US 20160086228A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2016/0086228 A1

(43) Pub. Date: Mar. 24, 2016

Babb et al.

(54) METHOD AND SYSTEM FOR DELIVERY OF CONTEXT-SPECIFIC CONTENT TO A MOBILE DEVICE, TRIGGERED BY CHANGES IN THE MOBILE DEVICE'S LOCATION

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(21) Appl. No.: **14/862,148**

(22) Filed: **Sep. 22, 2015**

Related U.S. Application Data

(60) Provisional application No. 62/216,358, filed on Sep. 9, 2015, provisional application No. 62/053,783, filed on Sep. 22, 2014, provisional application No. 62/053,779, filed on Sep. 22, 2014.

Publication Classification

(51) **Int. Cl.**

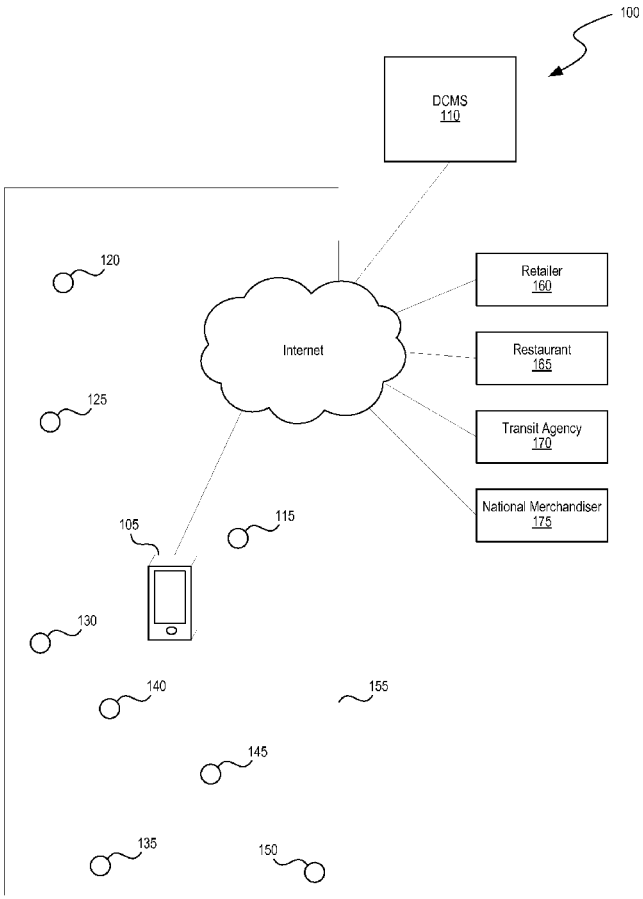
G06Q 30/02	(2006.01)
H04W 4/00	(2006.01)
H04W 4/02	(2006.01)

(52) **U.S. Cl.**

CPC ***G06Q 30/0267*** (2013.01); ***H04W 4/021*** (2013.01); ***H04W 4/008*** (2013.01)

(57) **ABSTRACT**

Systems and methods for associating and delivering context-aware content to mobile devices via a programmable trigger that is based upon changes in the mobile device's location. A user's mobile device can interact with trigger-based tracking devices (e.g., Bluetooth beacons, NFC, etc.) which provides location information to the user's mobile device, such location information being relative to the tracking device. Embodiments of the present disclosure also comprise a server that delivers targeted content (e.g., text, graphics, audio, video, etc.) to mobile devices when a user is at a certain geographical location. The content delivered is associated with a context of the user's location which is based in part on the location information received relative to the tracking device. In some embodiments, the content delivery does not require a separate mobile application for the content provider but can be embedded inside transit-related information of a mobile application of a transit agency.



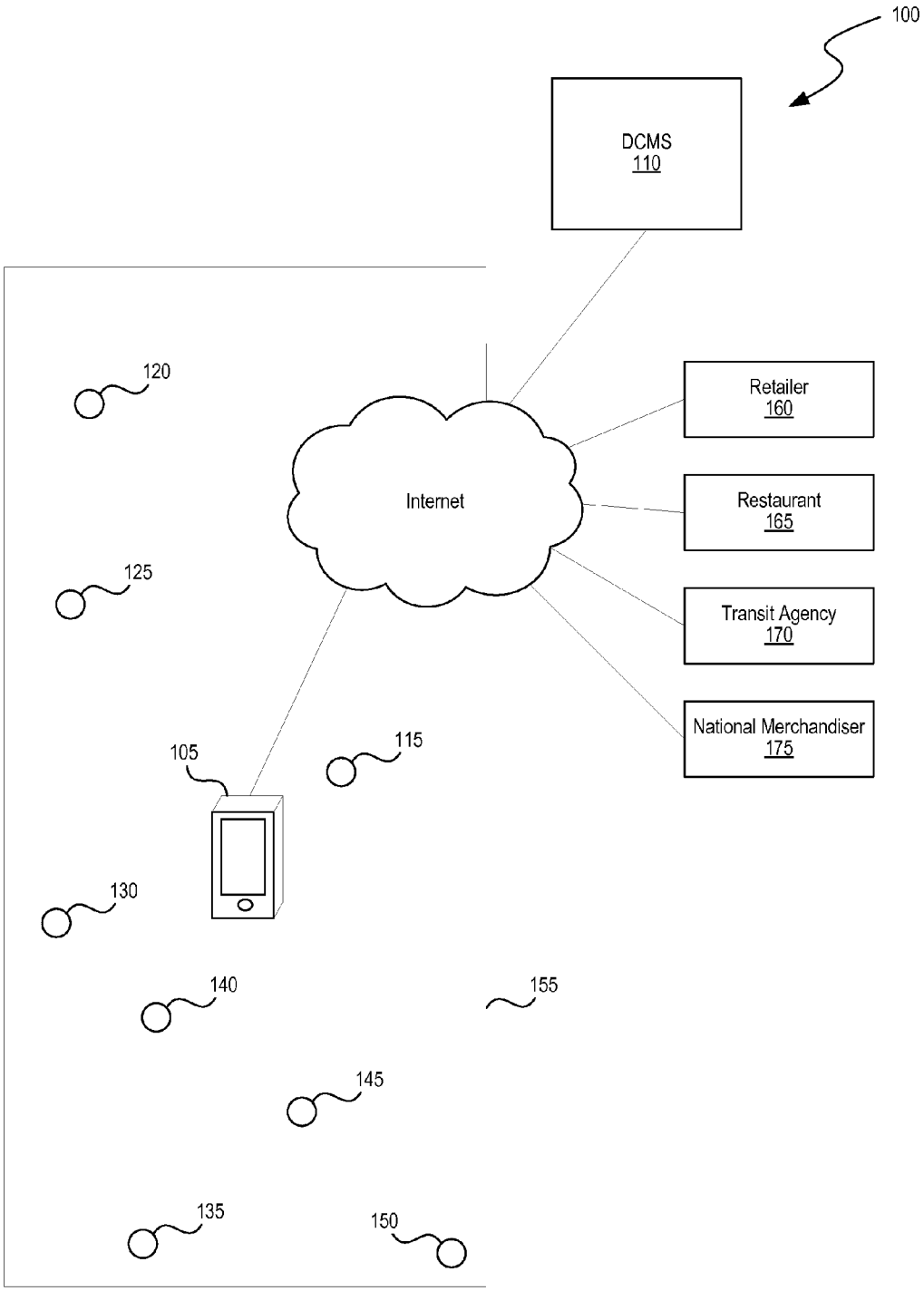

100
DCMS
110
120
Internet
Retailer
160
Restaurant
165
125
Transit Agency
170
National Merchandiser
175
105
115
130
140
155
145
135
150

FIG. 1A

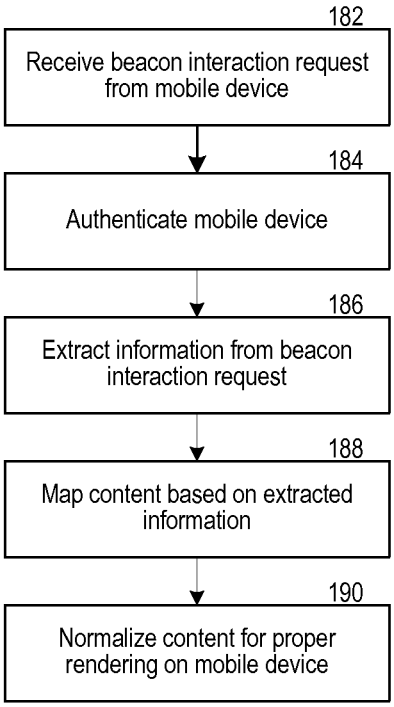

182
Receive beacon interaction request from mobile device
184
Authenticate mobile device
186
Extract information from beacon interaction request
188
Map content based on extracted information
190
Normalize content for proper rendering on mobile device

FIG. 1B

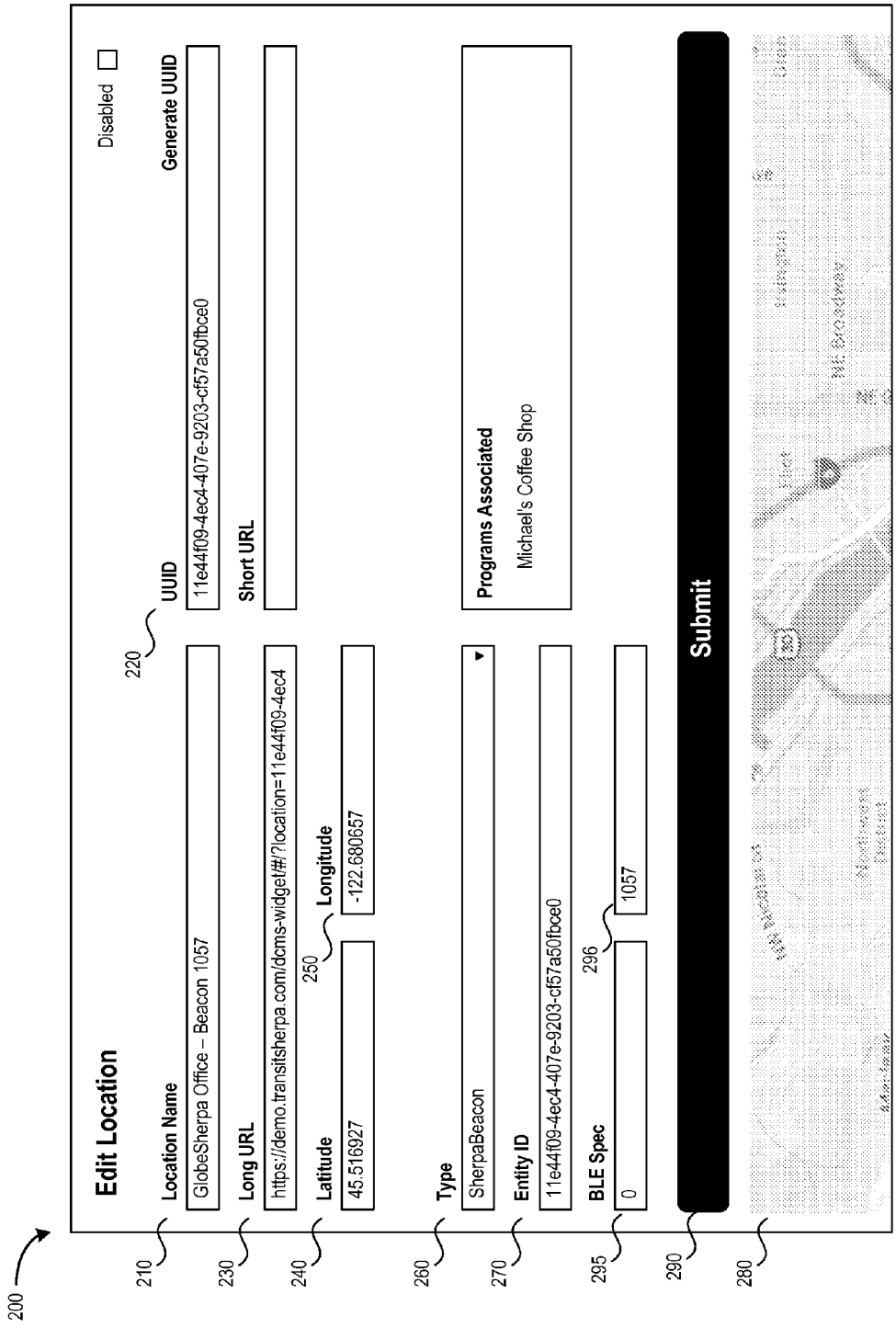

200
Edit Location
Disabled
210
Location Name
GlobeSherpa Office – Beacon 1057
220
UUID
11e44f09-4ec4-407e-9203-cf57a50fbce0
Generate UUID
230
Long URL
https://demo.transitsherpa.com/dcms-widget/#/?location=11e44f09-4ec4
Short URL
240
Latitude
45.516927
250
Longitude
-122.680657
260
Type
SherpaBeacon
270
Entity ID
11e44f09-4ec4-407e-9203-cf57a50fbce0
Programs Associated
Michael's Coffee Shop
295
BLE Spec
0
296
1057
290
Submit
280

