CONFIGURATION OF THE USER'S DEVICE
925
PORTABILITY PROVIDER CONFIGURES ACESS POINTS AT PRODUCT PROVIDERS WITH A RELATIONSHIP TO THE USER TO MONITOR FOR USER'S MAC ADDRESS AND REPORT TO PORTABILITY PROVIDER WHEN SEEN
930
IS USER'S MAC ADDRESS SEEN?
NO
YES
935
PORTABILITY PROVIDER ACTIVATES AN ACCESS POINT WITH USER'S PERSONAL SSID AND PASSWORD AT THE LOCATION WHERE USER'S MAC ADDRESS WAS DETECTED
940
IS USER'S MAC ADDRESS SEEN?
YES
NO
945
PORTABILITY PROVIDER DESACTIVATES USER PARAMETERS FROM ACESS POINT

FIG.9

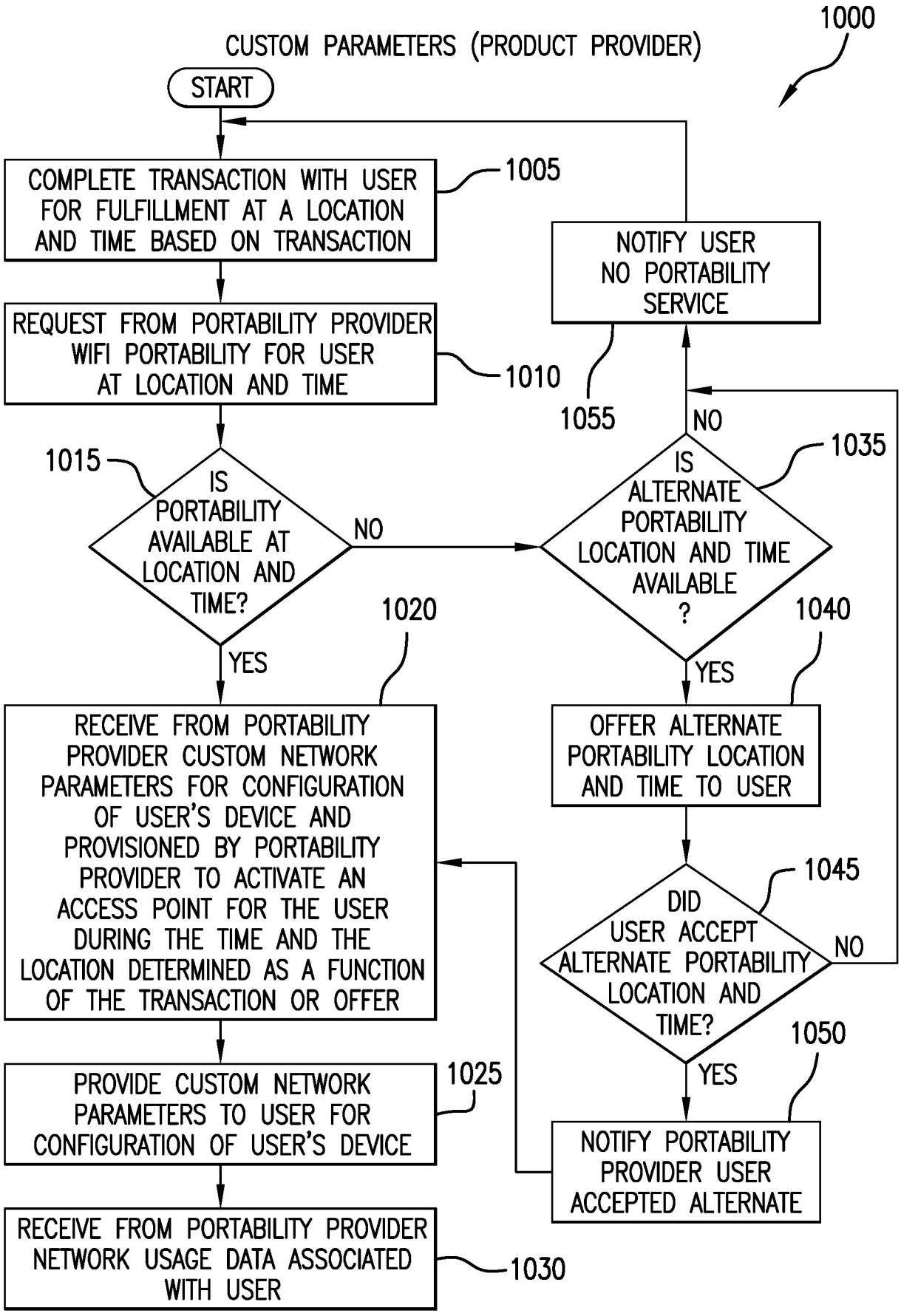
1000
CUSTOM PARAMETERS (PRODUCT PROVIDER)
START
COMPLETE TRANSACTION WITH USER FOR FULFILLMENT AT A LOCATION AND TIME BASED ON TRANSACTION
1005
REQUEST FROM PORTABILITY PROVIDER WIFI PORTABILITY FOR USER AT LOCATION AND TIME
1010
1015
IS PORTABILITY AVAILABLE AT LOCATION AND TIME?
NO
YES
1020
RECEIVE FROM PORTABILITY PROVIDER CUSTOM NETWORK PARAMETERS FOR CONFIGURATION OF USER'S DEVICE AND PROVISIONED BY PORTABILITY PROVIDER TO ACTIVATE AN ACCESS POINT FOR THE USER DURING THE TIME AND THE LOCATION DETERMINED AS A FUNCTION OF THE TRANSACTION OR OFFER
PROVIDE CUSTOM NETWORK PARAMETERS TO USER FOR CONFIGURATION OF USER'S DEVICE
1025
RECEIVE FROM PORTABILITY PROVIDER NETWORK USAGE DATA ASSOCIATED WITH USER
1030
NOTIFY USER NO PORTABILITY SERVICE
1055
NO
IS ALTERNATE PORTABILITY LOCATION AND TIME AVAILABLE ?
1035
YES
1040
OFFER ALTERNATE PORTABILITY LOCATION AND TIME TO USER
DID USER ACCEPT ALTERNATE PORTABILITY LOCATION AND TIME?
1045
NO
YES
1050
NOTIFY PORTABILITY PROVIDER USER ACCEPTED ALTERNATE

