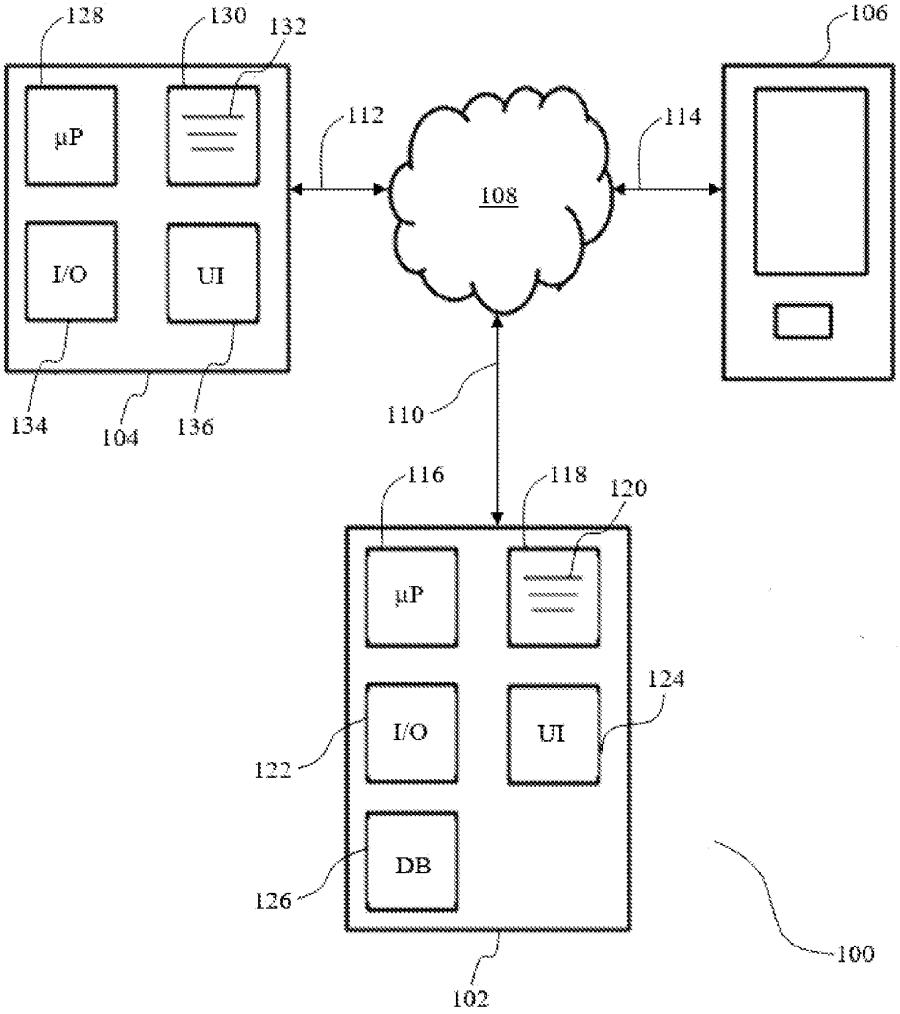
128
130
132
106
µP
112
114
108
I/O
UI
134
104
136
110
116
118
120
µP
124
I/O
UI
122
DB
126
100
102

FIG. 1

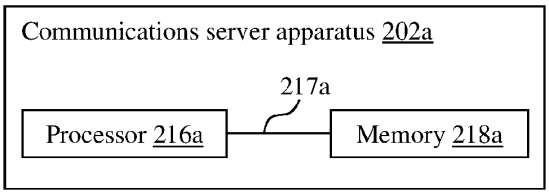

FIG. 2A

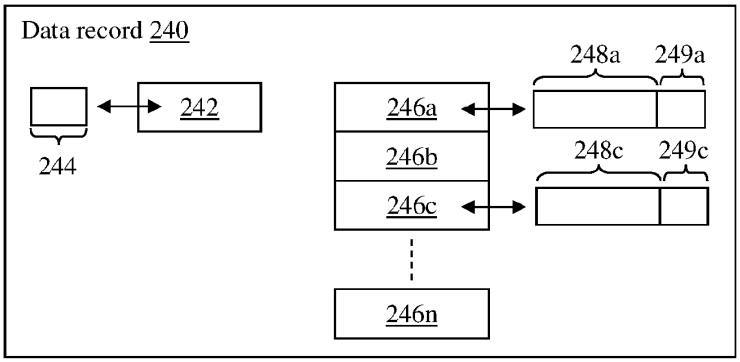

FIG. 2B

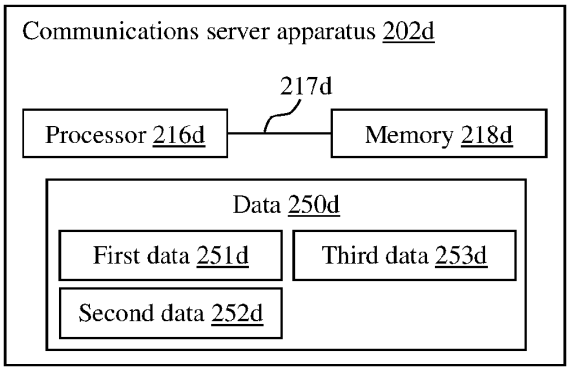

FIG. 2D

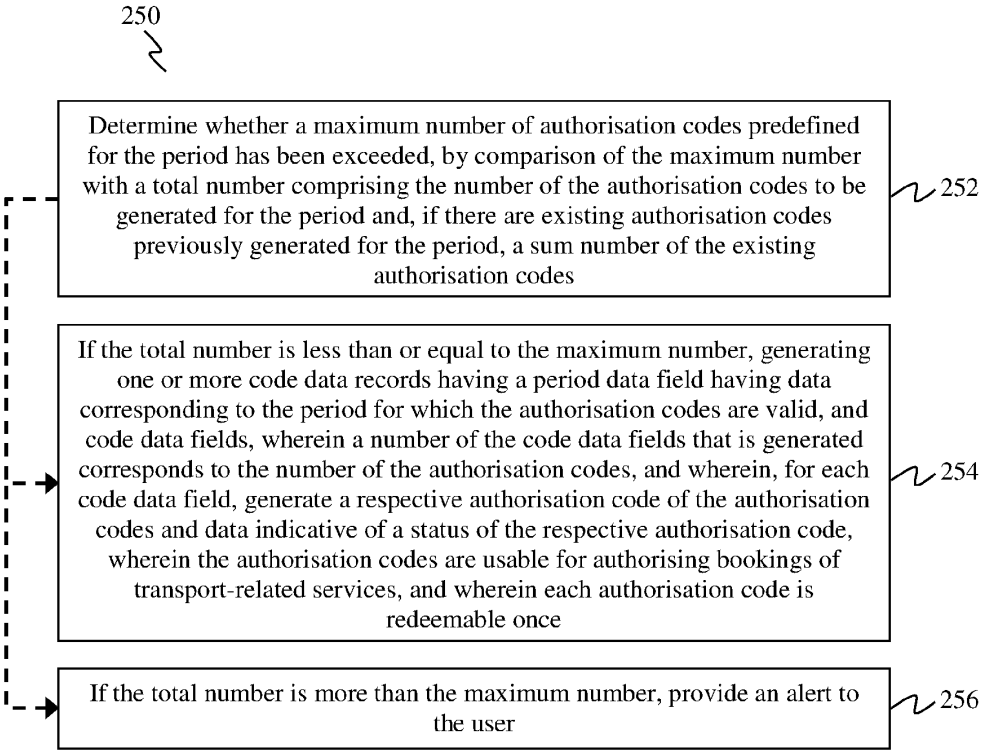
250
Determine whether a maximum number of authorisation codes predefined for the period has been exceeded, by comparison of the maximum number with a total number comprising the number of the authorisation codes to be generated for the period and, if there are existing authorisation codes previously generated for the period, a sum number of the existing authorisation codes
252
If the total number is less than or equal to the maximum number, generating one or more code data records having a period data field having data corresponding to the period for which the authorisation codes are valid, and code data fields, wherein a number of the code data fields that is generated corresponds to the number of the authorisation codes, and wherein, for each code data field, generate a respective authorisation code of the authorisation codes and data indicative of a status of the respective authorisation code, wherein the authorisation codes are usable for authorising bookings of transport-related services, and wherein each authorisation code is redeemable once
254
If the total number is more than the maximum number, provide an alert to the user
256