FIG. 2

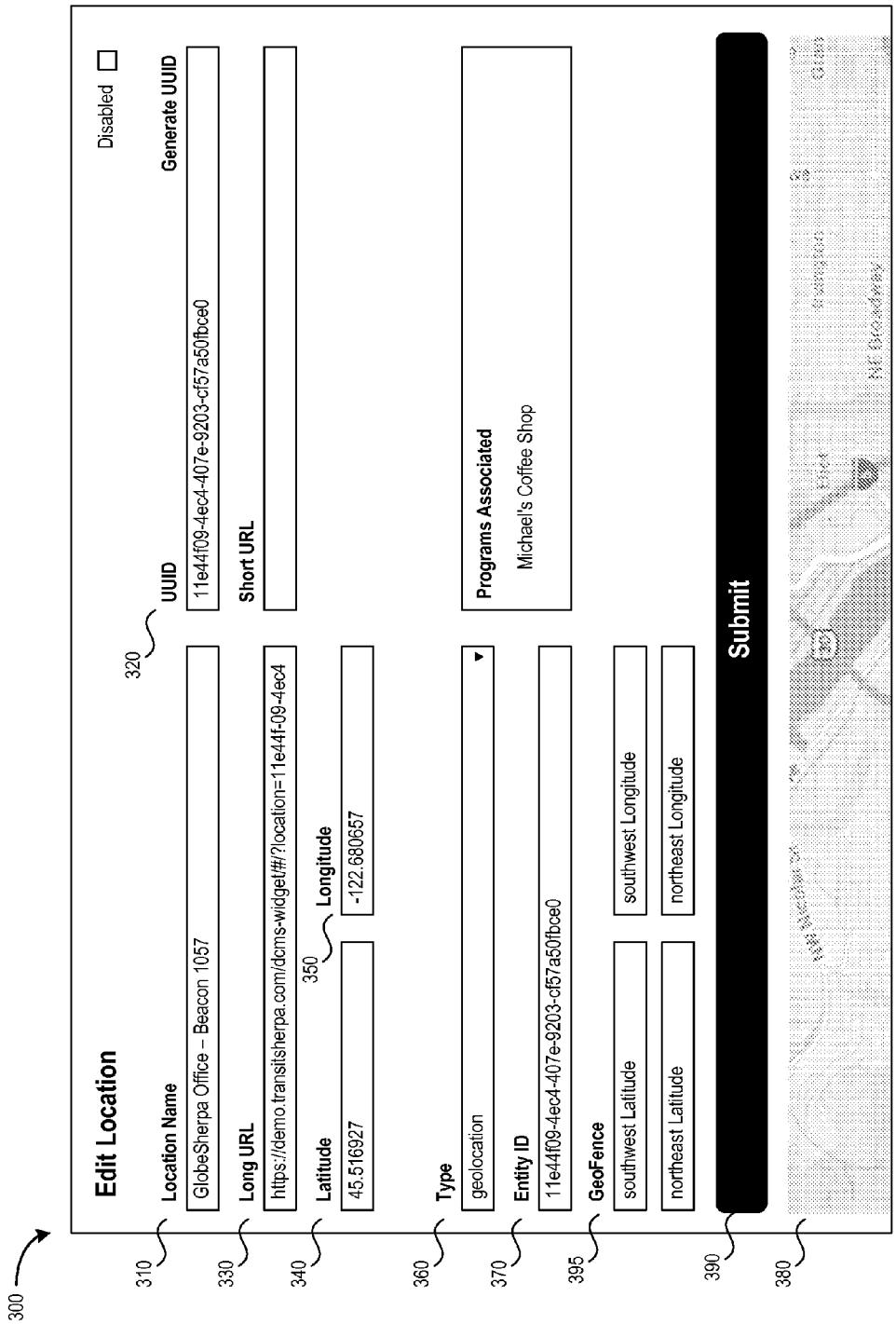

300
Edit Location
Disabled
310
Location Name
GlobeSherpa Office – Beacon 1057
320
UUID
11e44f09-4ec4-407e-9203-cf57a50fbce0
Generate UUID
330
Long URL
https://demo.transitsherpa.com/dcms-widget/#/?location=11e44f-09-4ec4
Short URL
340
Latitude
45.516927
350
Longitude
-122.680657
360
Type
geolocation
370
Entity ID
11e44f09-4ec4-407e-9203-cf57a50fbce0
Programs Associated
Michael's Coffee Shop
395
GeoFence
southwest Latitude
southwest Longitude
northeast Latitude
northeast Longitude
390
Submit
380

FIG. 3

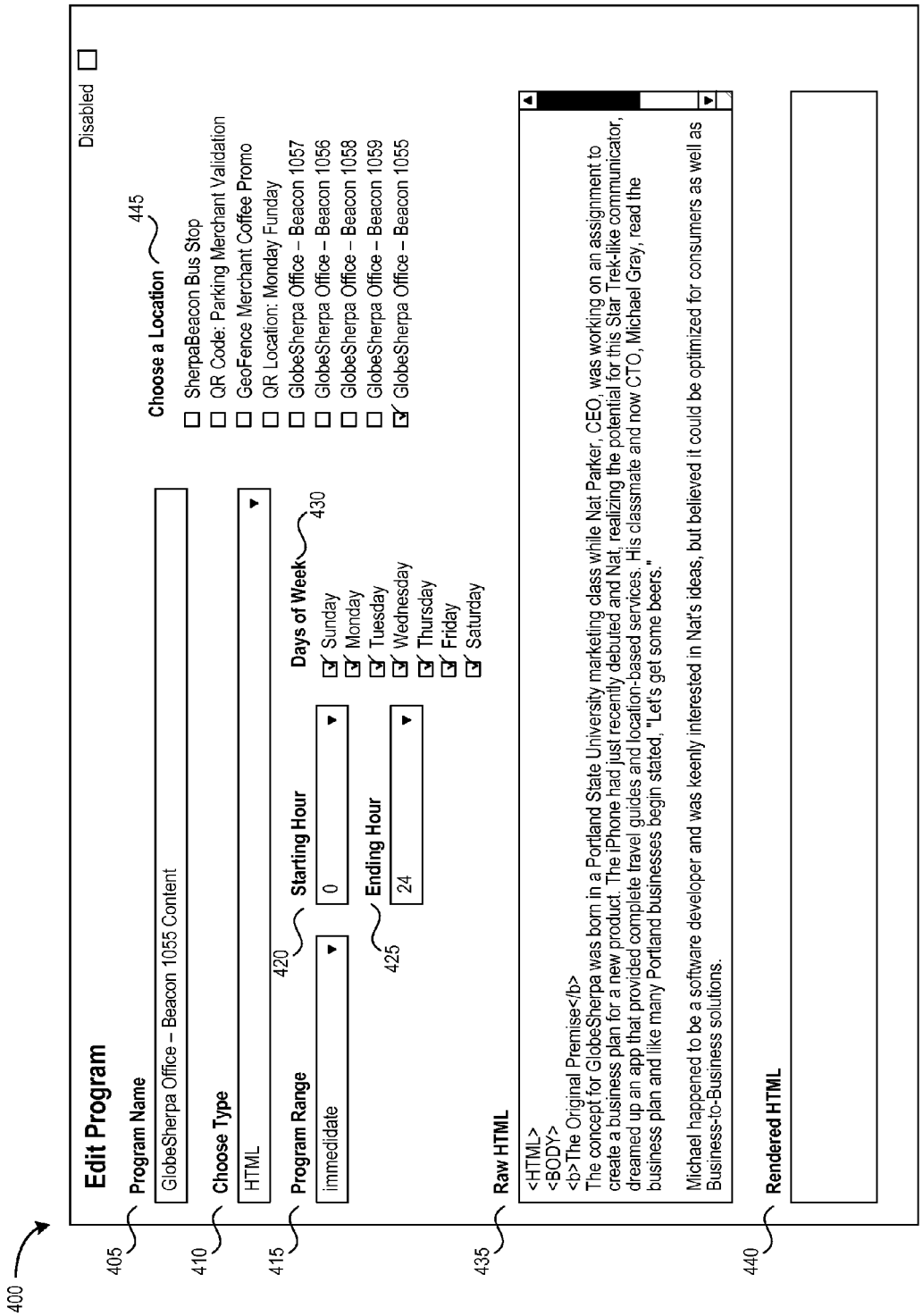

400
Edit Program
Disabled
405
Program Name
GlobeSherpa Office – Beacon 1055 Content
410
Choose Type
HTML
415
Program Range
420
immediate
Starting Hour
0
Ending Hour
425
24
Days of Week
430
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Choose a Location
445
SherpaBeacon Bus Stop
QR Code: Parking Merchant Validation
GeoFence Merchant Coffee Promo
QR Location: Monday Funday
GlobeSherpa Office – Beacon 1057
GlobeSherpa Office – Beacon 1056
GlobeSherpa Office – Beacon 1058
GlobeSherpa Office – Beacon 1059
GlobeSherpa Office – Beacon 1055
435
Raw HTML
<HTML>
<BODY>
The Original Premise
The concept for GlobeSherpa was born in a Portland State University marketing class while Nat Parker, CEO, was working on an assignment to create a business plan for a new product. The iPhone had just recently debuted and Nat, realizing the potential for this Star Trek-like communicator, dreamed up an app that provided complete travel guides and location-based services. His classmate and now CTO, Michael Gray, read the business plan and like many Portland businesses begin stated, "Let's get some beers."
Michael happened to be a software developer and was keenly interested in Nat's ideas, but believed it could be optimized for consumers as well as Business-to-Business solutions.
440
Rendered HTML

FIG. 4

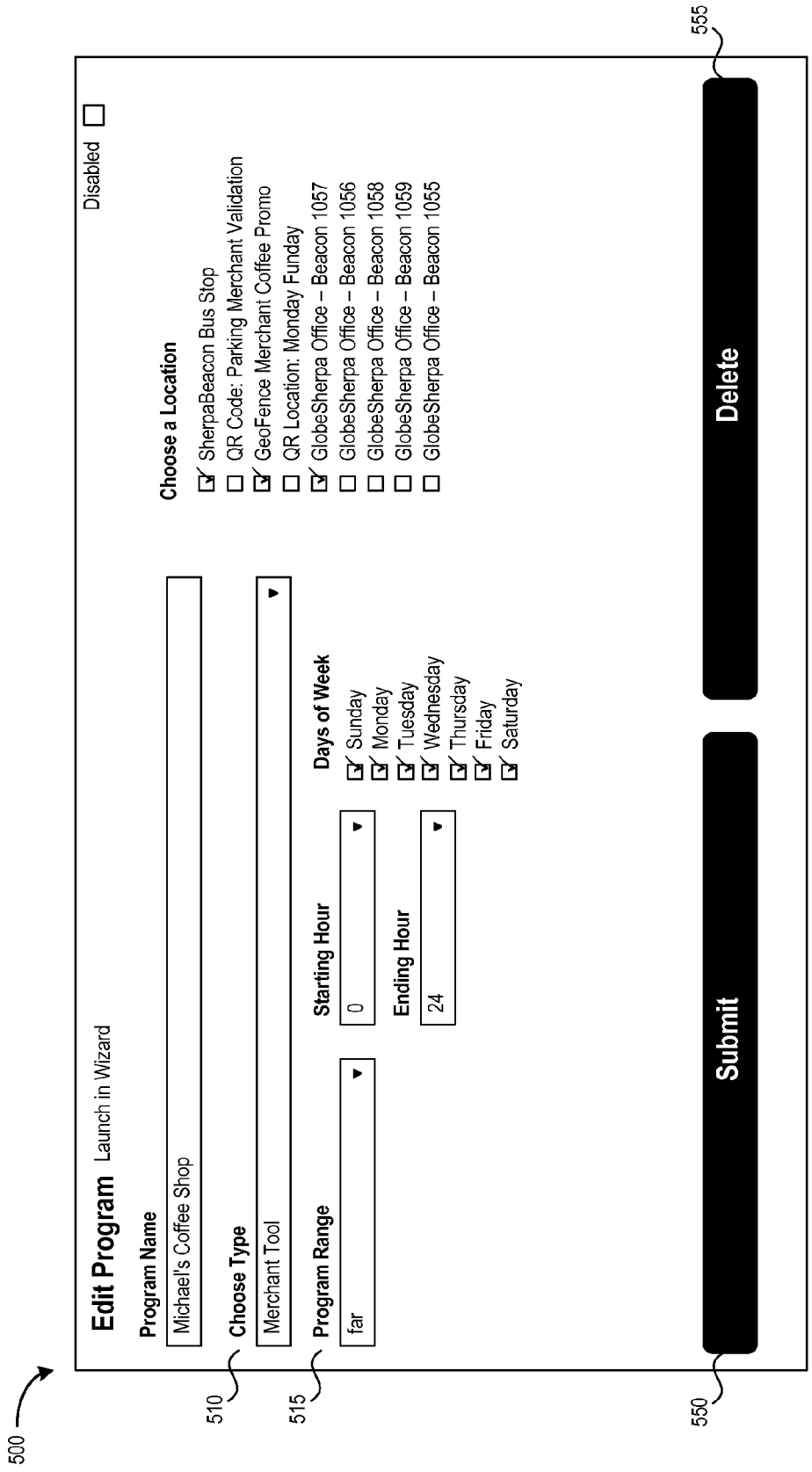

500
Edit Program
Launch in Wizard
Disabled
Program Name
Michael's Coffee Shop
Choose Type
Merchant Tool
Program Range
far
Starting Hour
0
Ending Hour
24
Days of Week
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Choose a Location
SherpaBeacon Bus Stop
QR Code: Parking Merchant Validation
GeoFence Merchant Coffee Promo
QR Location: Monday Funday
GlobeSherpa Office – Beacon 1057
GlobeSherpa Office – Beacon 1056
GlobeSherpa Office – Beacon 1058
GlobeSherpa Office – Beacon 1059
GlobeSherpa Office – Beacon 1055
Submit
Delete
510
515
550
555

FIG. 5

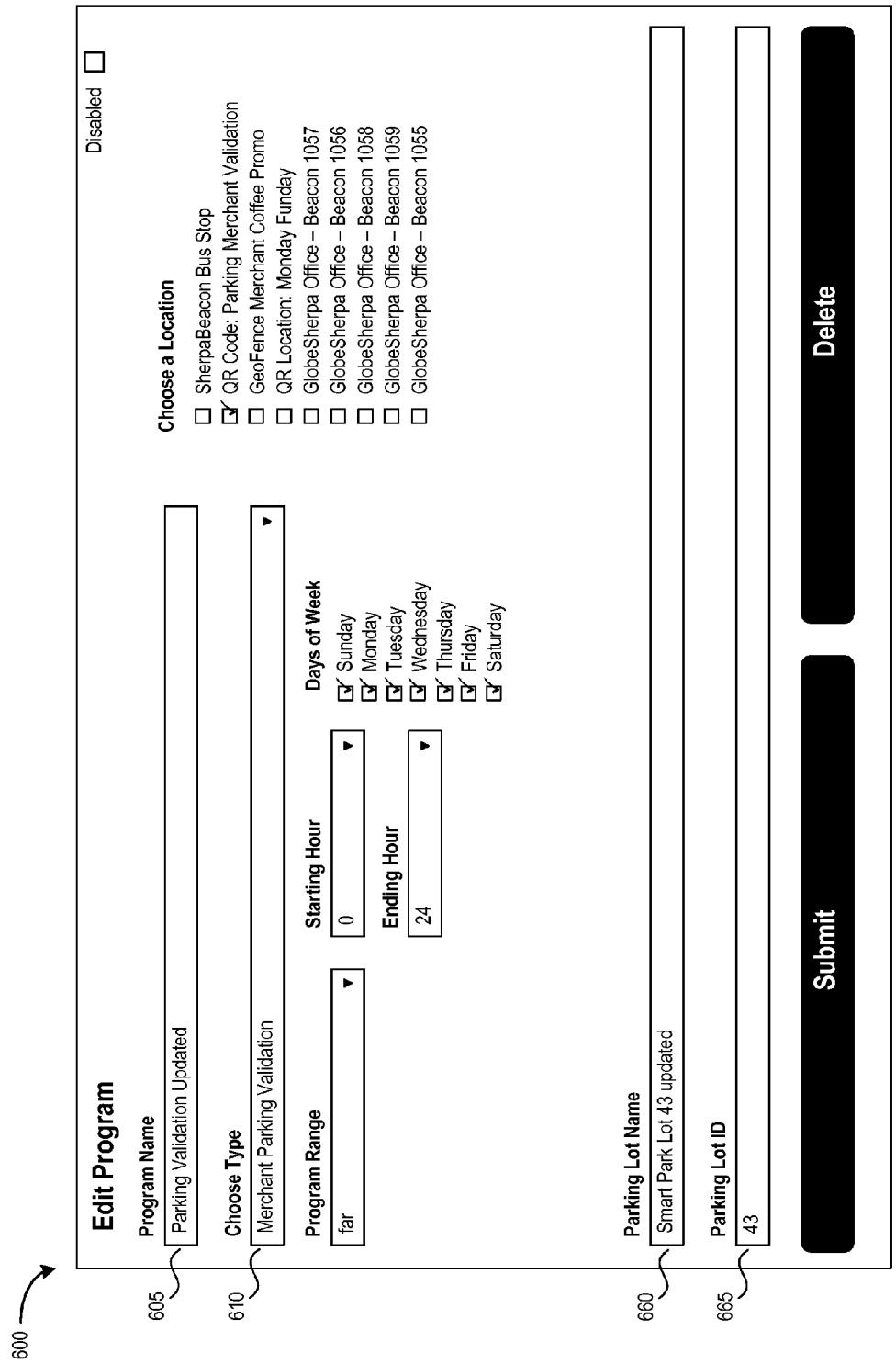

600
Edit Program
Disabled
Program Name
Parking Validation Updated
605
Choose Type
Merchant Parking Validation
610
Program Range
far
Starting Hour
0
Ending Hour
24
Days of Week
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Choose a Location
SherpaBeacon Bus Stop
QR Code: Parking Merchant Validation
GeoFence Merchant Coffee Promo
QR Location: Monday Funday
GlobeSherpa Office – Beacon 1057
GlobeSherpa Office – Beacon 1056
GlobeSherpa Office – Beacon 1058
GlobeSherpa Office – Beacon 1059
GlobeSherpa Office – Beacon 1055
Parking Lot Name
Smart Park Lot 43 updated
660
Parking Lot ID
43
665
Submit
Delete