FIG.10

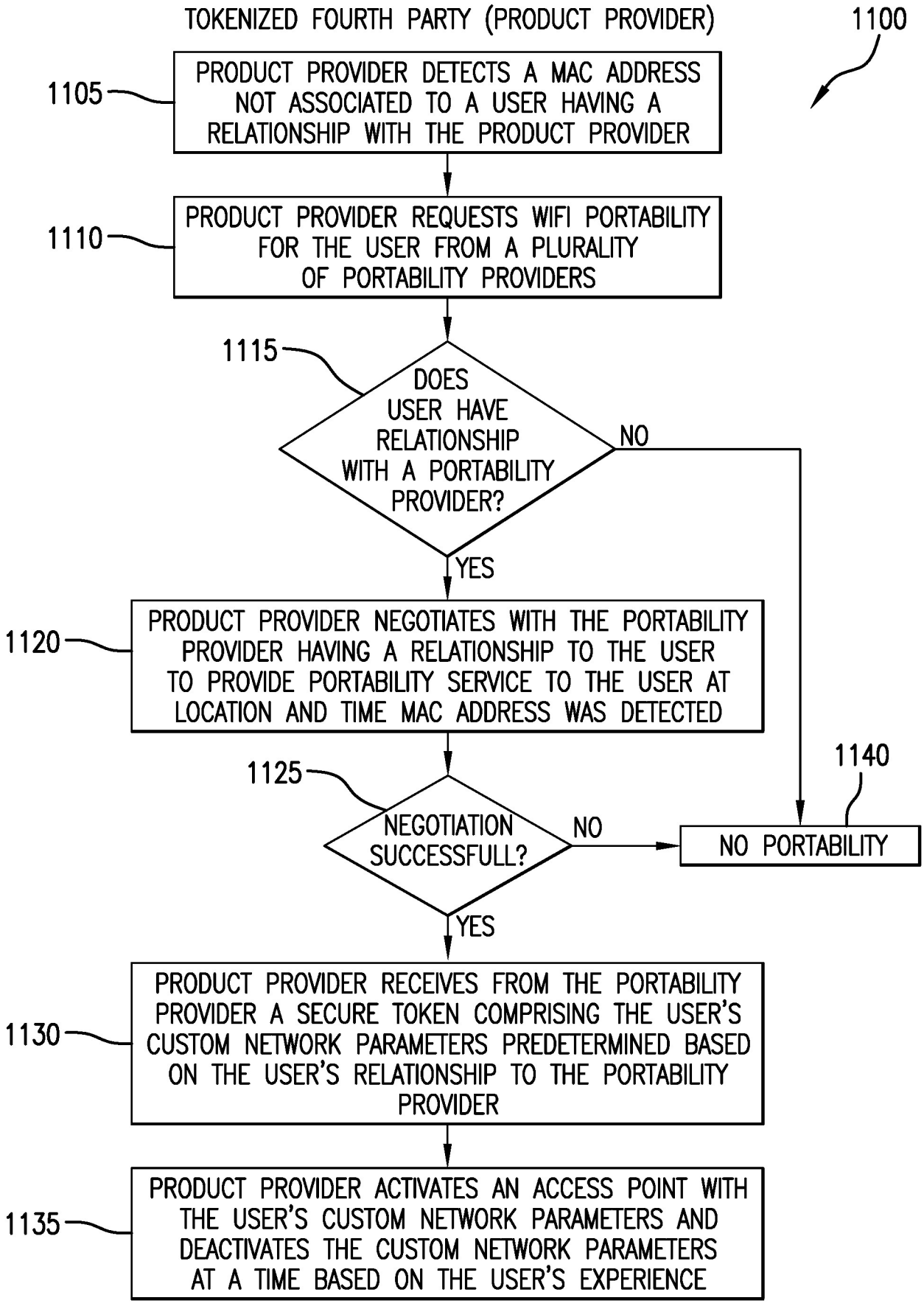
TOKENIZED FOURTH PARTY (PRODUCT PROVIDER)
1100
1105
PRODUCT PROVIDER DETECTS A MAC ADDRESS NOT ASSOCIATED TO A USER HAVING A RELATIONSHIP WITH THE PRODUCT PROVIDER
1110
PRODUCT PROVIDER REQUESTS WIFI PORTABILITY FOR THE USER FROM A PLURALITY OF PORTABILITY PROVIDERS
1115
DOES USER HAVE RELATIONSHIP WITH A PORTABILITY PROVIDER?
NO
YES
1120
PRODUCT PROVIDER NEGOTIATES WITH THE PORTABILITY PROVIDER HAVING A RELATIONSHIP TO THE USER TO PROVIDE PORTABILITY SERVICE TO THE USER AT LOCATION AND TIME MAC ADDRESS WAS DETECTED
1125
NEGOTIATION SUCCESSFULL?
NO
1140
NO PORTABILITY
YES
1130
PRODUCT PROVIDER RECEIVES FROM THE PORTABILITY PROVIDER A SECURE TOKEN COMPRISING THE USER'S CUSTOM NETWORK PARAMETERS PREDETERMINED BASED ON THE USER'S RELATIONSHIP TO THE PORTABILITY PROVIDER
1135
PRODUCT PROVIDER ACTIVATES AN ACCESS POINT WITH THE USER'S CUSTOM NETWORK PARAMETERS AND DEACTIVATES THE CUSTOM NETWORK PARAMETERS AT A TIME BASED ON THE USER'S EXPERIENCE