FIG. 2C

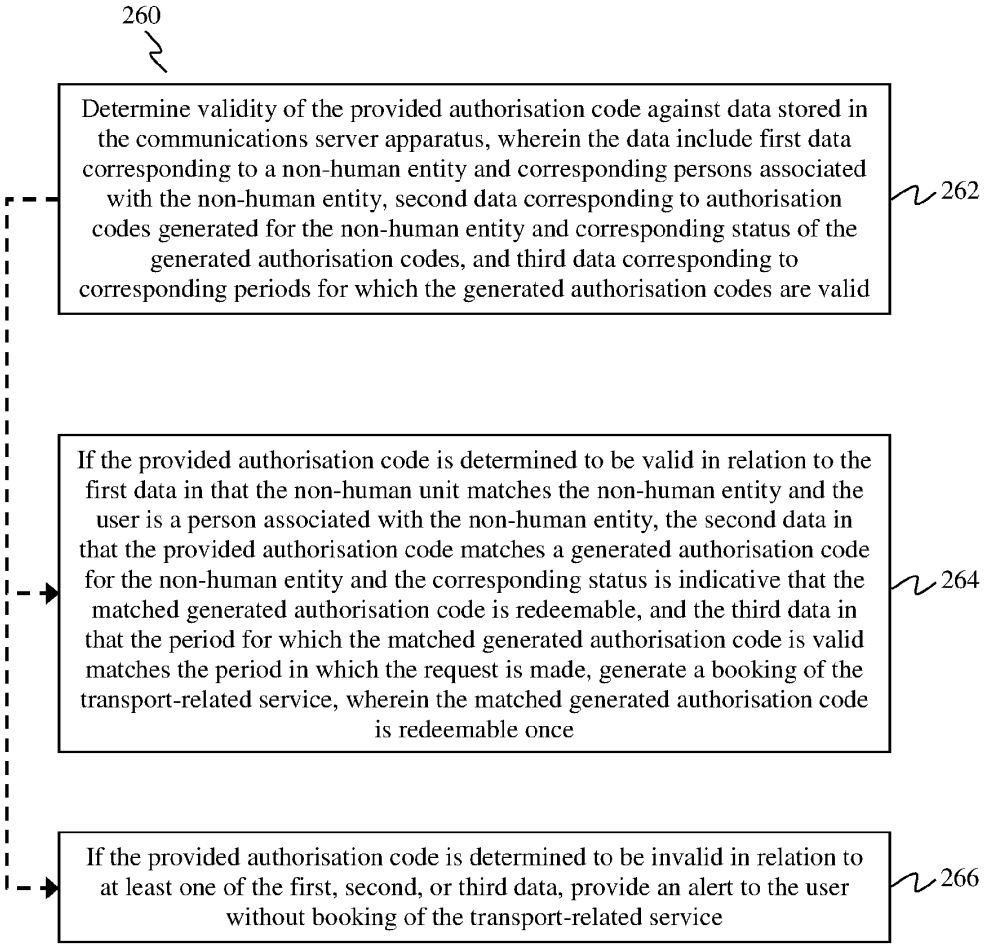
260
Determine validity of the provided authorisation code against data stored in the communications server apparatus, wherein the data include first data corresponding to a non-human entity and corresponding persons associated with the non-human entity, second data corresponding to authorisation codes generated for the non-human entity and corresponding status of the generated authorisation codes, and third data corresponding to corresponding periods for which the generated authorisation codes are valid
262
If the provided authorisation code is determined to be valid in relation to the first data in that the non-human unit matches the non-human entity and the user is a person associated with the non-human entity, the second data in that the provided authorisation code matches a generated authorisation code for the non-human entity and the corresponding status is indicative that the matched generated authorisation code is redeemable, and the third data in that the period for which the matched generated authorisation code is valid matches the period in which the request is made, generate a booking of the transport-related service, wherein the matched generated authorisation code is redeemable once
264
If the provided authorisation code is determined to be invalid in relation to at least one of the first, second, or third data, provide an alert to the user without booking of the transport-related service
266

FIG. 2E

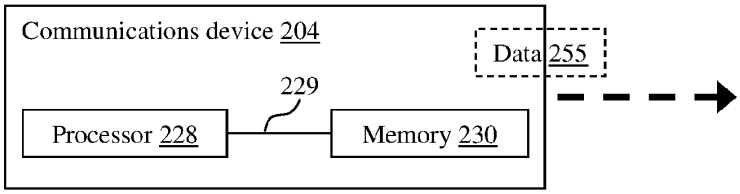
Communications device 204
Data 255
229
Processor 228
Memory 230

FIG. 2F

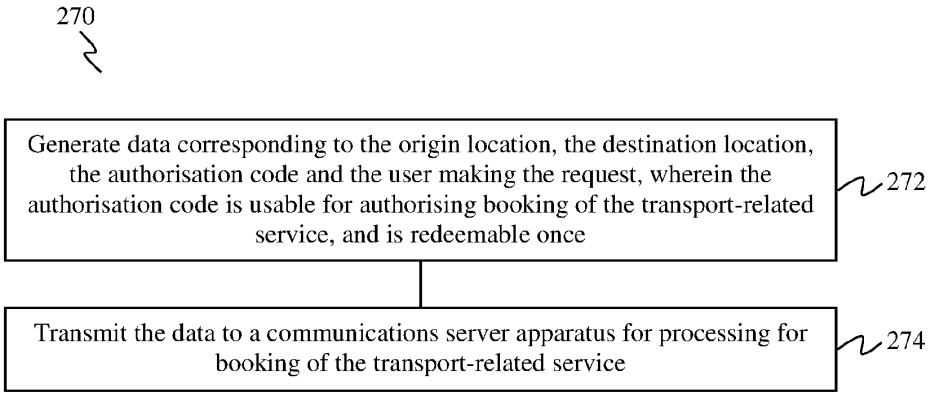
270
Generate data corresponding to the origin location, the destination location, the authorisation code and the user making the request, wherein the authorisation code is usable for authorising booking of the transport-related service, and is redeemable once
272
Transmit the data to a communications server apparatus for processing for booking of the transport-related service
274

FIG. 2G

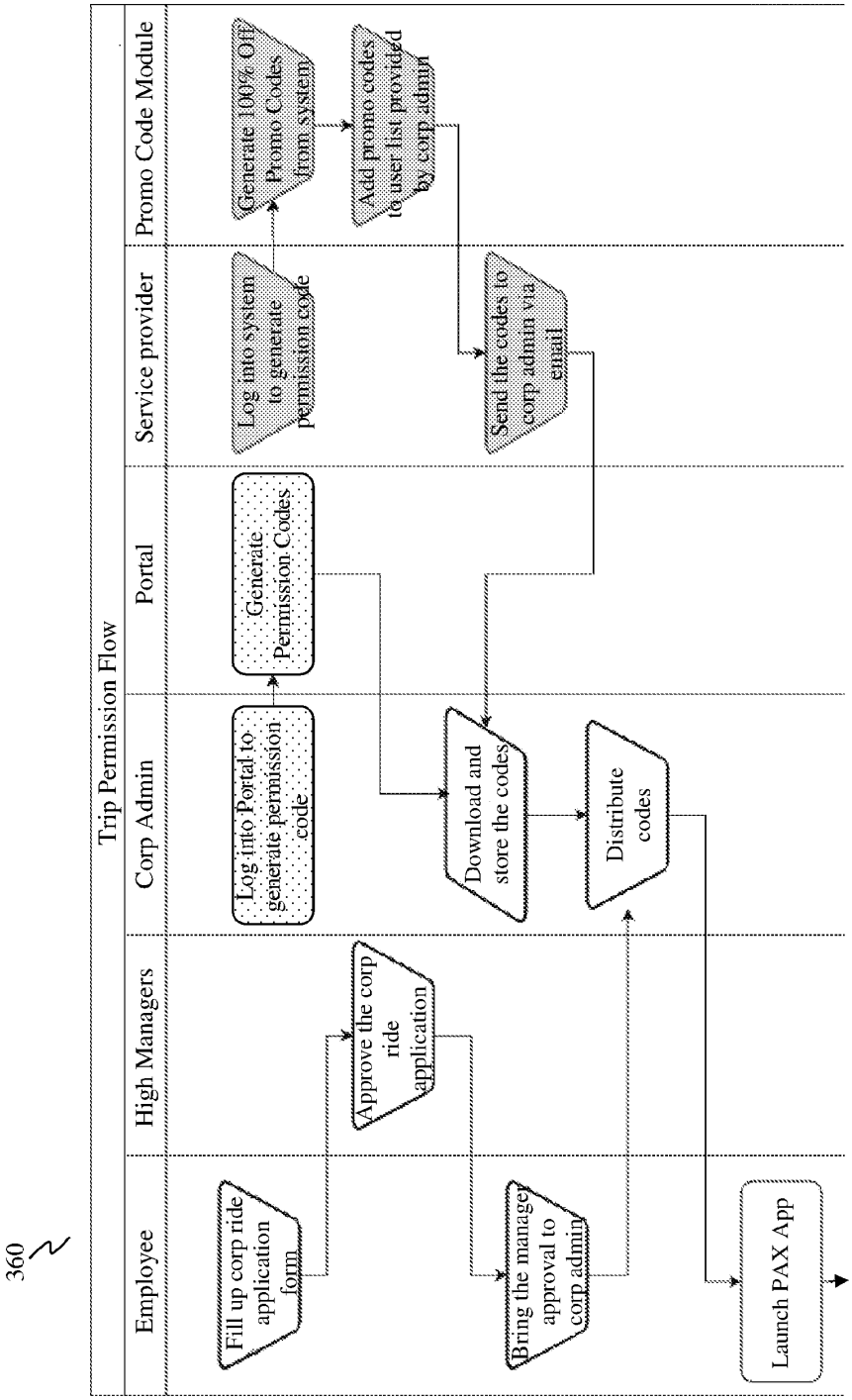
360
Trip Permission Flow
Employee
High Managers
Corp Admin
Portal
Service provider
Promo Code Module
Fill up corp ride application form
Approve the corp ride application
Bring the manager approval to corp admin
Log into Portal to generate permission code
Generate Permission Codes
Download and store the codes
Distribute codes
Launch PAX App
Log into system to generate permission code
Generate 100% Off Promo Codes from system
Add promo codes to user list provided by corp admin
Send the codes to corp admin via email