FIG. 6

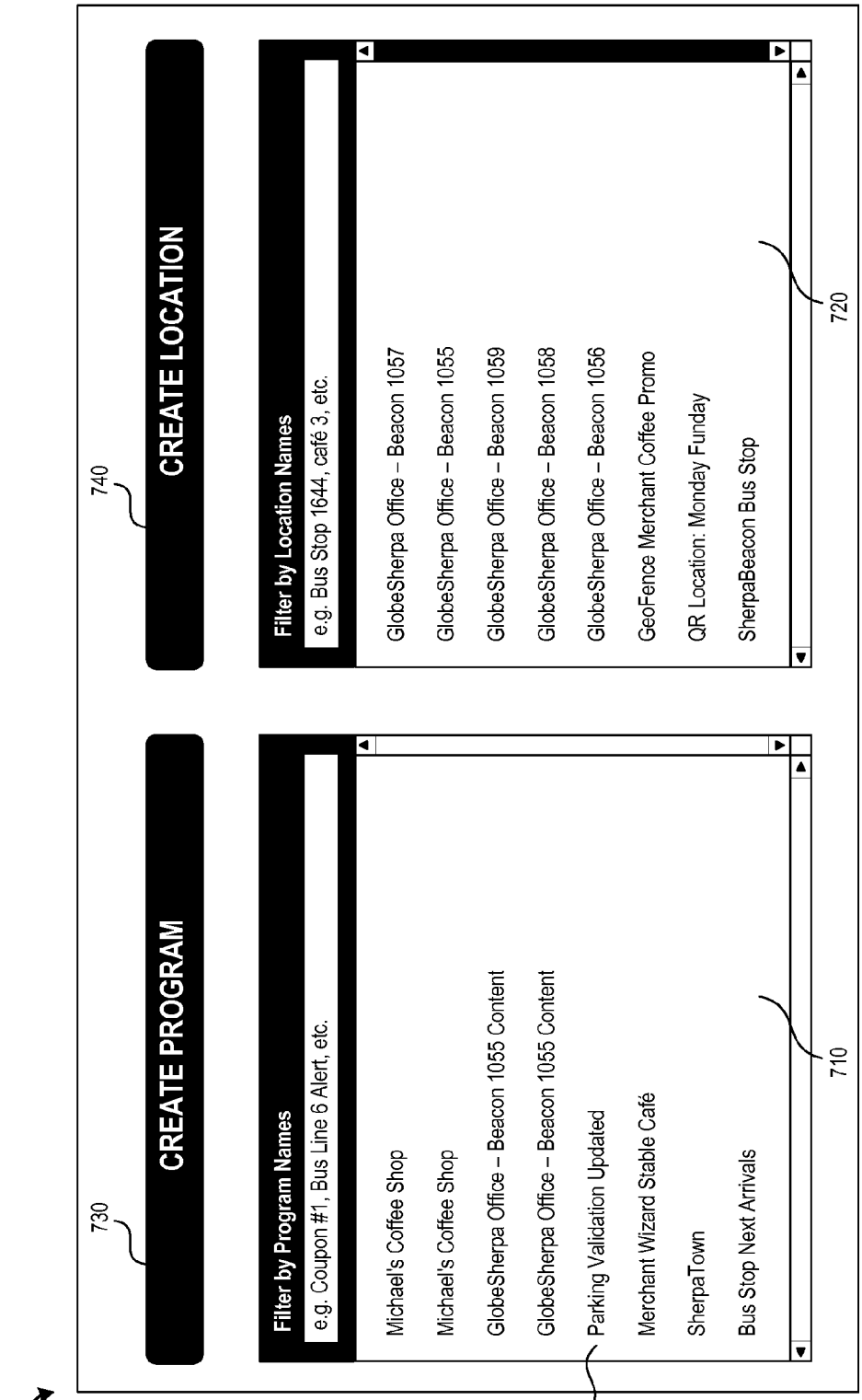

700
730
CREATE PROGRAM
Filter by Program Names
e.g. Coupon #1, Bus Line 6 Alert, etc.
Michael's Coffee Shop
Michael's Coffee Shop
GlobeSherpa Office – Beacon 1055 Content
GlobeSherpa Office – Beacon 1055 Content
Parking Validation Updated
Merchant Wizard Stable Café
SherpaTown
Bus Stop Next Arrivals
710
715
740
CREATE LOCATION
Filter by Location Names
e.g. Bus Stop 1644, café 3, etc.
GlobeSherpa Office – Beacon 1057
GlobeSherpa Office – Beacon 1055
GlobeSherpa Office – Beacon 1059
GlobeSherpa Office – Beacon 1058
GlobeSherpa Office – Beacon 1056
GeoFence Merchant Coffee Promo
QR Location: Monday Funday
SherpaBeacon Bus Stop
720

FIG. 7

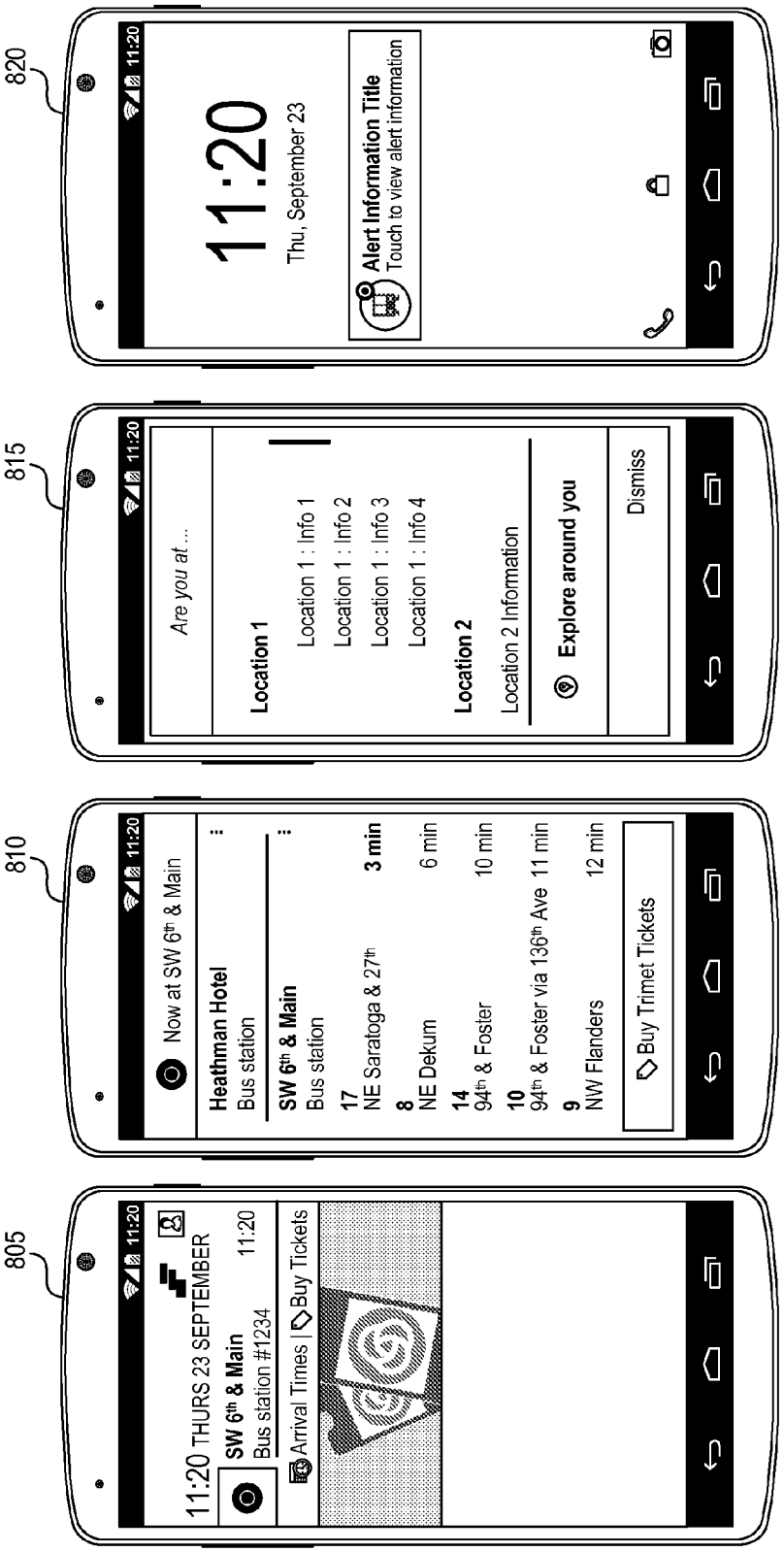


FIG. 8 (continued on next page)

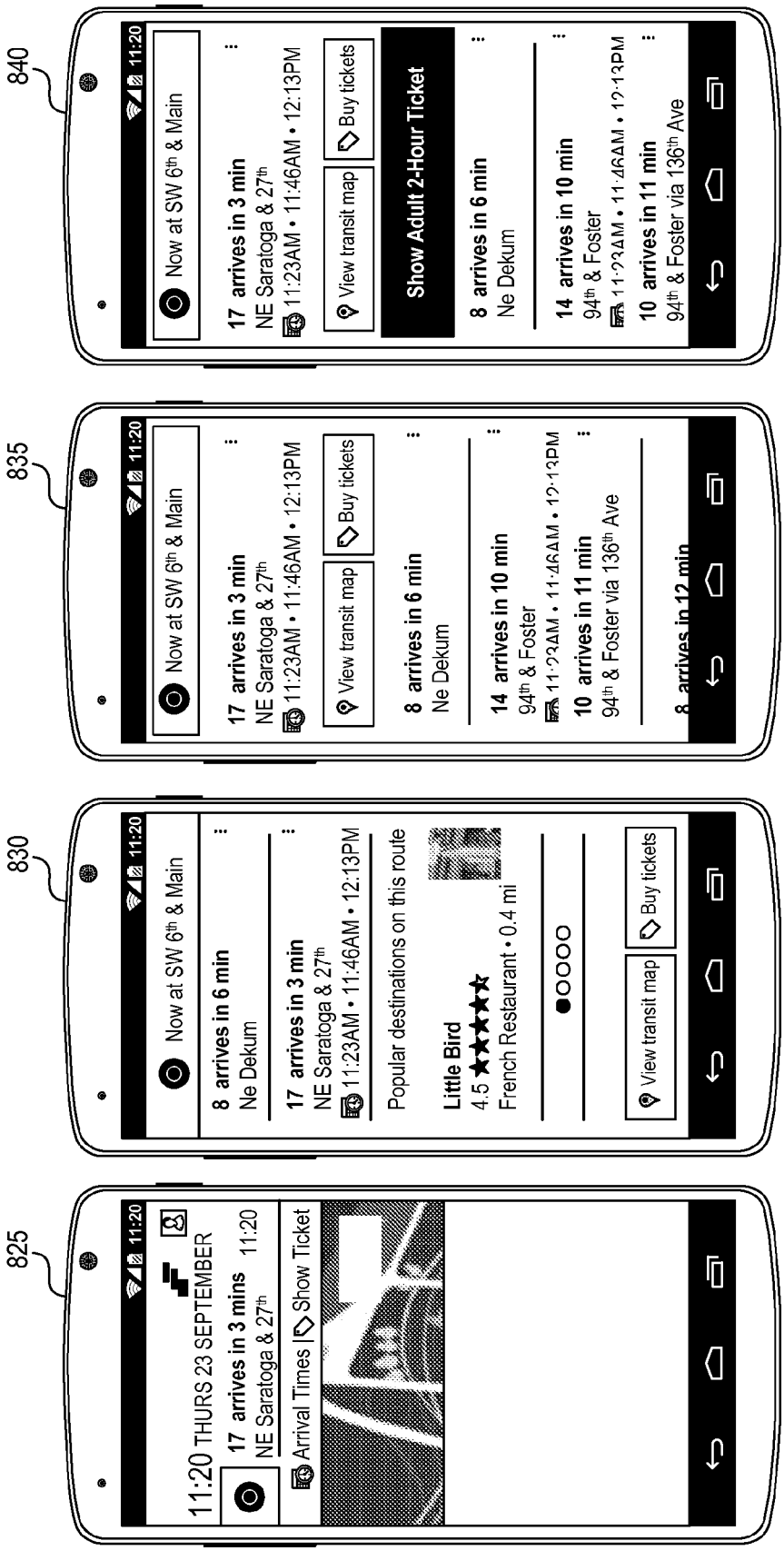


FIG. 8 (continued from previous page)