FIG.11

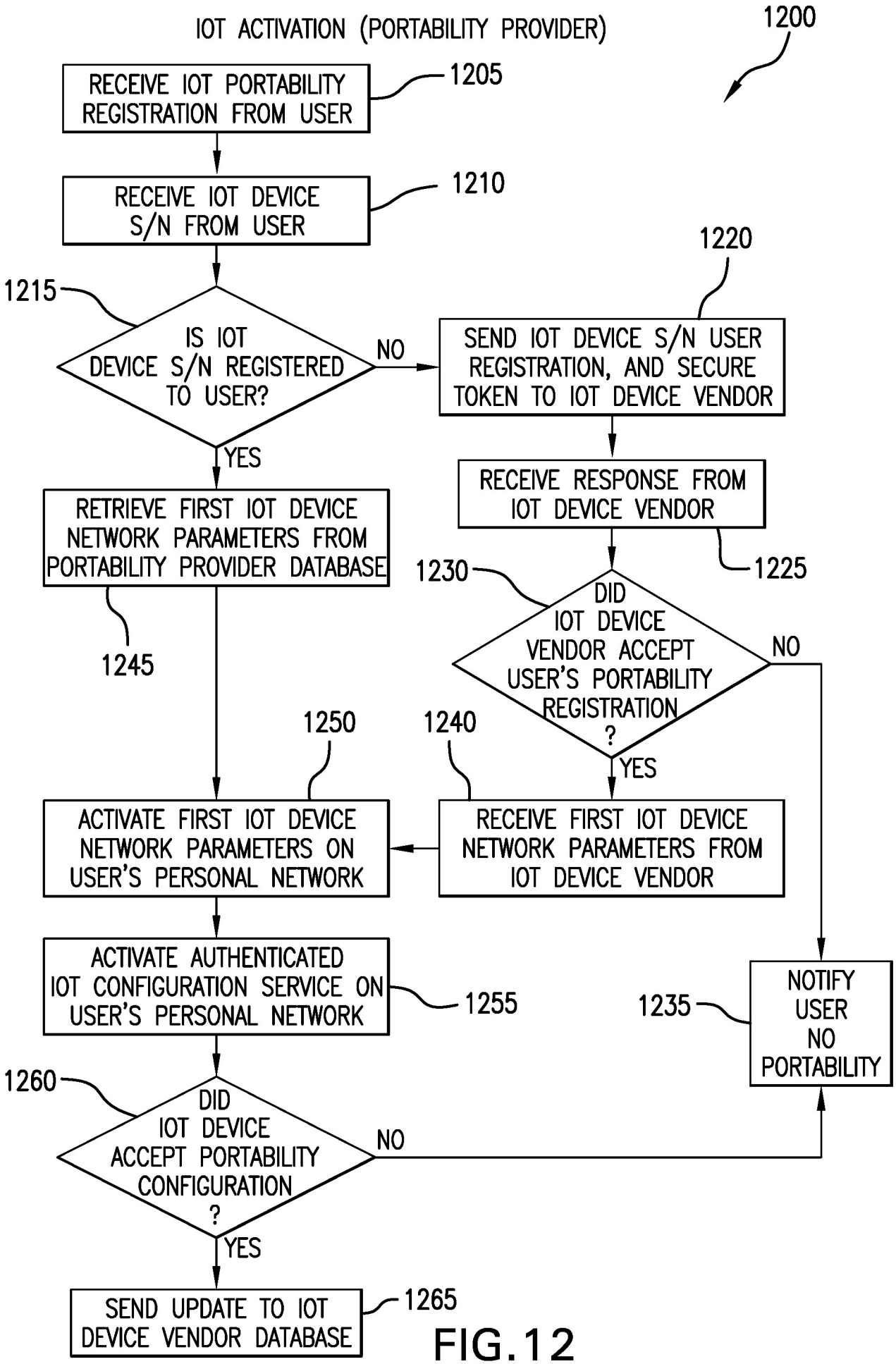
IOT ACTIVATION (PORTABILITY PROVIDER)
1200
RECEIVE IOT PORTABILITY REGISTRATION FROM USER
1205
RECEIVE IOT DEVICE S/N FROM USER
1210
1215
IS IOT DEVICE S/N REGISTERED TO USER?
NO
YES
1220
SEND IOT DEVICE S/N USER REGISTRATION, AND SECURE TOKEN TO IOT DEVICE VENDOR
RECEIVE RESPONSE FROM IOT DEVICE VENDOR
1225
1230
DID IOT DEVICE VENDOR ACCEPT USER'S PORTABILITY REGISTRATION ?
NO
YES
RETRIEVE FIRST IOT DEVICE NETWORK PARAMETERS FROM PORTABILITY PROVIDER DATABASE
1245
1240
RECEIVE FIRST IOT DEVICE NETWORK PARAMETERS FROM IOT DEVICE VENDOR
1250
ACTIVATE FIRST IOT DEVICE NETWORK PARAMETERS ON USER'S PERSONAL NETWORK
ACTIVATE AUTHENTICATED IOT CONFIGURATION SERVICE ON USER'S PERSONAL NETWORK
1255
1235
NOTIFY USER NO PORTABILITY
1260
DID IOT DEVICE ACCEPT PORTABILITY CONFIGURATION ?
NO
YES
SEND UPDATE TO IOT DEVICE VENDOR DATABASE
1265