FIG. 3

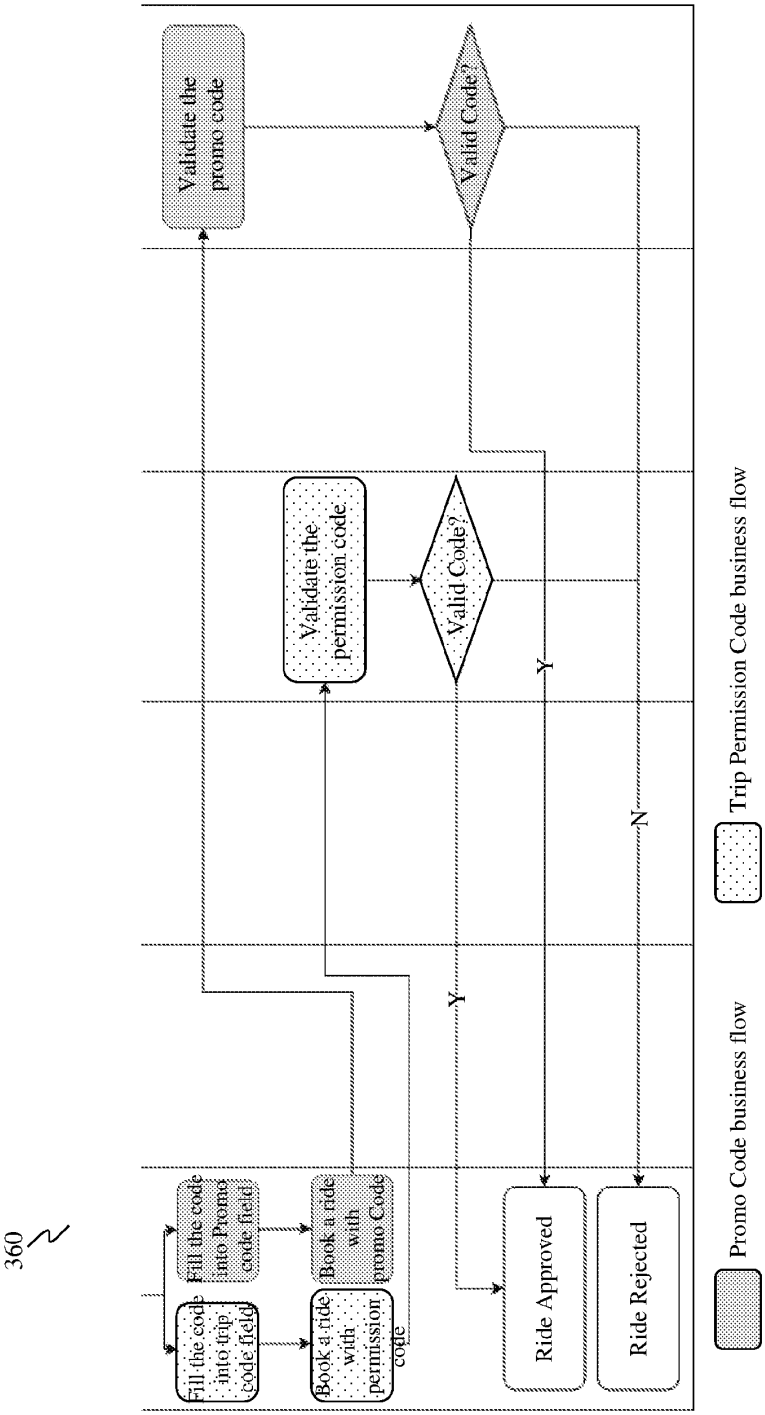

FIG. 3 (continued)

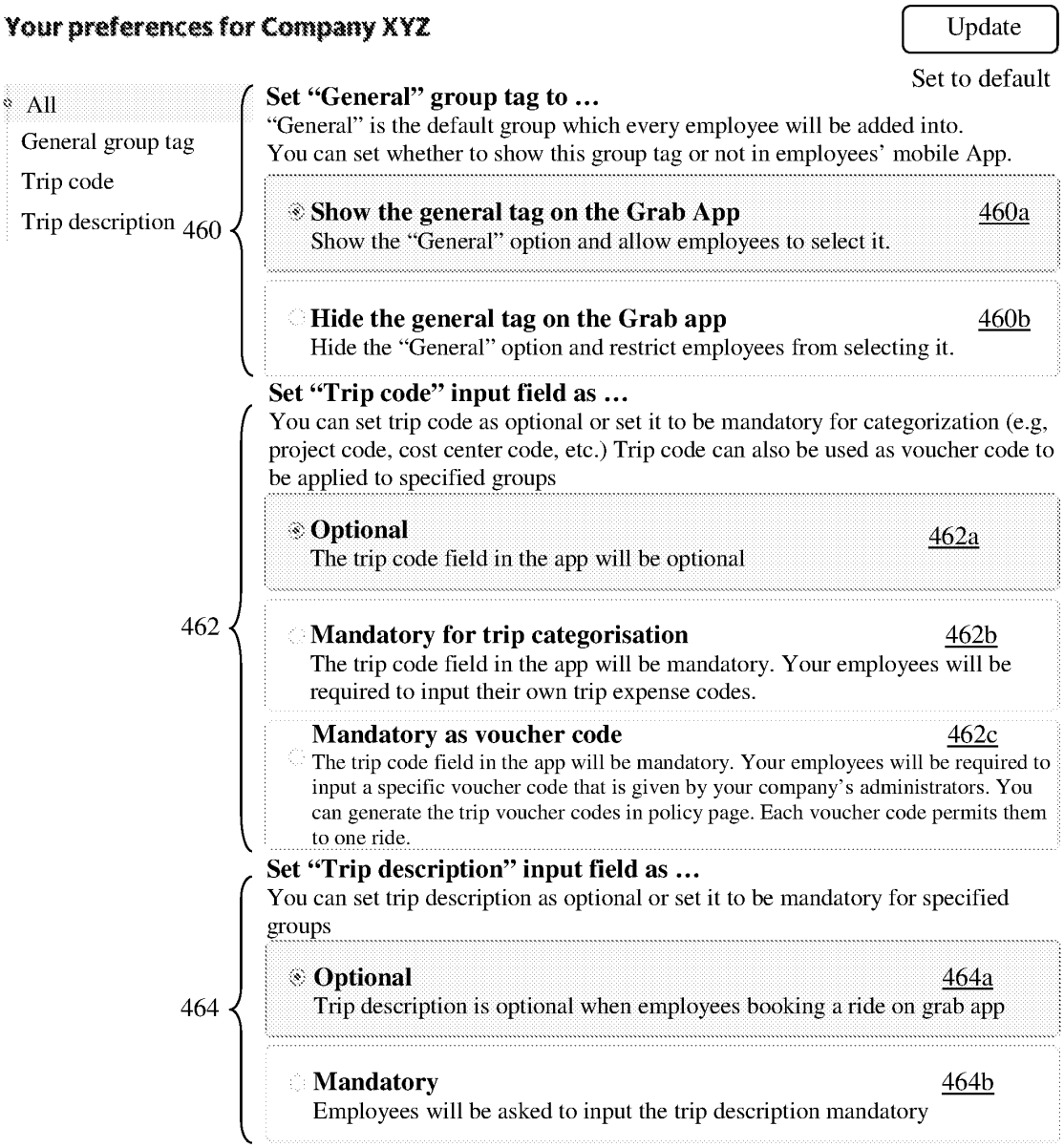
Your preferences for Company XYZ
Update
Set to default
All
General group tag
Trip code
Trip description
460
Set "General" group tag to …
"General" is the default group which every employee will be added into.
You can set whether to show this group tag or not in employees' mobile App.
Show the general tag on the Grab App
Show the "General" option and allow employees to select it.
460a
Hide the general tag on the Grab app
Hide the "General" option and restrict employees from selecting it.
460b
462
Set "Trip code" input field as …
You can set trip code as optional or set it to be mandatory for categorization (e.g, project code, cost center code, etc.) Trip code can also be used as voucher code to be applied to specified groups
Optional
The trip code field in the app will be optional
462a
Mandatory for trip categorisation
The trip code field in the app will be mandatory. Your employees will be required to input their own trip expense codes.
462b
Mandatory as voucher code
The trip code field in the app will be mandatory. Your employees will be required to input a specific voucher code that is given by your company's administrators. You can generate the trip voucher codes in policy page. Each voucher code permits them to one ride.
462c
464
Set "Trip description" input field as …
You can set trip description as optional or set it to be mandatory for specified groups
Optional
Trip description is optional when employees booking a ride on grab app
464a
Mandatory
Employees will be asked to input the trip description mandatory
464b

FIG. 4A

Set "General" group tag to …
"General" is the default group which every employee will be added into. You can set whether to show this group tag or not in employees' mobile App.

◉ **Show the general tag on the Grab App** 460a
Show the "General" option and allow employees to select it.

○ **Hide the general tag on the Grab app**
Hide the "General" option and restrict employees from selecting it.

Set "Trip code" input field as …
You can set trip code as optional or set it to be mandatory for categorization (e.g, project code, cost center code, etc.) Trip code can also be used as voucher code to be applied to specified groups

○ **Optional for free text only**
The trip code field in the app will be optional. It will be applied to all the company

○ **Mandatory for trip categorisation**
The trip code field in the app will be mandatory. Your employees will be required to input their own trip expense codes.

◉ **Mandatory as voucher code** 462c
The trip code field in the app will be mandatory. Your employees will be required to input a specific voucher code that is given by your company's administrators. You can generate the trip voucher codes in policy page. Each voucher code permits them to one ride.

Please select the groups to use the voucher code

Search for groups 463

Go to Trip Voucher Code Page

Set "Trip description" input field as …
You can set trip description as optional or set it to be mandatory for specified groups

◉ **Optional** 464a
Trip description is optional when employees booking a ride on grab app

○ **Mandatory**
Employees will be asked to input the trip description mandatory

FIG. 4B

Set "General" group tag to …
"General" is the default group which every employee will be added into. You can set whether to show this group tag or not in employees' mobile App.

◉ **Show the general tag on the Grab App**
Show the "General" option and allow employees to select it.

○ **Hide the general tag on the Grab app**
Hide the "General" option and restrict employees from selecting it.

Set "Trip code" input field as …
You can set trip code as optional or set it to be mandatory for categorization (e.g, project code, cost center code, etc.) Trip code can also be used as voucher code to be applied to specified groups

○ **Optional**
The trip code field in the app will be optional

○ **Mandatory for trip categorisation**
The trip code field in the app will be mandatory. Your employees will be required to input their own trip expense codes.

◉ **Mandatory as voucher code** 462c
The trip code field in the app will be mandatory. Your employees will be required to input a specific voucher code that is given by your company's administrators. You can generate the trip voucher codes in policy page. Each voucher code permits them to one ride.