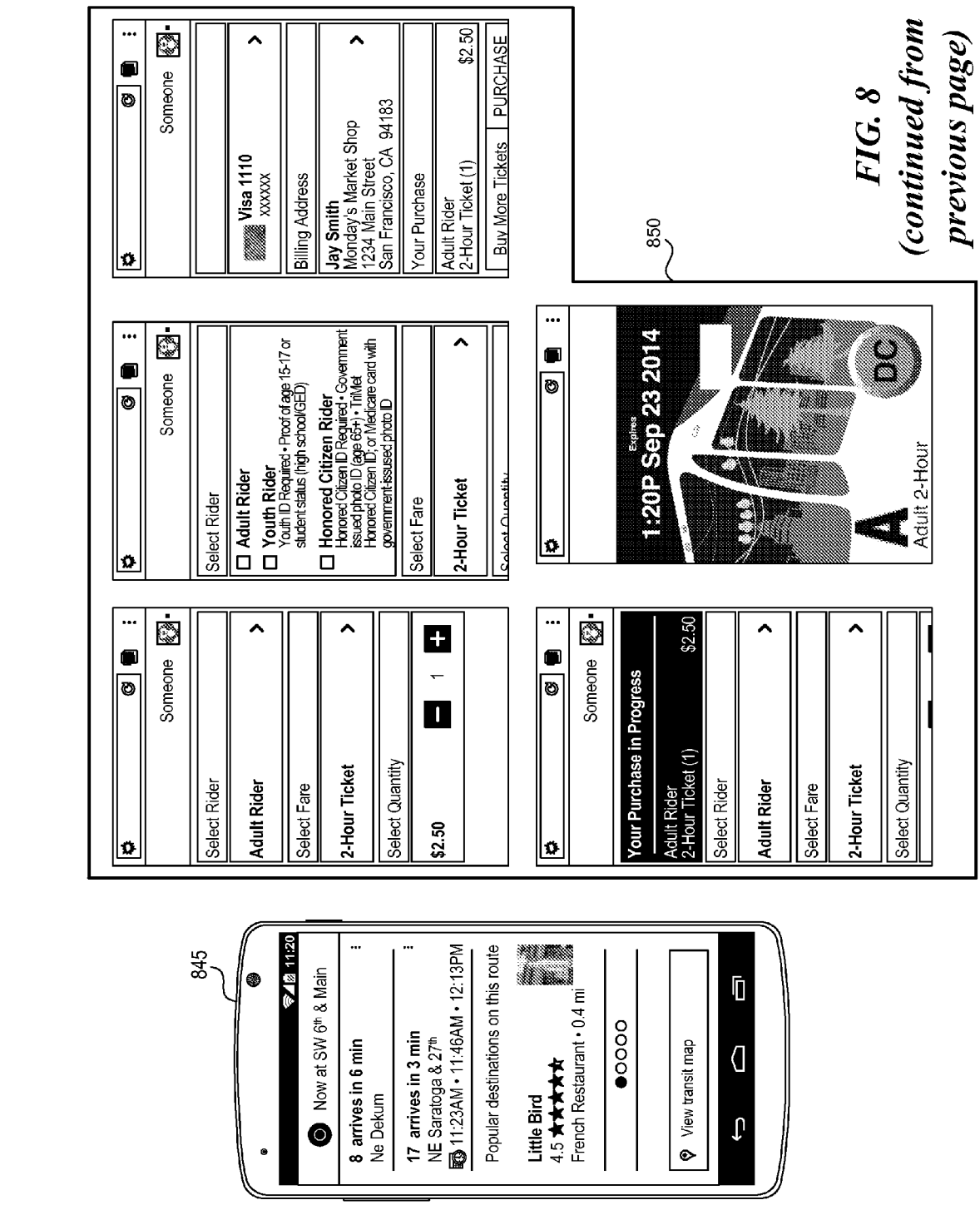


FIG. 8
(continued from previous page)

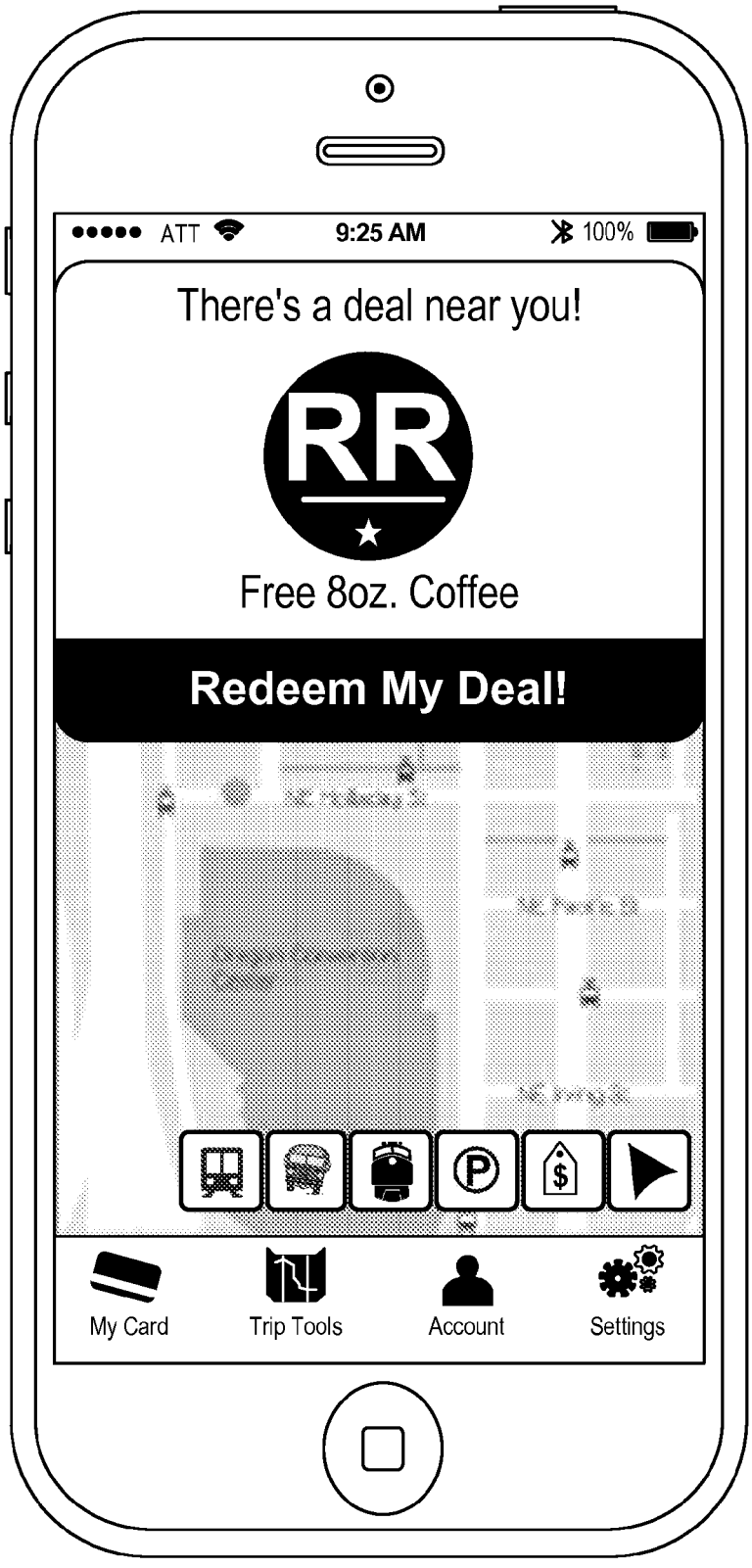

ATT
9:25 AM
100%
There's a deal near you!
RR
Free 8oz. Coffee
Redeem My Deal!
My Card
Trip Tools
Account
Settings

FIG. 9

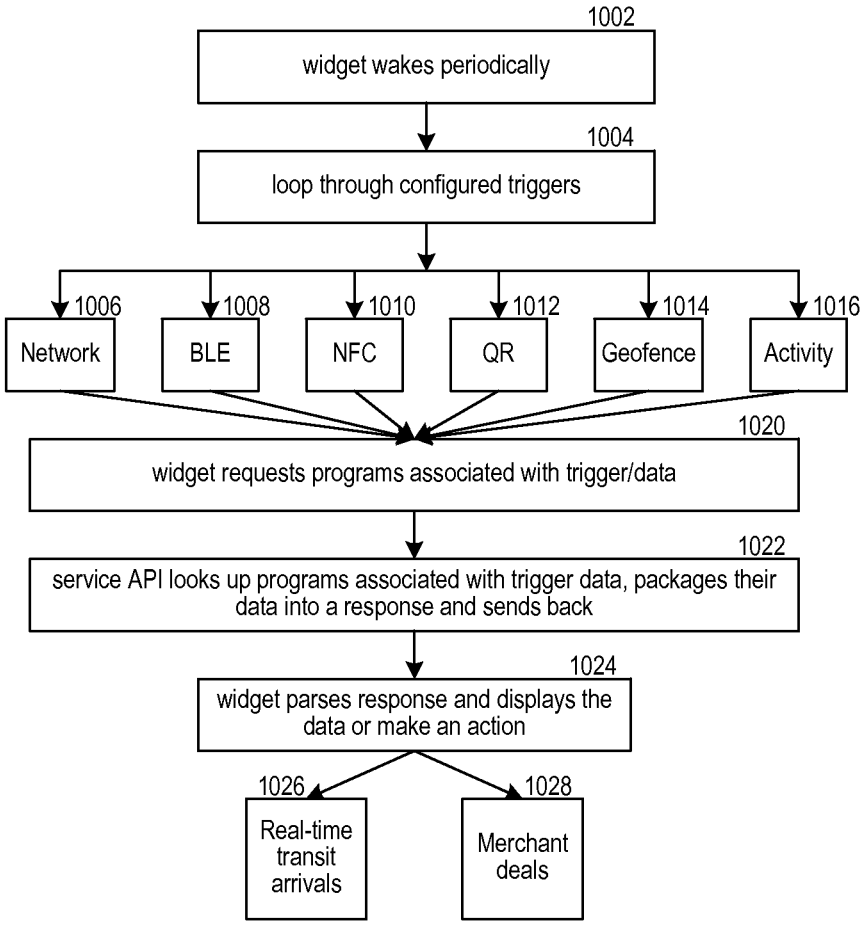

1002
widget wakes periodically
1004
loop through configured triggers
1006
Network
1008
BLE
1010
NFC
1012
QR
1014
Geofence
1016
Activity
1020
widget requests programs associated with trigger/data
1022
service API looks up programs associated with trigger data, packages their data into a response and sends back
1024
widget parses response and displays the data or make an action
1026
Real-time transit arrivals
1028
Merchant deals

FIG. 10

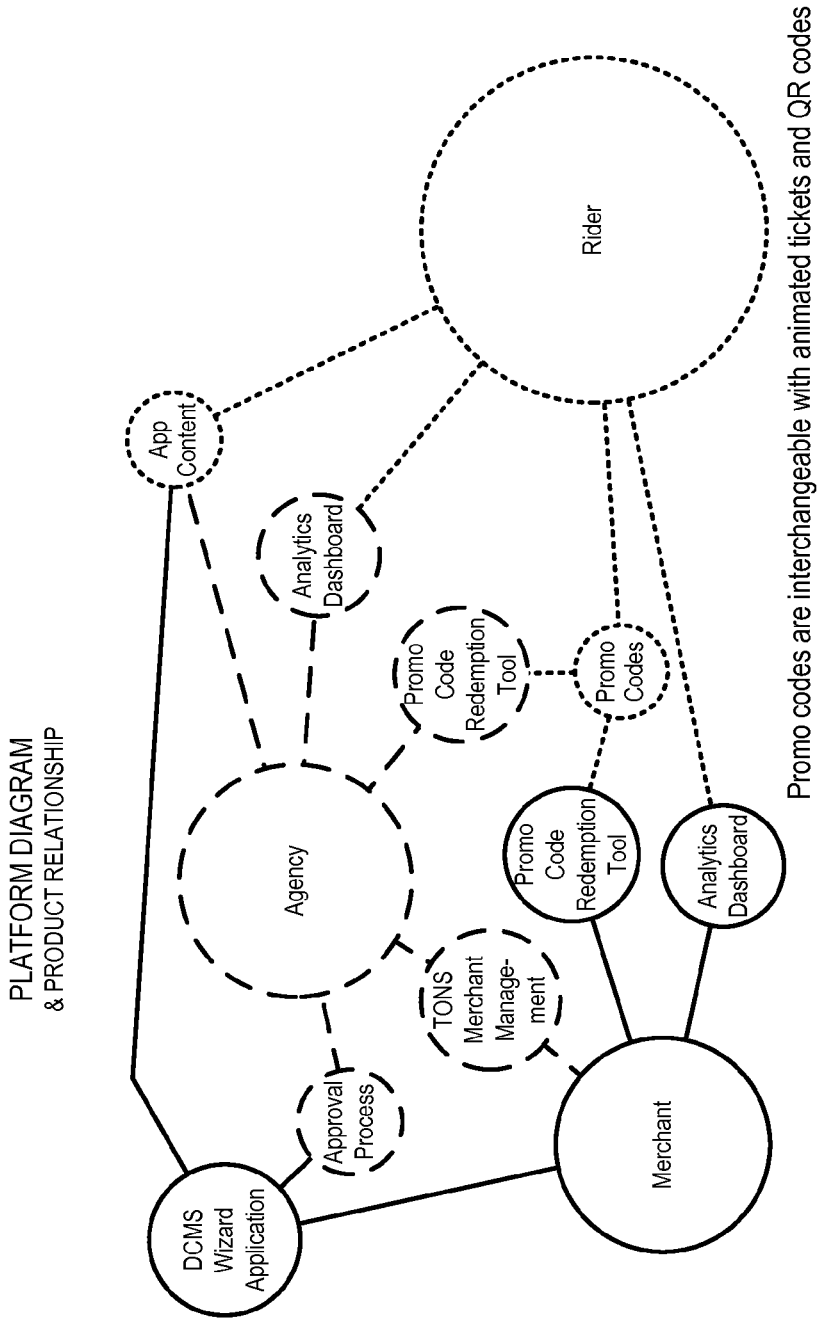
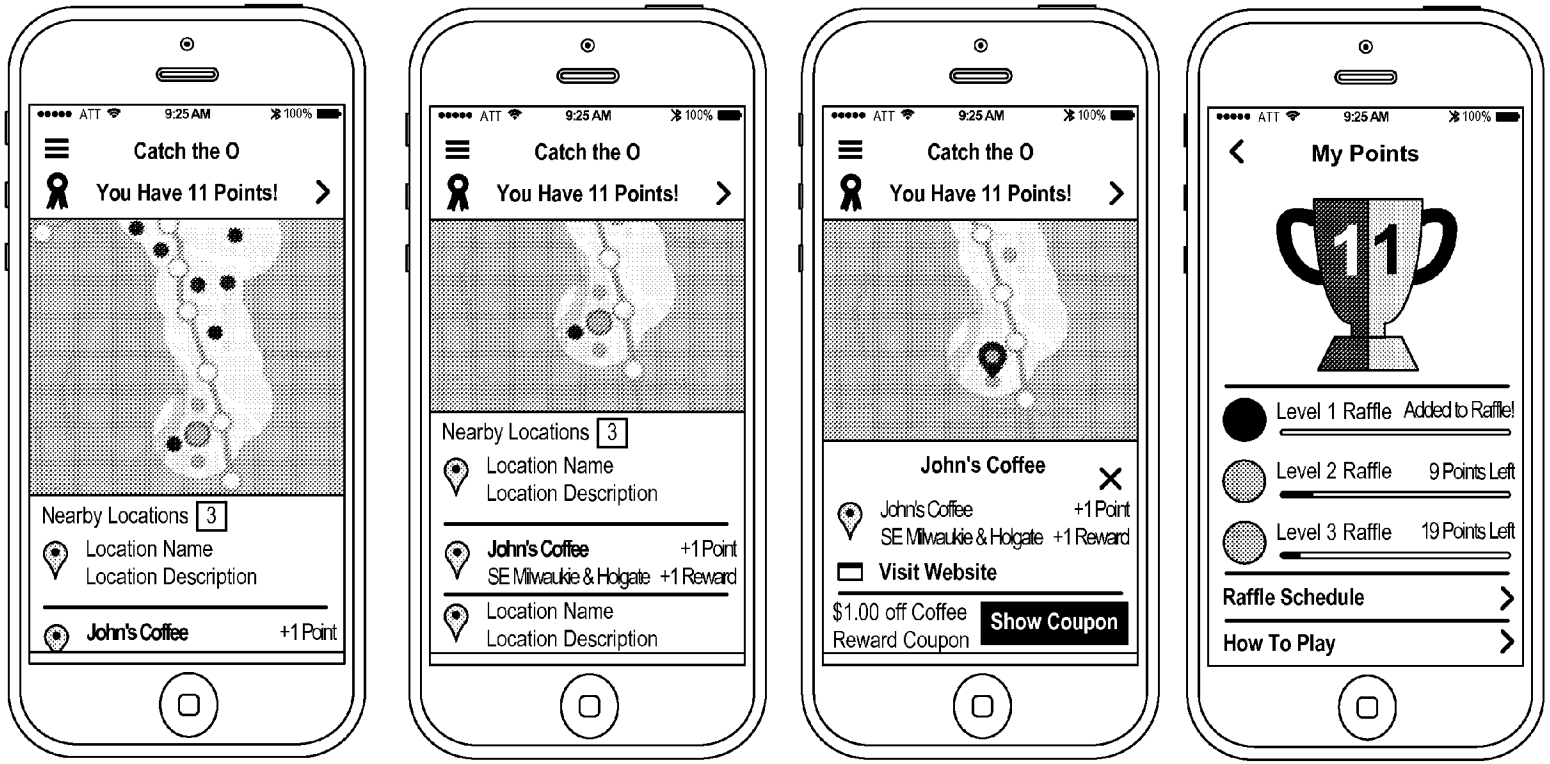