FIG.12

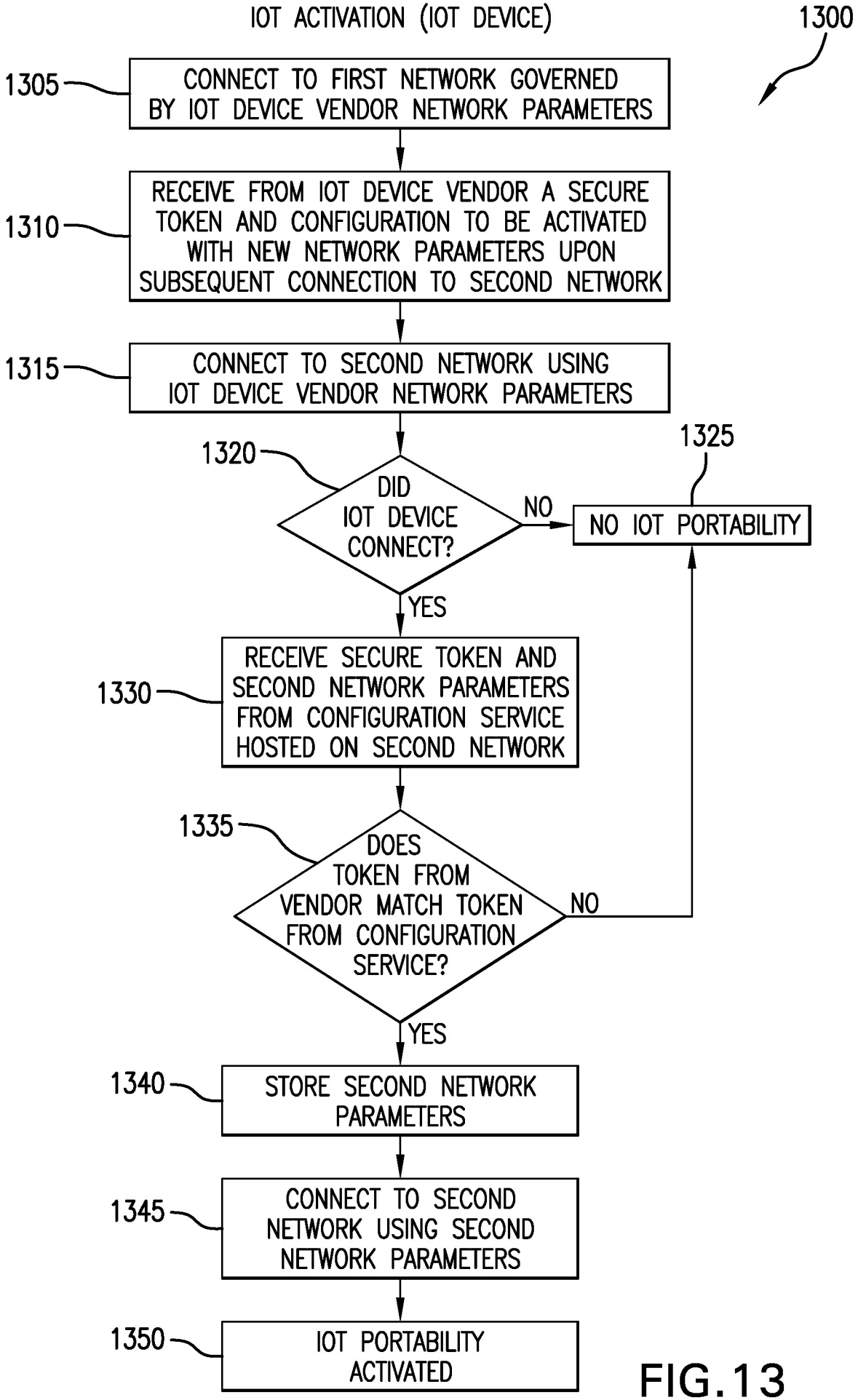
IOT ACTIVATION (IOT DEVICE)
1300
1305
CONNECT TO FIRST NETWORK GOVERNED BY IOT DEVICE VENDOR NETWORK PARAMETERS
1310
RECEIVE FROM IOT DEVICE VENDOR A SECURE TOKEN AND CONFIGURATION TO BE ACTIVATED WITH NEW NETWORK PARAMETERS UPON SUBSEQUENT CONNECTION TO SECOND NETWORK
1315
CONNECT TO SECOND NETWORK USING IOT DEVICE VENDOR NETWORK PARAMETERS
1320
DID IOT DEVICE CONNECT?
NO
1325
NO IOT PORTABILITY
YES
1330
RECEIVE SECURE TOKEN AND SECOND NETWORK PARAMETERS FROM CONFIGURATION SERVICE HOSTED ON SECOND NETWORK
1335
DOES TOKEN FROM VENDOR MATCH TOKEN FROM CONFIGURATION SERVICE?
NO
YES
1340
STORE SECOND NETWORK PARAMETERS
1345
CONNECT TO SECOND NETWORK USING SECOND NETWORK PARAMETERS
1350
IOT PORTABILITY ACTIVATED

FIG.13