Please select the groups to use the voucher code

Design × Sales D × d ~463

Go to Trip Voucher Code Page

Set "Tri All groups **s …**
You can Design √ or set it to be mandatory for specified groups
JKT sales team 1 √
JKT sales team 2 √

◉ en employees booking a ride on grab app

○ JKT sales team 3
Employees will be asked to input the trip description mandatory

FIG. 4C

Set "General" group tag to …
"General" is the default group which every employee will be added into. You can set whether to show this group tag or not in employees' mobile App.

◉ **Show the general tag on the Grab App**
Show the "General" option and allow employees to select it.

○ **Hide the general tag on the Grab app**
Hide the "General" option and restrict employees from selecting it.

Set "Trip code" input field as …
You can set trip code as optional or set it to be mandatory for categorization (e.g, project code, cost center code, etc.) Trip code can also be used as voucher code to be applied to specified groups

○ **Optional**
The trip code field in the app will be optional

○ **Mandatory for trip categorisation**
The trip code field in the app will be mandatory. Your employees will be required to input their own trip expense codes.

◉ **Mandatory as voucher code** 462c
The trip code field in the app will be mandatory. Your employees will be required to input a specific voucher code that is given by your company's administrators. You can generate the trip voucher codes in policy page. Each voucher code permits them to one ride.

Please select the groups to use the voucher code

JKT sales team 1 × JKT sales team 2 × JKT sales team 3 × 463

Go to Trip Voucher Code Page

Set "Trip description" input field as …
You can set trip description as optional or set it to be mandatory for specified groups

◉ **Optional**
Trip description is optional when employees booking a ride on grab app

○ **Mandatory**
Employees will be asked to input the trip description mandatory

FIG. 4D

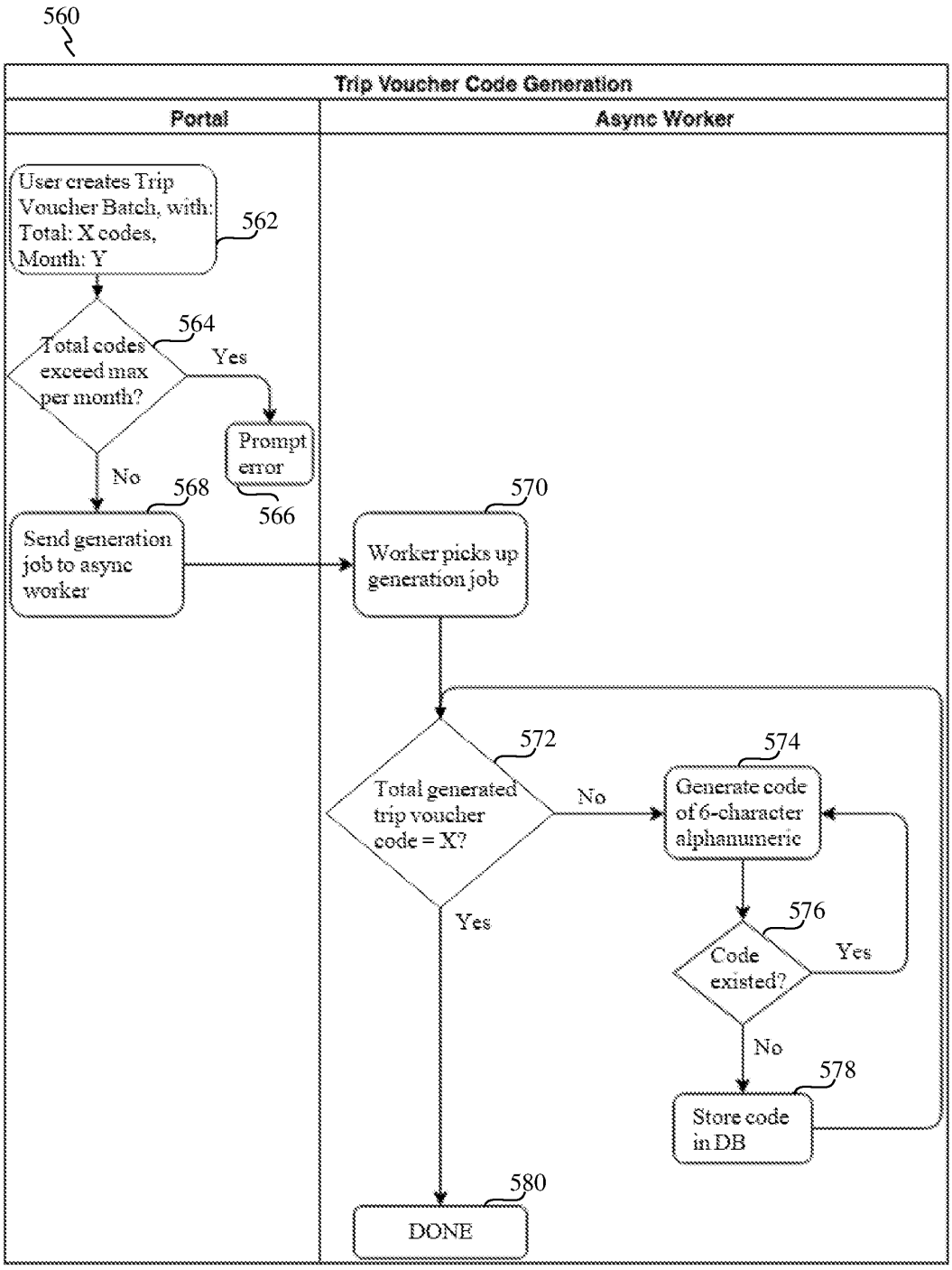
560
Trip Voucher Code Generation
Portal
Async Worker
User creates Trip Voucher Batch, with: Total: X codes, Month: Y
562
Total codes exceed max per month?
564
Yes
Prompt error
566
No
568
Send generation job to async worker
570
Worker picks up generation job
572
Total generated trip voucher code = X?
No
574
Generate code of 6-character alphanumeric
576
Code existed?
Yes
No
578
Store code in DB
Yes
580
DONE

FIG. 5

Time
Location
Vehicle Type
Voucher Code
Months
Select month
Generate New Codes
No. 08
Month Jan, 2018
Issued codes 1000
Used codes 800
Revoked codes 0
Available codes 200
Action Revoke | Download
Code Issue History 10
No. 07
Month Dec, 2017
Issued codes 1000
Used codes 200
Revoked codes 0
Available codes 800
Action Download
No. 06
Month Nov, 2017
Issued codes 1000
Used codes 200
Revoked codes 0
Available codes 800
Action Download
No. 05
Month Sept, 2017
Issued codes 1000
Used codes 200
Revoked codes 0
Available codes 800
Action Download

FIG. 6A

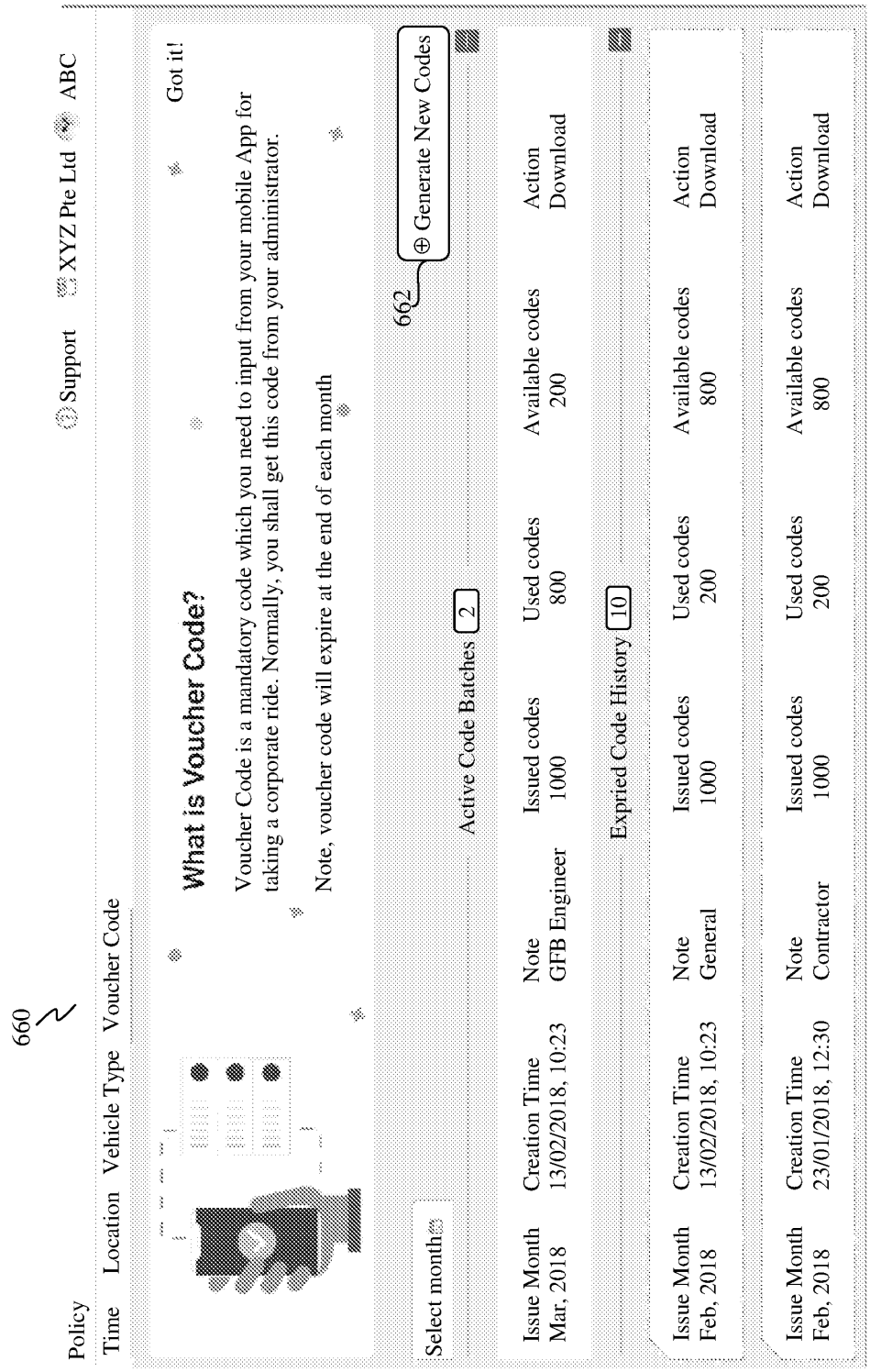
660
Policy
Time
Location
Vehicle Type
Voucher Code
Support
XYZ Pte Ltd
ABC
What is Voucher Code?
Got it!
Voucher Code is a mandatory code which you need to input from your mobile App for taking a corporate ride. Normally, you shall get this code from your administrator.
Note, voucher code will expire at the end of each month
662
⊕ Generate New Codes
Select month
Active Code Batches 2
Issue Month
Mar, 2018
Creation Time
13/02/2018, 10:23
Note
GFB Engineer
Issued codes
1000
Used codes
800
Available codes
200
Action
Download
Expried Code History 10
Issue Month
Feb, 2018
Creation Time
13/02/2018, 10:23
Note
General
Issued codes
1000
Used codes
200
Available codes
800
Action
Download
Issue Month
Feb, 2018
Creation Time
23/01/2018, 12:30
Note
Contractor
Issued codes
1000
Used codes
200
Available codes
800
Action
Download