PLATFORM DIAGRAM
& PRODUCT RELATIONSHIP
Rider
App Content
Analytics Dashboard
Promo Code Redemption Tool
Promo Codes
Agency
Promo Code Redemption Tool
Analytics Dashboard
TONS Merchant Manage-ment
Approval Process
DCMS Wizard Application
Merchant
Promo codes are interchangeable with animated tickets and QR codes

FIG. 11

WIREFRAMES



Main Map View
The map begins to reveal the city map around the user as he or she travels. Locations found are indicated on the map and nearby clues are provided below.

Clues
Users may scroll up on the list of clues to reveal more. Clues that have been solved are displayed with the location name and the points awarded.

Found Location
Users can view more information about the found location, visit the website, and view promo code (if offered).

My Points
A user can select his or her points in the Navigation Bar to see an expanded view of the points as well as access the raffle schedule and a tutorial.

FIG. 12

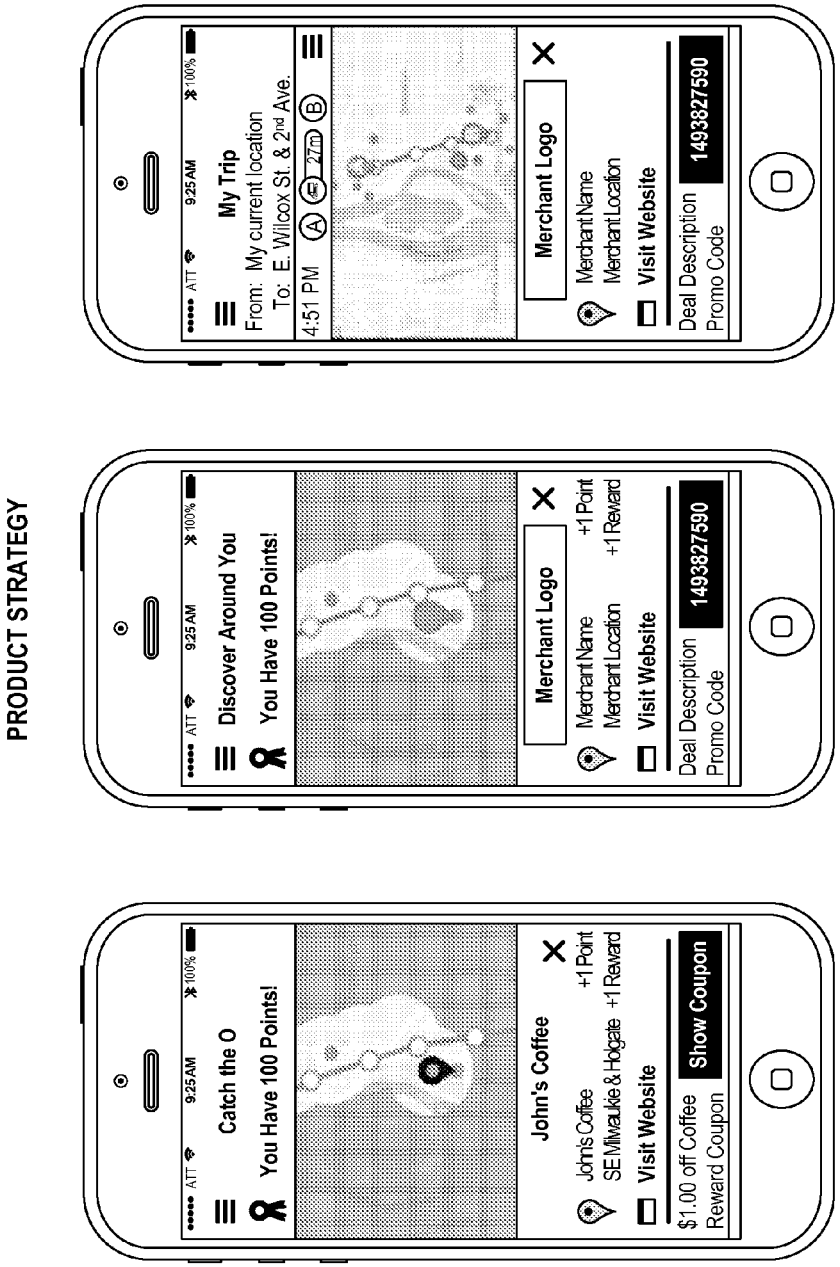

PRODUCT STRATEGY
ATT 9:25AM 100%
Catch the O
You Have 100 Points!
John's Coffee
John's Coffee +1 Point
SE Milwaukie & Hogate +1 Reward
Visit Website
$1.00 off Coffee
Reward Coupon
Show Coupon
Orange Line Game
Designed specifically for TeMet.
ATT 9:25AM 100%
Discover Around You
You Have 100 Points!
Merchant Logo
Merchant Name +1 Point
Merchant Location +1 Reward
Visit Website
Deal Description
Promo Code
1493827590
Replicated Orange Line Game
Generated and ready for any agency to implement into their system and city.
ATT 9:25AM 100%
My Trip
From: My current location
To: E. Wilcox St. & 2nd Ave.
4:51 PM
27m
Merchant Logo
Merchant Name
Merchant Location
Visit Website
Deal Description
Promo Code
1493827590
Integrated Trip Tools
Leverage game UI and integrate into trip tools / trip planning experience.

FIG. 13

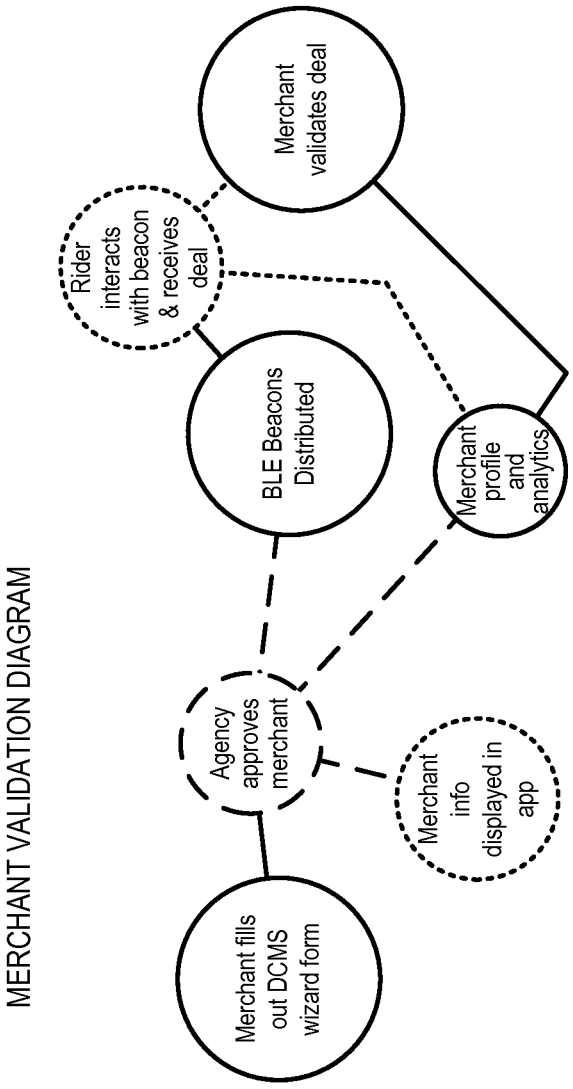
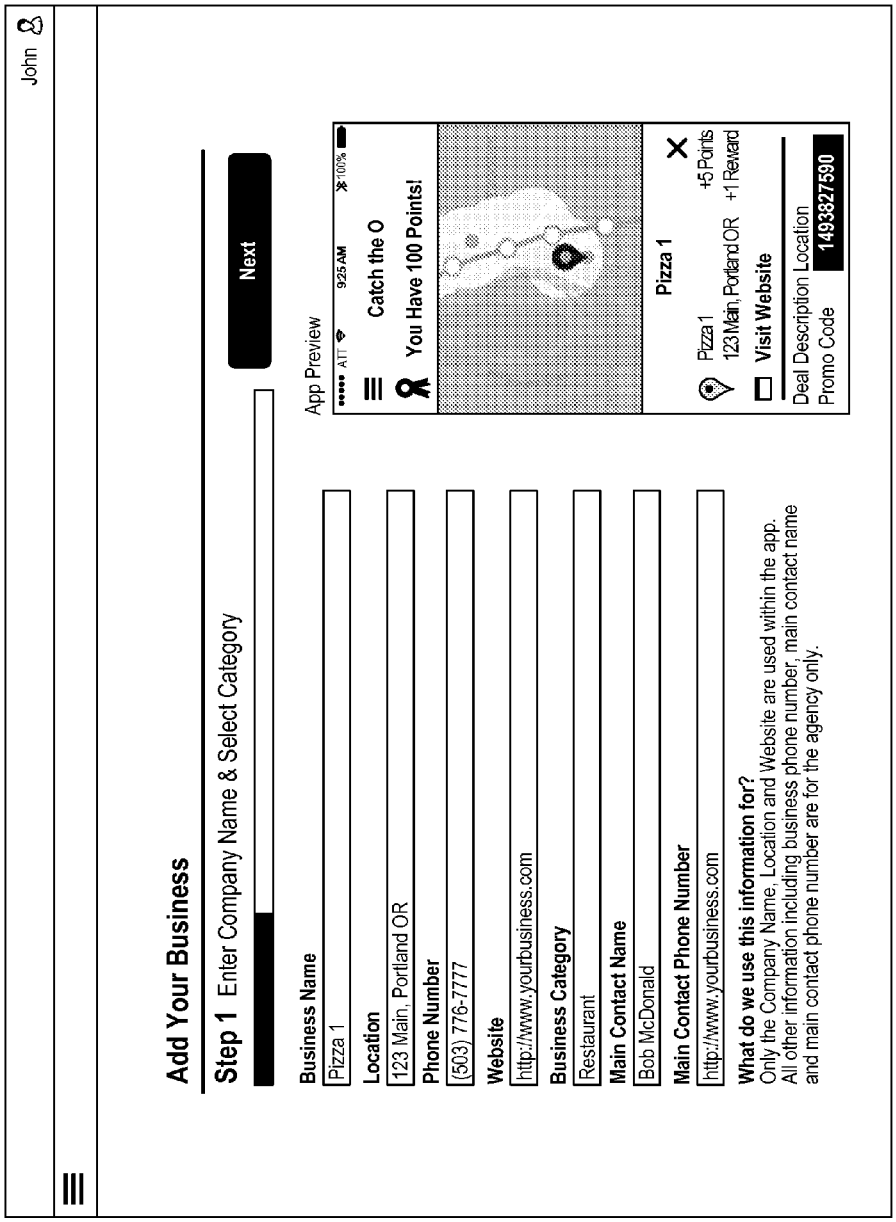

MERCHANT VALIDATION DIAGRAM
Merchant fills out DCMS wizard form
Agency approves merchant
Merchant info displayed in app
BLE Beacons Distributed
Rider interacts with beacon & receives deal
Merchant profile and analytics
Merchant validates deal

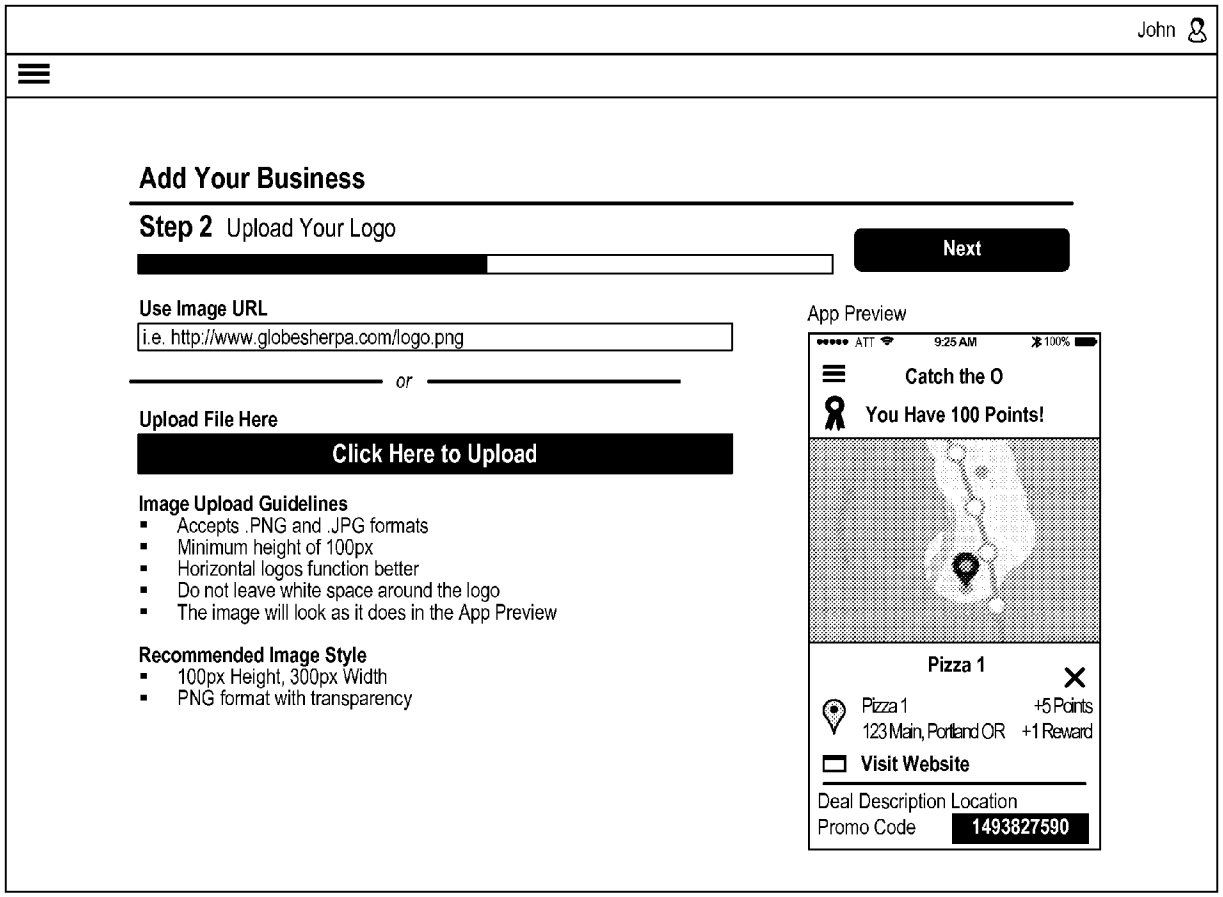
FIG. 14



DCMS Step 1: Users input information that will be displayed in the game as well as in TOMS for agency approval and management. As the user updates the fields, related information is filled in the app preview.

FIG. 15

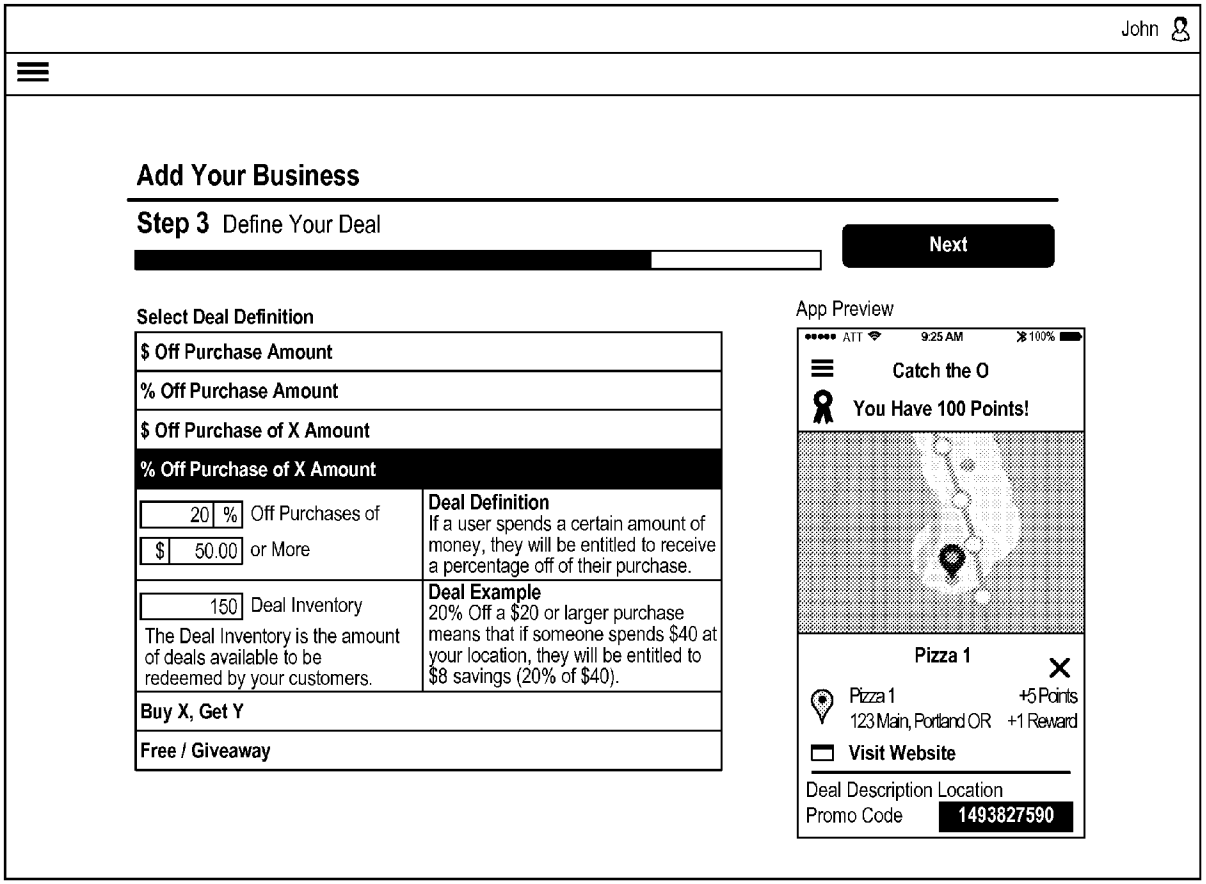
DCMS MERCHANT ONBOARDING



DCMS Step 2: Users upload their logo to be displayed in the app for their deal. They may either use an image URL or upload their own file. There are guidelines and recommended image formats to encourage the best outcome.

FIG. 16

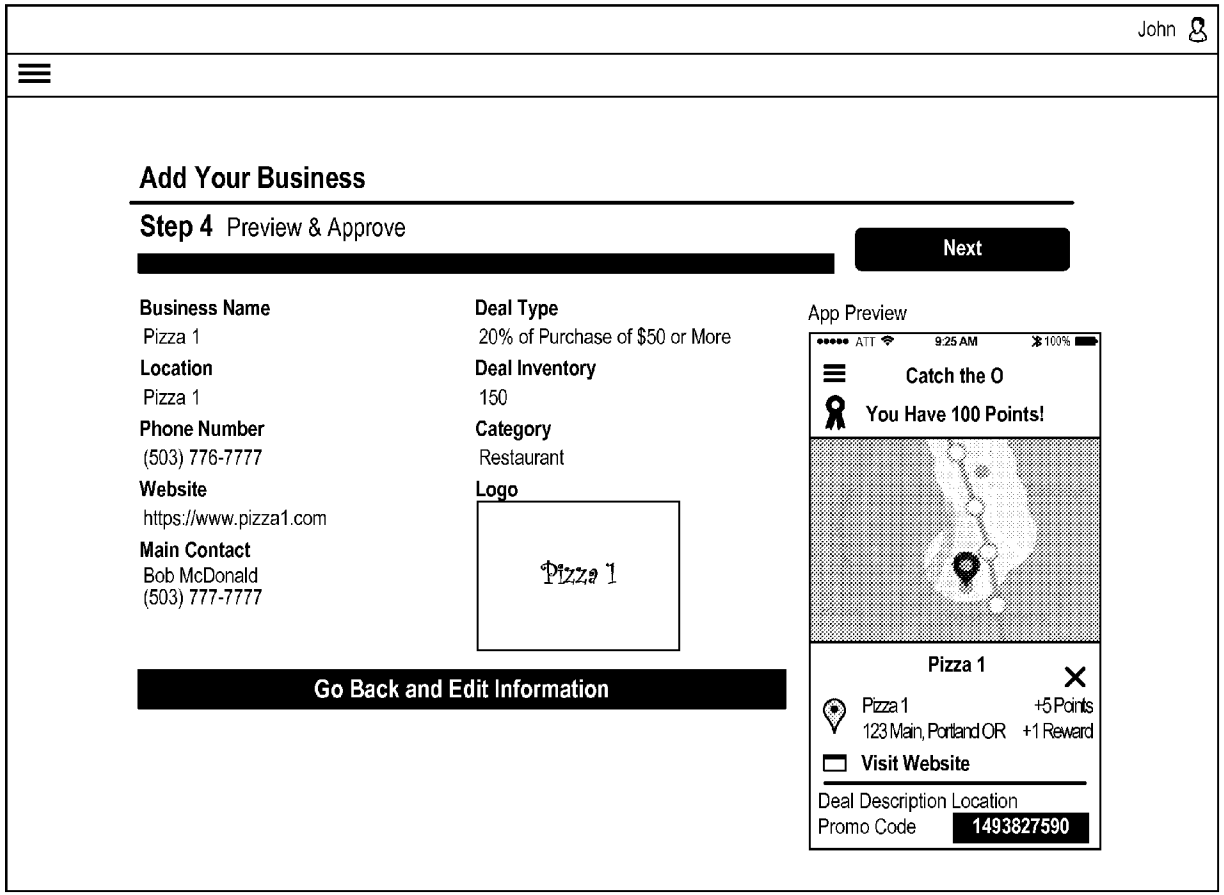
DCMS MERCHANT ONBOARDING



DCMS Step 3: Users select the type of deal they would like to offer in the app as well as the amount of deals to offer. There are definitions and examples to guide this experience. The App Preview above shows a real-time example of how the app will be displayed.

FIG. 17

DCMS MERCHANT ONBOARDING



DCMS Step 4: Users review their information and example of their deal within the app. Users may also go back and edit any incorrect information.

FIG. 18

DCMS MERCHANT APPROVAL

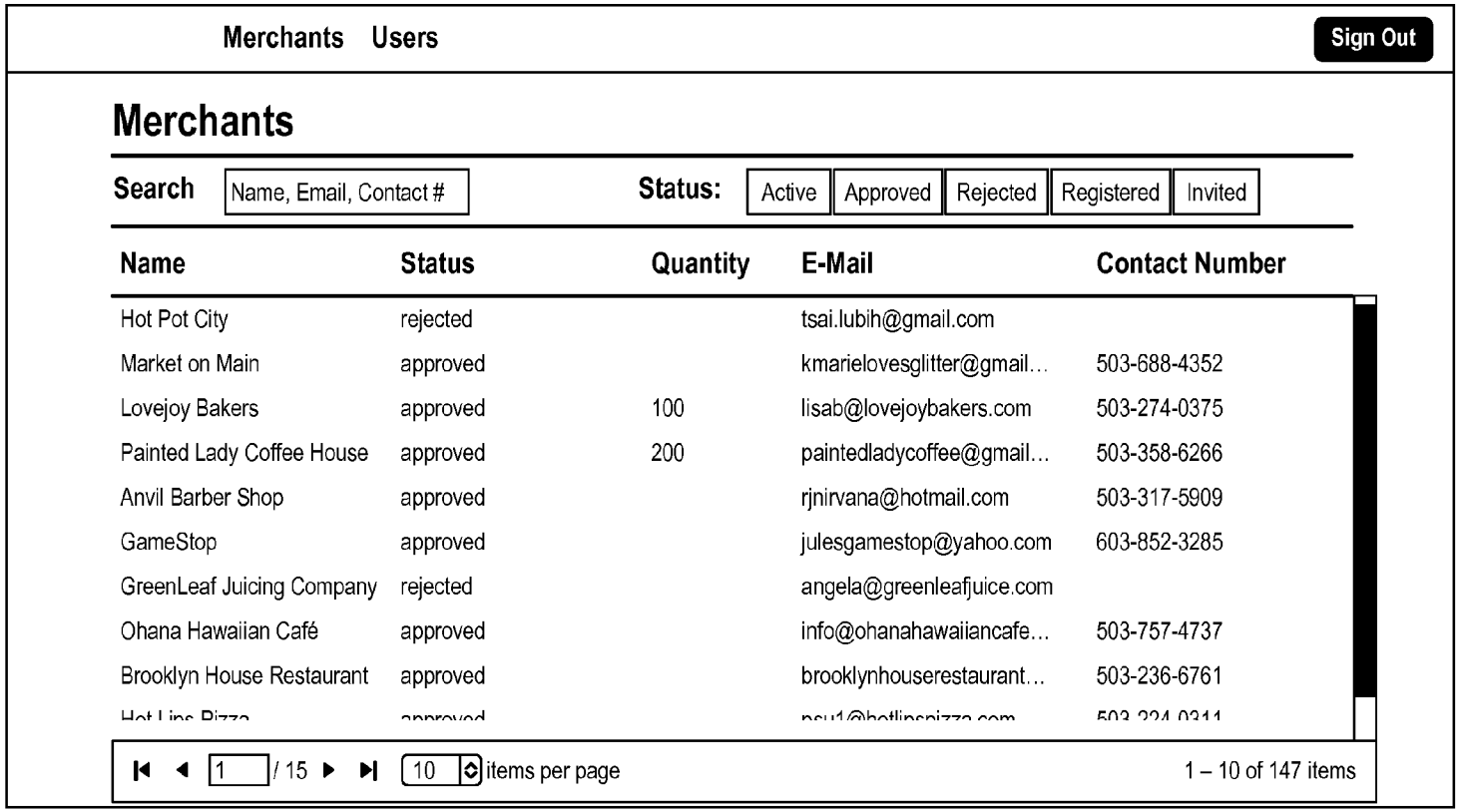
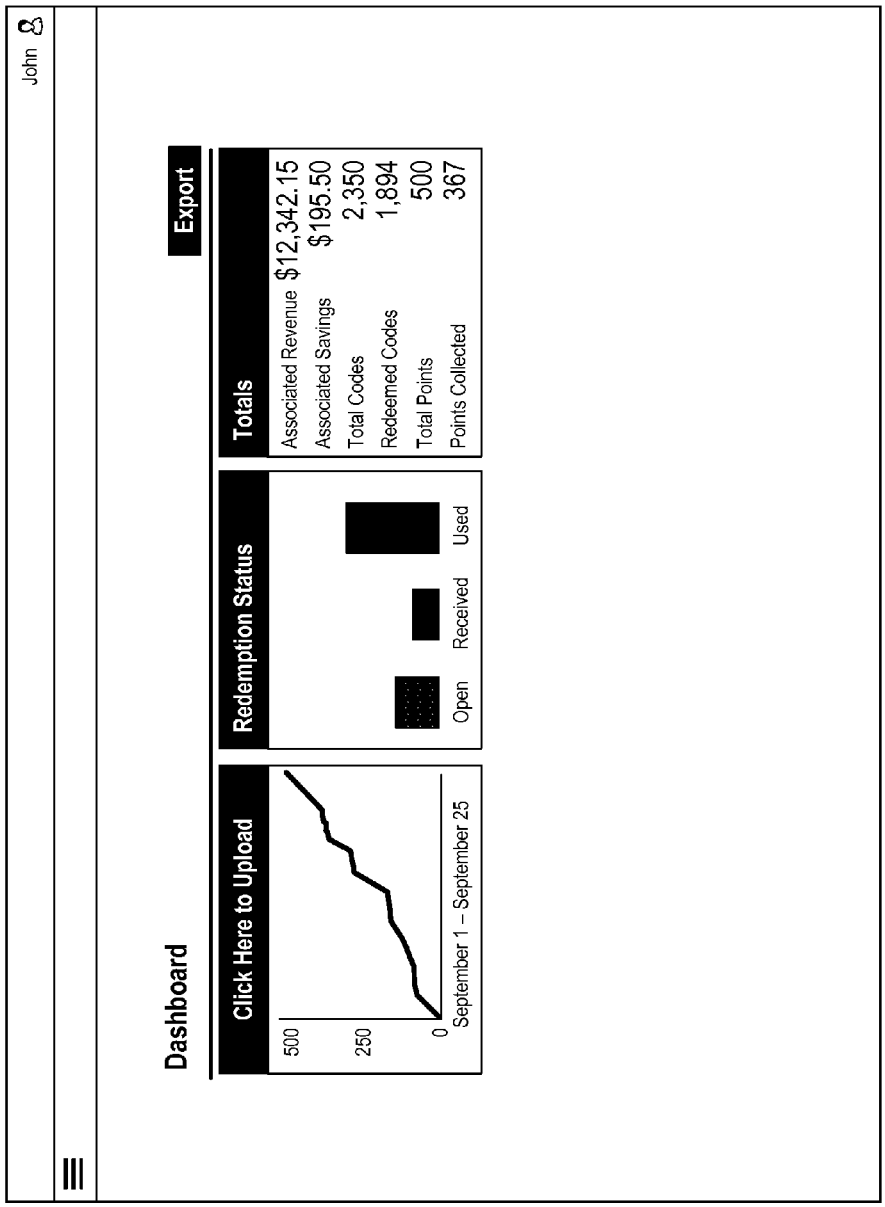