FIG. 6B

660
662
Filter Issued Codes
Select month
Generate New Codes
Active Code Batches 2
Issue Month Mar, 2018
Creation Time 13/02/2018, 10:23
Note GFB Engineer
Issued codes 1000
Used codes 800
Available codes 200
Action Download
Expired Code History 10
Issue Month Feb, 2018
Creation Time 13/02/2018, 10:23
Note General
Issued codes 1000
Used codes 200
Available codes 800
Action Download
Issue Month Feb, 2018
Creation Time 23/01/2018, 12:30
Note Contractor
Issued codes 1000
Used codes 200
Available codes 800
Action Download
Issue Month Jan, 2018
Creation Time 21/12/2017, 11:23
Note Design
Issued codes 1000
Used codes 200
Available codes 800
Action Download
Issue Month Dec, 2017
Creation Time 10/11/2017, 08:34
Note Engineer
Issued codes 1000
Used codes 200
Available codes 800
Action Download
Issue Month Nov, 2017
Creation Time 15/10/2017, 13:30
Note Sales
Issued codes 1000
Used codes 200
Available codes 800
Action Download

FIG. 6C

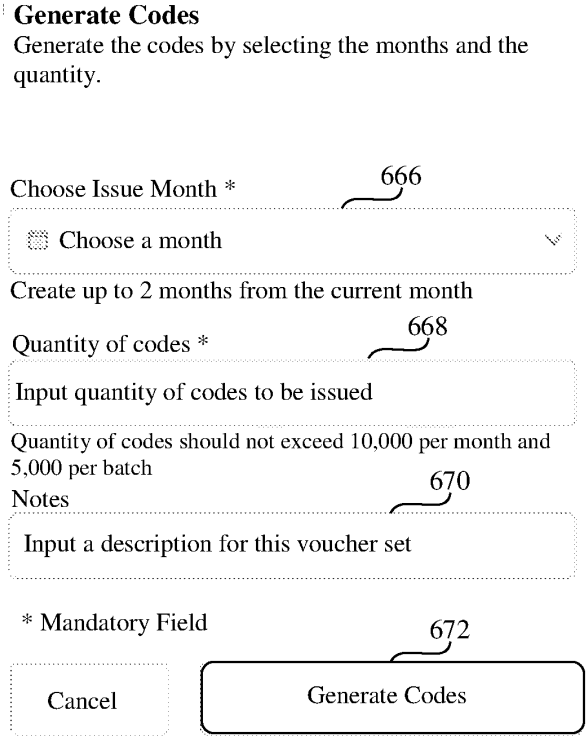
Generate Codes
Generate the codes by selecting the months and the quantity.
664
Choose Issue Month *
666
Choose a month
Create up to 2 months from the current month
Quantity of codes *
668
Input quantity of codes to be issued
Quantity of codes should not exceed 10,000 per month and 5,000 per batch
Notes
670
Input a description for this voucher set
* Mandatory Field
672
Cancel
Generate Codes

FIG. 6D

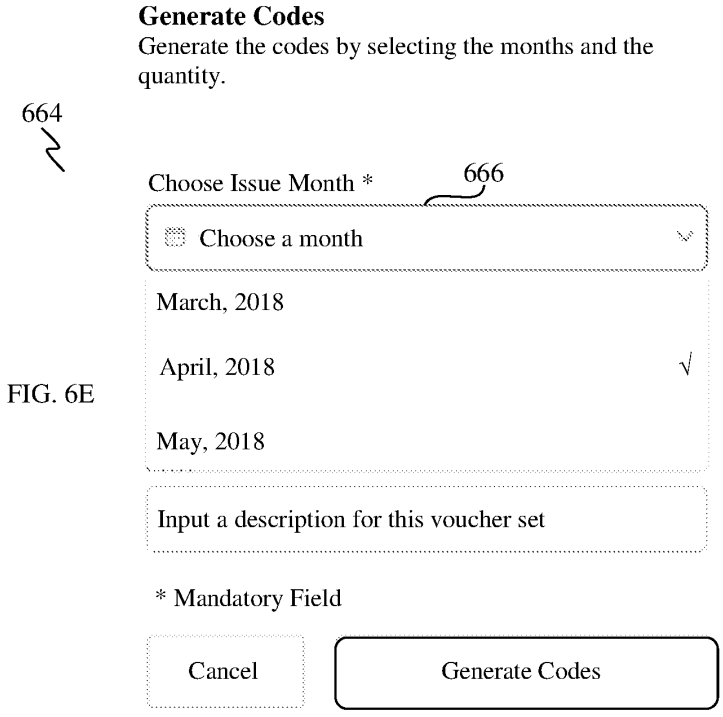
Generate Codes
Generate the codes by selecting the months and the quantity.
664
Choose Issue Month *
666
Choose a month
March, 2018
April, 2018
√
May, 2018
Input a description for this voucher set
* Mandatory Field
Cancel
Generate Codes

FIG. 6E

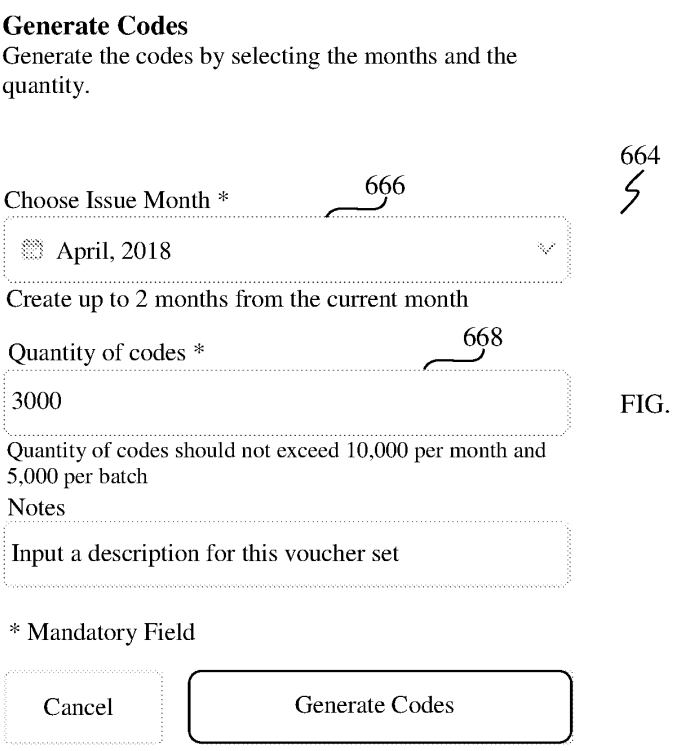
Generate Codes
Generate the codes by selecting the months and the quantity.
664
Choose Issue Month *
666
April, 2018
Create up to 2 months from the current month
Quantity of codes *
668
3000
Quantity of codes should not exceed 10,000 per month and 5,000 per batch
Notes
Input a description for this voucher set
* Mandatory Field
Cancel
Generate Codes

FIG. 6F

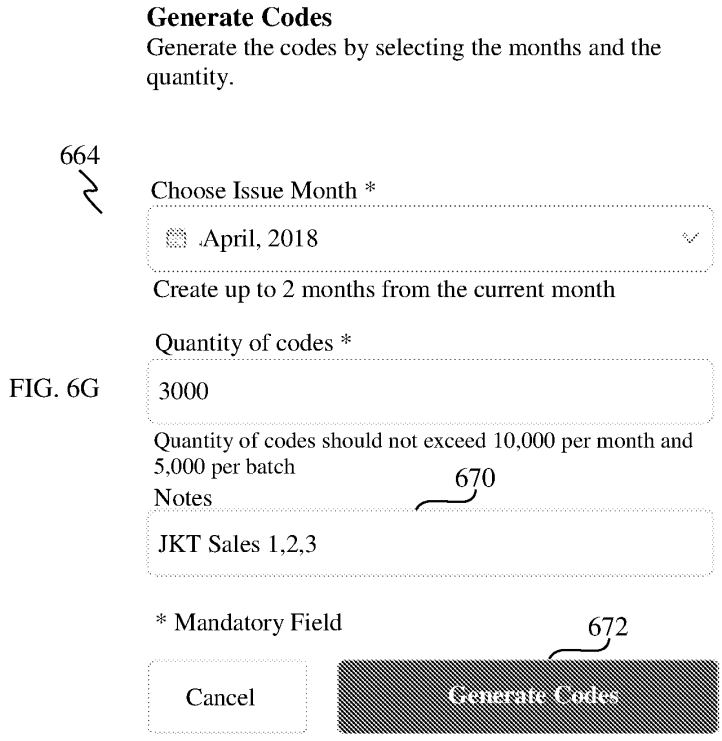
Generate Codes
Generate the codes by selecting the months and the quantity.
664
Choose Issue Month *
April, 2018
Create up to 2 months from the current month
Quantity of codes *
3000
Quantity of codes should not exceed 10,000 per month and 5,000 per batch
670
Notes
JKT Sales 1,2,3
* Mandatory Field
672
Cancel
Generate Codes