FIG. 19



Agency PMLR Interaction Dashboard: The PMLR Dashboard displays information related to the game, including associated revenue for businesses, redemption code usage, prize level eligibility, and a summary of points collected.

FIG. 20

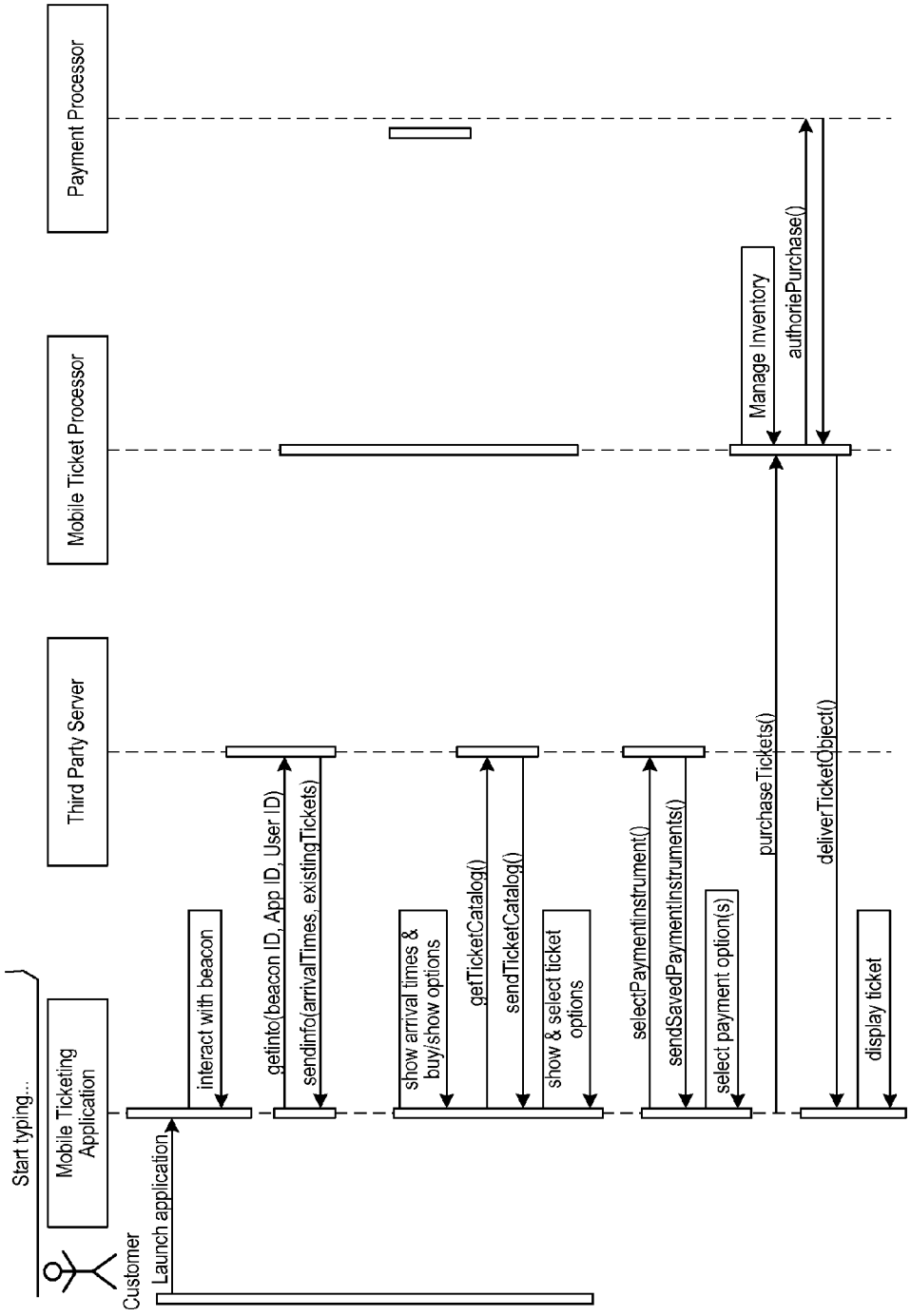

Start typing...
Customer
Launch application
Mobile Ticketing Application
interact with beacon
Third Party Server
getinto(beacon ID, App ID, User ID)
sendinfo(arrivalTimes, existingTickets)
Mobile Ticket Processor
show arrival times & buy/show options
getTicketCatalog()
sendTicketCatalog()
show & select ticket options
selectPaymentInstrument()
sendSavedPaymentInstruments()
select payment option(s)
Manage Inventory
authoriePurchase()
Payment Processor
purchaseTickets()
deliverTicketObject()
display ticket

FIG. 21

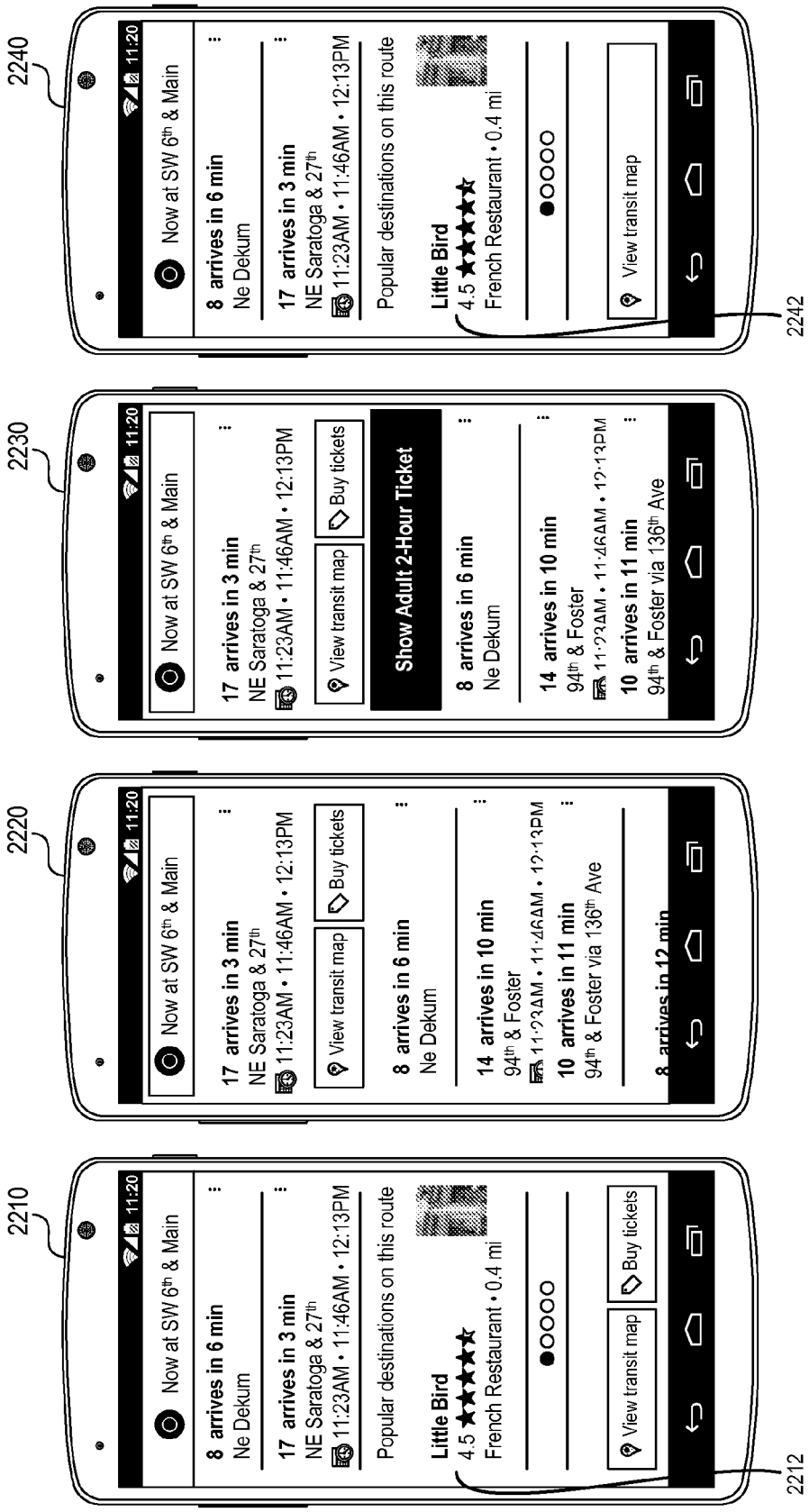


FIG. 22 (continued on next page)

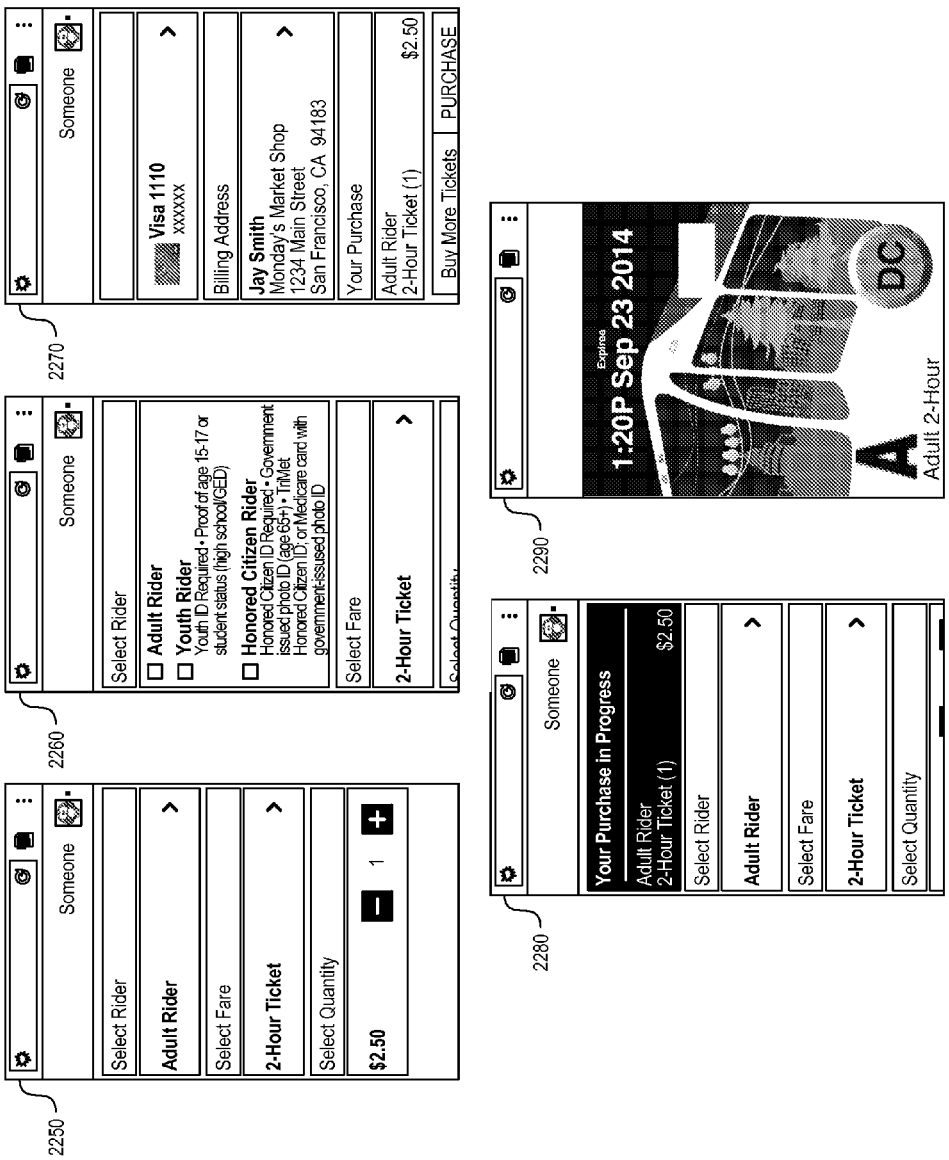


FIG. 22 (continued from previous page)

METHOD AND SYSTEM FOR DELIVERY OF CONTEXT-SPECIFIC CONTENT TO A MOBILE DEVICE, TRIGGERED BY CHANGES IN THE MOBILE DEVICE'S LOCATION

CROSS-REFERENCE TO RELATED PATENT APPLICATIONS

[0001] The present application claims priority to and benefit from U.S. Provisional Patent Application No. 62/216,358 titled "Method And System For Delivery Of Context-Specific Content To A Mobile Device, Triggered By Changes In The Mobile Device's Location" filed on Sep. 9, 2015, U.S. Provisional Patent Application No. 62/053,783 titled "Method And System For Delivery Of Context-Specific Content To A Mobile Device, Triggered By Changes In The Mobile Device's Location" filed on Sep. 22, 2014, and U.S. Provisional Patent Application No. 62/053,779 titled "Method And System For Mobile Ticketing Via A Third Part Interface" filed on Sep. 22, 2014, the entire content of each of which is herein expressly incorporated by reference. This disclosure incorporates by reference the disclosure provided in U.S. Patent Publication No. 2014/0095227. The disclosure in U.S. Patent Publication No. 2014/0095227 is exemplary of systems or methods for visually validated ticketing that can be enhanced in accordance with the disclosure provided herein.