FIG. 6G

SUBSTITUTE SHEET RULE 26

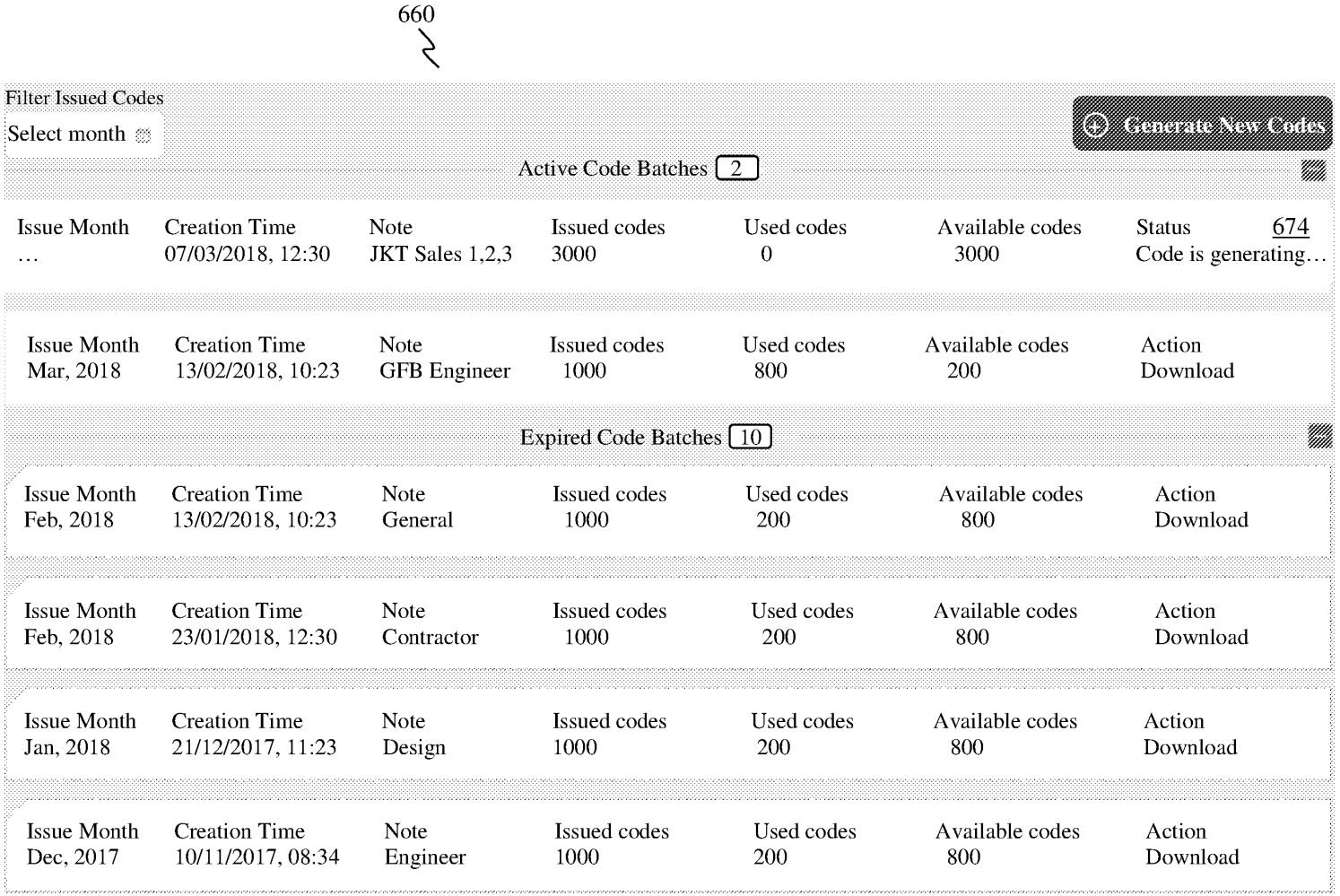

FIG. 6H

660

Filter Issued Codes

Select month

Generate New Codes

Active Code Batches 2

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Status 674
…	07/03/2018, 12:30	JKT Sales 1,2,3	3000	0	3000	Error in code generation!
Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Mar, 2018	13/02/2018, 10:23	GFB Engineer	1000	800	200	Download

Expired Code Batches 10

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Feb, 2018	13/02/2018, 10:23	General	1000	200	800	Download
Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Feb, 2018	23/01/2018, 12:30	Contractor	1000	200	800	Download
Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Jan, 2018	21/12/2017, 11:23	Design	1000	200	800	Download
Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Dec, 2017	10/11/2017, 08:34	Engineer	1000	200	800	Download

FIG. 6I

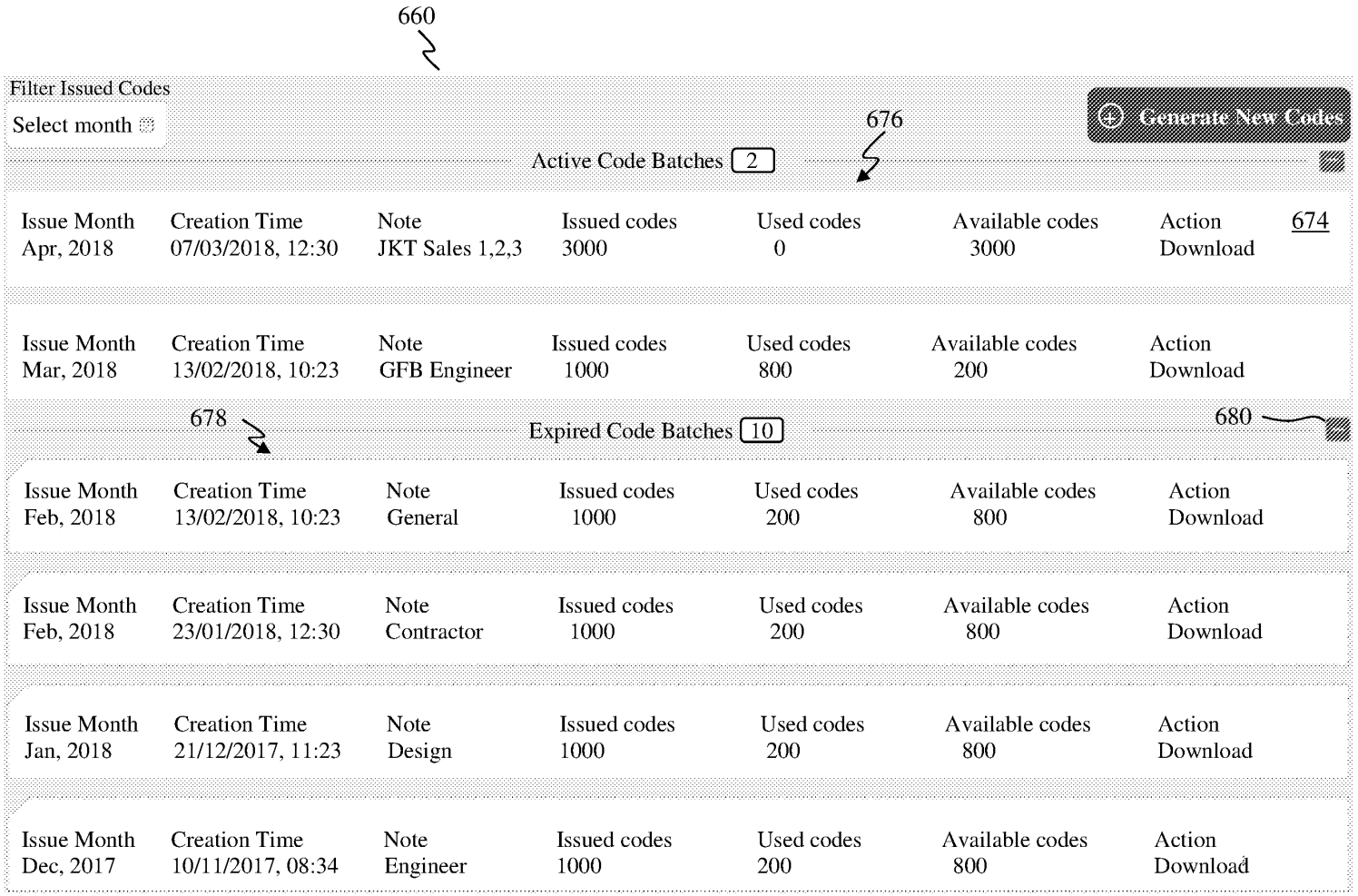

FIG. 6J

SUBSTITUTE SHEET RULE 26

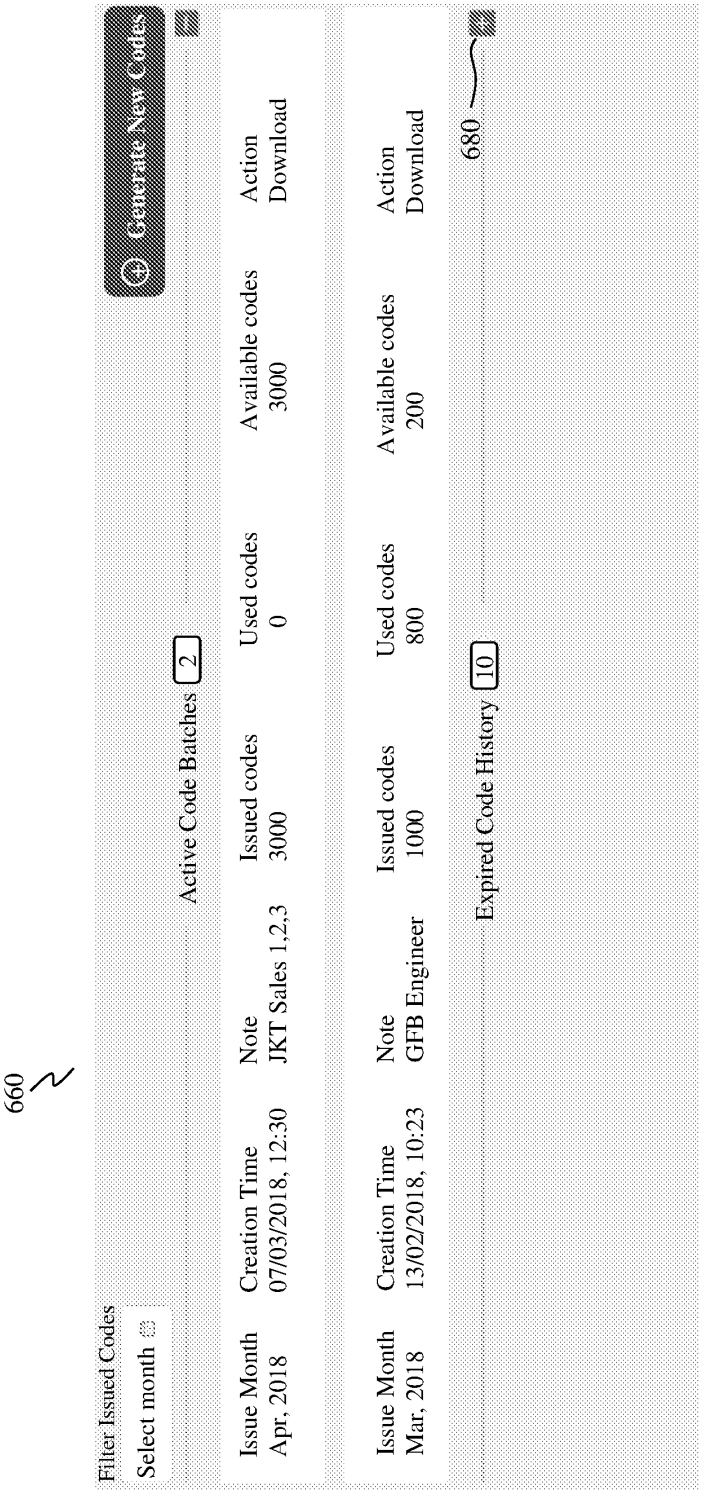
660
Filter Issued Codes
Select month
Generate New Codes
Active Code Batches 2
Issue Month
Apr, 2018
Creation Time
07/03/2018, 12:30
Note
JKT Sales 1,2,3
Issued codes
3000
Used codes
0
Available codes
3000
Action
Download
Issue Month
Mar, 2018
Creation Time
13/02/2018, 10:23
Note
GFB Engineer
Issued codes
1000
Used codes
800
Available codes
200
Action
Download
Expired Code History 10
680

FIG. 6K

660

Filter Issued Codes

Select month 682

Generate New Codes

2017

Jan Feb Mar
Apr May June
Aug Sep
Oct Nov Dec

Active Code Batches 3

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Mar, 2018	13/02/2018, 10:23	GFB Engineer	1000	800	200	Download
Mar, 2018	13/02/2018, 10:23	07	1000	200	800	Download
Mar, 2018	Nov, 2017	06	1000	200	800	Download
Mar, 2018	Sep, 2017	05	1000	200	800	Download

Expired Code History 10

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Mar, 2018	13/02/2018, 10:23	JKT Sales 1,2,3	3000	0	3000	Download

FIG. 6L

660

Filter Issued Codes

Jul 2017 – Nov 2017 682

Generate New Codes

Active Code Batches 3

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Apr, 2018	07/03/2018, 12:30	JKT Sales 1,2,3	3000	0	3000	Download
Apr, 2018	07/03/2018, 12:30	JKT Sales 1,2,3	3000	0	3000	Download
Mar, 2018	13/02/2018, 10:23	GFB Engineer	1000	800	200	Download

Expired Code History 10

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Mar, 2018	13/02/2018, 10:23	07	1000	200	800	Download
Mar, 2018	Nov, 2017	06	1000	200	800	Download
Mar, 2018	Sep, 2017	05	1000	200	800	Download

FIG. 6M

660

Issue Month	Creation Time	Note	Issued codes	Used codes	Available codes	Action
Mar, 2018	Aug, 2017	04	1000	200	800	Download
Mar, 2018	July, 2017	03	1000	200	800	Download
Mar, 2018	Nov, 2017	02	1000	200	800	Download
Mar, 2018	Nov, 2017	General	1000	200	800	Download

< 2 3 4 5 > 10 / page Goto

FIG. 6M (continued)

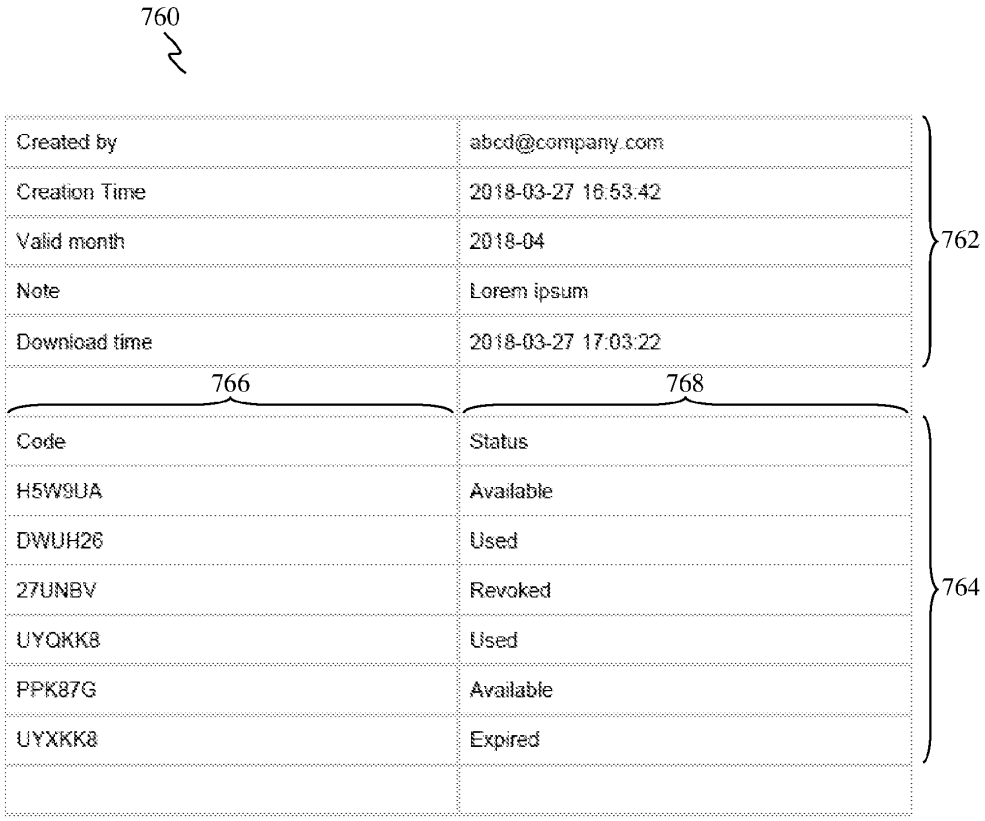
760
Created by
abcd@company.com
Creation Time
2018-03-27 16:53:42
Valid month
2018-04
Note
Lorem ipsum
Download time
2018-03-27 17:03:22
762
766
768
Code
Status
H5W9UA
Available
DWUH26
Used
27UNBV
Revoked
UYQKK8
Used
PPK87G
Available
UYXKK8
Expired
764

FIG. 7

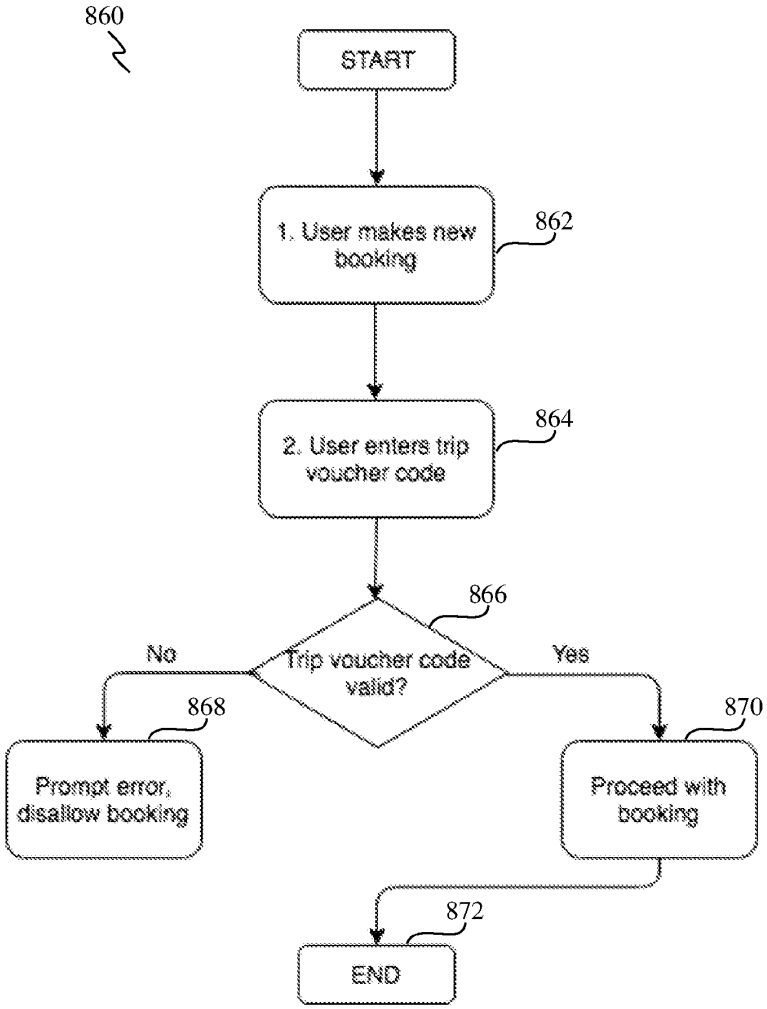
860
START
1. User makes new booking
862
2. User enters trip voucher code
864
866
Trip voucher code valid?
No
Yes
868
Prompt error, disallow booking
870
Proceed with booking
872
END

FIG. 8

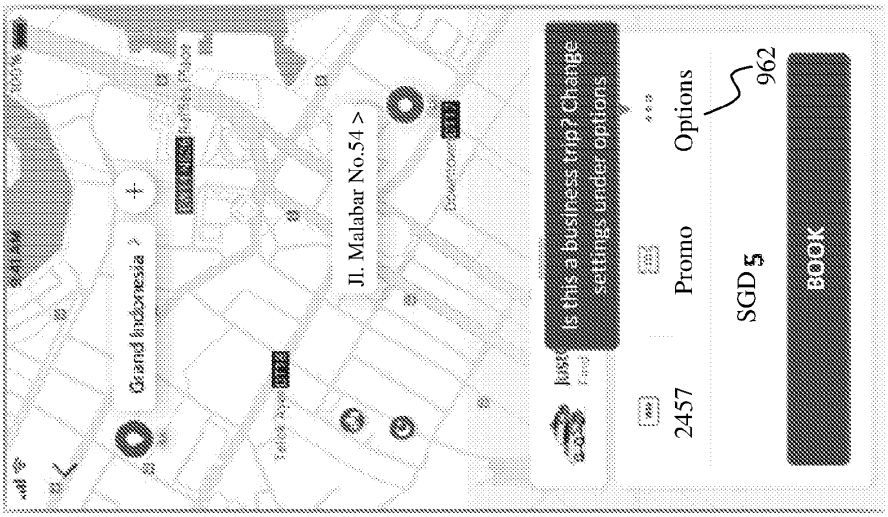
960
Grand Indonesia
Jl. Malabar No.54 >
Is this a business trip? Change settings under options
2457
Promo
Options
962
SGD 5
BOOK

FIG. 9A

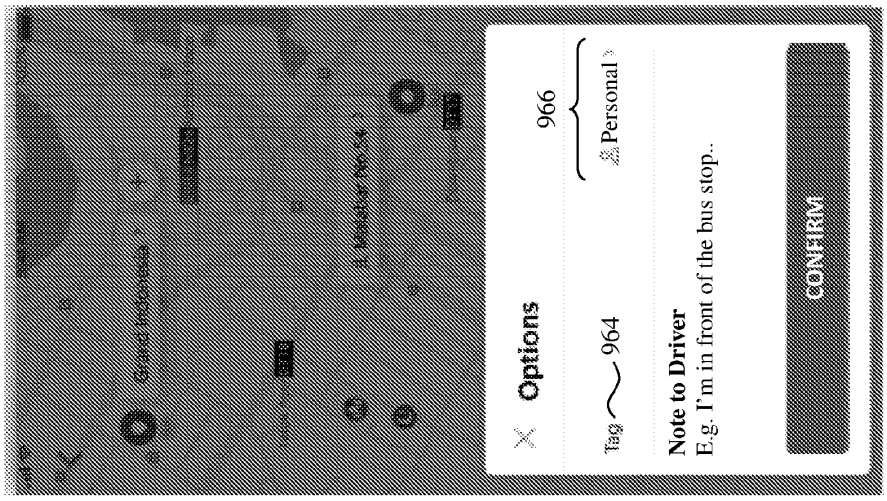
Options
966
Personal
Tag
964
Note to Driver
E.g. I'm in front of the bus stop..
CONFIRM

FIG. 9B

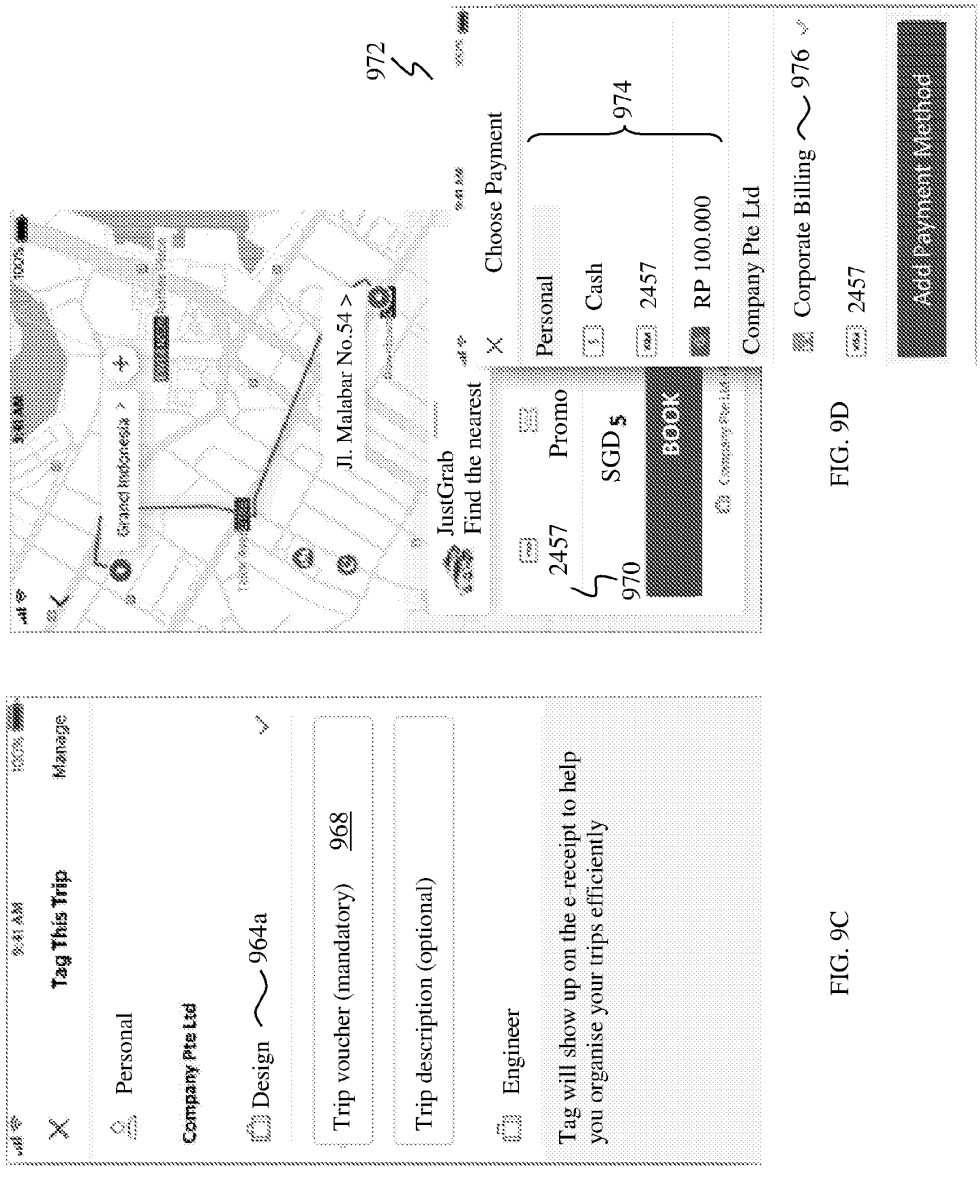
960
Tag This Trip
Manage
Personal
Company Pte Ltd
Design
964a
Trip voucher (mandatory)
968
Trip description (optional)
Engineer
Tag will show up on the e-receipt to help you organise your trips efficiently
Grand Indonesia
Jl. Malabar No.54
972
JustGrab
Find the nearest
Choose Payment
2457
Promo
970
SGD 5
BOOK
Personal
Cash
2457
RP 100.000
Company Pte Ltd
974
Corporate Billing
976
2457
Add Payment Method

FIG. 9C

FIG. 9D

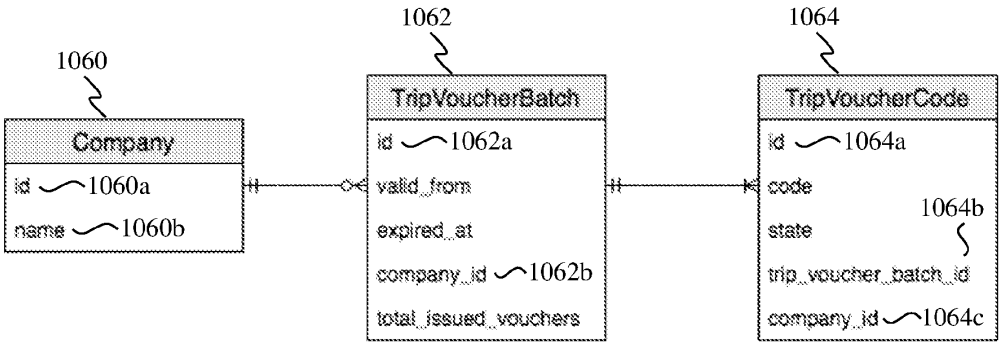
1060
Company
id 1060a
name 1060b
1062
TripVoucherBatch
id 1062a
valid_from
expired_at
company_id 1062b
total_issued_vouchers
1064
TripVoucherCode
id 1064a
code
state
1064b
trip_voucher_batch_id
company_id 1064c

FIG. 10