TECHNICAL FIELD

[0002] Embodiments of the present disclosure generally relate to systems and methods for a platform that provides context-specific content to mobile devices of end users. In particular, embodiments of the present disclosure relate to systems and methods for associating and delivering context-aware content to mobile devices via a programmable trigger that is based upon changes in the mobile device's location.

BACKGROUND

[0003] Traditionally, users of mobile devices who wish to obtain information relating to some topic of interest have to send requests to an information provider to receive information on their mobile devices. The requested information might pertain to a user's geographical location. For example, a user may request transit-related information to learn when the next train or bus will arrive. Upon receiving the user's request for transit-related information, the relevant transit agency or third party information provider responds to the user by transmitting the requested information. As another example, a user might use a mobile device to seek information about an establishment, such as a store or restaurant, located in the user's vicinity. The user might be interested in checking for information, such as hours of operation, or for advertisements, such as coupons or discounts. The user can operate the mobile device to access the establishment's website and then navigate the website to receive the desired information or advertisement.

[0004] It would be desirable to facilitate the user's ability to retrieve information easily and quickly, without having to specifically request it. This can include transit-related information and context-specific content relevant to a user's geographical location.

SUMMARY

[0005] The following discloses a method and apparatus for delivering targeted marketing content to users by a server. Information is received from a user's mobile device in response to a trigger. The information identifies a context with respect to a tracking device located external to the user's mobile device that generated the trigger. At least one marketing campaign program is identified in the server that corresponds to the tracking device. Conditions of the identified marketing campaign program are applied to the context received from the user's mobile device. Based upon the application of the conditions, targeted marketing content associated with the identified marketing campaign program is selectively provided to the user's mobile device.

BRIEF DESCRIPTION OF DRAWINGS

[0006] FIG. **1**A is a schematic diagram of an example network utilizing a DCMS server for communicating with mobile devices that interact with beacons, in accordance with embodiments of the present disclosure.

[0007] FIG. **1**B illustrates steps of a method implemented at a DCMS server for delivering content to a user's mobile device after a trigger has been activated, in accordance with embodiments of the present disclosure.

[0008] FIG. **2** illustrates an exemplary graphical user interface generated by a DCMS server for a merchant to configure a beacon deployed at a location, in accordance with embodiments of the present disclosure.

[0009] FIG. **3** illustrates an exemplary graphical user interface generated by a DCMS server for a merchant to configure a geofence deployed at a location, in accordance with embodiments of the present disclosure.

[0010] FIGS. **4-6** illustrate exemplary screenshots provided by a DCMS server to a merchant for creating/editing/reviewing marketing campaigns, in accordance with embodiments of the present disclosure.

[0011] FIG. **7** illustrates an exemplary screenshot provided to a merchant for managing various marketing campaigns for which the merchant is utilizing the DCMS, in accordance with embodiments of the present disclosure.

[0012] FIG. **8** illustrates several screenshots of a mobile device displaying real-time transit information, in accordance with embodiments of the present disclosure.

[0013] FIG. **9** illustrates a screenshot of a mobile device displaying a targeted marketing deal to an end user, in accordance with embodiments of the present disclosure.

[0014] FIG. **10** illustrates actions taken by a widget embedded in a mobile application program to receive targeted marketing offers from a DCMS server, in accordance with embodiments of the present disclosure.

[0015] FIG. **11** illustrates exemplary system components and data items in connection with the DCMS server facilitating delivery of targeted marketing offers to users, in accordance with embodiments of the present disclosure.

[0016] FIGS. **12-13** illustrate user interface screenshots of a mobile application for engagement of users with various merchant-related activities, in accordance with embodiments of the present disclosure.

[0017] FIG. **14** illustrates a sequence of intermediate states between a merchant defining a marketing campaign and a merchant validating a deal redeemed by a user, in accordance with embodiments of the present disclosure.

[0018] FIGS. **15-18** illustrate screenshots showing exemplary DCMS interfaces for merchants to define or configure their marketing programs, in accordance with embodiments of the present disclosure.

[0019] FIG. **19** illustrates an exemplary DCMS interface for personnel associated with a transit agency to approve one or more marketing campaigns/offers provided by merchants, in accordance with embodiments of the present disclosure.

[0020] FIG. **20** illustrates a DCMS interface displaying exemplary analytics associated with a marketing campaign, as viewed by a merchant, in accordance with embodiments of the present disclosure.

[0021] FIG. **21** illustrates a sequence diagram showing interactions among the various components of the overall system in a scenario wherein a user is presented with an option to purchase a mobile ticket via a third party server, in accordance with embodiments of the present disclosure.

[0022] FIG. **22** illustrates several screenshots of a user's mobile device displaying real-time transit information and in connection with a user purchasing a ticket from a third party server different than the transit agency, in accordance with embodiments of the present disclosure.

DETAILED DESCRIPTION

[0023] This disclosure incorporates by reference the disclosure provided in U.S. Patent Publication No. 2014/0095227. The disclosure in U.S. Patent Publication No. 2014/0095227 is exemplary of systems or methods for visually validated ticketing that can be enhanced in accordance with the disclosure provided herein. Thus embodiments of the system disclosed herein can be in addition to, in lieu of, or a variation of the Ticket Operations Management System (TOMS) disclosed in U.S. Patent Publication No. 2014/0095227.

[0024] Aspects of the present disclosure use programmable triggers (or simply, triggers) to identify a user's location when a user is approaching or arrives at a certain geographical location. Content (e.g., in the form of text, graphics, audio, video or any combination of media) that is relevant to the user's context, such as the user's geographical location, the time of day, etc., is then delivered to the user. Various tools can be used to create triggers by which a user's mobile device requests context-specific information, including a beacon, a geofence, a network subnet, a network subnet, a WiFi network, or even a user's behavioral action (such as a fixed number of steps taken by a user when the user is moving), etc.

[0025] A beacon is an electronic device that transmits a signal allowing a user's mobile device to receive certain information and determine its proximity to the source of the beacon. For example, as a user approaches a bus stop, a beacon located at the bus stop can provide information to a user's mobile device indicating to the mobile device is approaching the beacon. Beacons can transmit various types of signals, such as a Bluetooth Low Energy signal, an audio signal etc. A beacon utilizing Bluetooth Low Energy signal is called a BLE beacon. After receiving a signal transmitted from a beacon, a user's mobile device can be configured to contact a server associated with the beacon and provide information identifying the user's mobile device.

[0026] Before a mobile device reacts to a beacon, the mobile device user may first perform a one-time registration process to authorize the user's mobile device to interact with a beacon at a geographical location. Subsequently, a mobile application program (on the user's mobile device) determines which beacon(s) will interact with the user's mobile device.

[0027] In addition to triggers that are sensed automatically, a trigger can also be sensed manually. For example, a mobile device user can scan the mobile device using a NFC reader or a QR reader, which causes the mobile device to contact a server and pass along information pertaining to the user's location. The server then can send customized information based on context, including the location and time of the request, and possibly also based on the user's profile.

[0028] In an exemplary scenario, embodiments of the present disclosure comprise a server that delivers content (e.g., in the form of text, graphics, audio, video or any combination of media) to mobile devices when a respective user is at a certain geographical location. The content delivered is associated with a context of the user's location. For example, the server can deliver information about real-time transit arrivals to a user's mobile device when the user is nearing a bus stop. Additionally, in some embodiments, the server can provide targeted marketing deals to a user, delivered either as a stand-alone deal, or in conjunction with other information (e.g., transit information). In yet some other embodiments, the server can also deliver visually validated mobile tickets, in accordance with the disclosure provided in U.S. Patent Publication No. 2014/0095227. Such tickets can be applied for one-time use, weekly use, monthly use, etc.

[0029] As another example, the server can provide location-based information about vehicle parking lot facilities, e.g., number of vacant spots, number of reserved spots, price of parking by the hour or day, etc. The system can also generate parking tickets/passes and validate such tickets/passes in various scenarios.

[0030] A server designed and constructed in accordance with aspects of the present disclosure is referred to herein as a Dynamic Content Management Server (DCMS). It will be understood that the term "server" or "DCMS server" can be construed to mean a single server or a plurality of interconnected servers that are configured to exchange information. Further, such a server or a plurality of servers can be cloud-based or can be physical servers.

[0031] In some embodiments, information relating to a user's location (e.g., geographical coordinates, time of day, etc.) can be used as a trigger for the delivery of content delivered to a user. In the above example, when the user is approaching a bus stop, the user's mobile device can interact with one or more trigger-based tracking devices (e.g., Bluetooth beacons, NFC readers, QR readers, etc.) mounted at a bus stop. In general, it will be understood that such tracking devices can be attached to any object at any physical location, (e.g., a parking lot, a railway station, a movie theater, a stadium, a concert venue, etc.). Tracking devices such as Bluetooth Low Energy beacons may broadcast periodic packets of information that can be received at a user's mobile device. It will be understood that the tracking devices can be owned and operated by the entity that operates the DCMS server described herein, or alternatively, can be owned by a third party. Although in the discussions herein, the term "beacon" is used, this term generally refers to a tracking device. Furthermore, it will be understood that the beacon information request can include one or more beacons. Also, beacons can be configured in various modes, e.g., NFC, Bluetooth, etc.

[0032] FIG. **1**A is a schematic representation of an example network **100** in which user's mobile device **105** interacts with DCMS **110** to receive context-specific information. As shown in network in FIG. **1**A, a plurality of beacons **115**, **120**, **125**, **130**, **140**, **145**, **150**, **155** are physically located in metropolitan

area **155**. Each beacon is physically positioned at a different location, for example, at the entrance of a transit station, restaurant, retailer store, or parking lot, at a street corner bus stop, etc. The DCMS **110** is configured to perform services, such as transmitting information, coupons, or other data, to authorized mobile devices as they approach a beacon, based upon programming that is associated with that beacon.

[0033] The programming is customized based on merchandising campaigns run by merchants (including businesses, agencies, government entities, or other sponsors), such as Retailer **160**, Restaurant **165**, Transit Agency **170**, and National Merchandiser **175**. As one example, Retailer **160**, which has a store located near beacon **120**, creates an advertising campaign via DCMS **110** that provides coupons to the screens of users' mobile devices when users approach the store during certain hours. As a second example, Transit Agency **170**, which operates a train station in which beacon **140** is located at the entrance, utilizes DCMS **110** to provide train arrival times to the screens of users' mobile devices when users with accounts with Transit Agency **170** enter the station. As yet another example, National Merchandiser **175**, which markets a bottled sports drink that is sold in establishments throughout the country, utilizes DCMS **110** to send advertisements to the screens of users' mobile devices located near beacons positioned at athletic fields in Metropolitan area **155**, between the hours of noon and 4 pm when the temperatures are above 90 degrees.

[0034] In this example in FIG. **1**A, the user's mobile device **105** approaches beacon **115** within metropolitan area **155**. The beacon emits a signal (e.g., a Bluetooth low energy signal) detected by the user's mobile device **105**. The user's mobile device is configured such that, upon detecting the beacon's signal, it sends a request to DCMS **110** via the Internet (the intermediate communications between the user's mobile device and the Internet are not shown). The request received by DCMS **110** includes information identifying the user's mobile device **105** and the beacon **115**. Based on this data, and possibly additional information such as the time of day, the user's purchase history, etc., the DCMS **110** transmits data back to user's mobile device **105** based on a program devised by one of the sponsors (**160**, **165**, **170**, **175**), which is running a marketing campaign associated with beacon **115**.

[0035] FIG. **1**B illustrates steps of a method implemented at a DCMS server for delivering content to a user's mobile device after a trigger (based on NFC, QR, WiFi, etc.) has been activated. A user may go through a registration process to provide approval to receive content via the DCMS server. Once registered, a trigger is activated when the user is in close proximity to a beacon location. In other words, a user's mobile device receives communication from the beacon that includes a beacon interaction request when the user is in close proximity to a beacon location. This beacon interaction request is then passed on to a DCMS server by the user's mobile device. Steps related to the functionality of a DCMS server starting with processing a beacon interaction request and eventually delivering content to the user's mobile device are explained in detail below.

[0036] A DCMS server receives a beacon interaction request from the user's mobile device, at step **182**. For example, the beacon information request can include identifying information such as a beacon ID, a beacon major ID, and a beacon minor ID. In some embodiments, upon receiving the request, the server first authenticates a user's mobile device, at step **184**, before performing further processing. For example, although a user's mobile device may be valid, authentication may fail if the device has been reported as lost or stolen to the entity that owns and operates the DCMS. In that instance, the respective mobile device is blocked from receiving content.

[0037] Upon successful authentication, the server extracts information from the received beacon interaction request, at step **186**. Along with the beacon identifier, the beacon information request received at a DCMS server from a user's mobile device also includes information identifying the user's mobile device. This may include the user's mobile device type, operating system type, operating system version, and the like.

[0038] Next, the server retrieves and maps relevant content, based on the extracted information, at step **188**. For example, the server can access a lookup table that includes rules for mapping content based on the information extracted from beacons. The content can be in the form of text, graphics, audio, video or any combination of media. The content can be of various types, such as real-time transit information, targeted marketing deals, or a combination of the above. The content also can be representative of, or customized for, user preferences, user demographics, merchant preferences, etc. Various examples of content are shown in connection with FIGS. **4**-**6**.

[0039] Because mobile devices can have different computational and physical resources, in some embodiments, the server normalizes the content so that such content can be properly rendered on the user's mobile device, at step **190**. In some embodiments, the server delivers dynamic, real-time content to a mobile application program running on a user's mobile device. The mobile application program can be associated with an entity that owns and operates the server. In some embodiments, content can be delivered to a user's mobile device via a widget, e.g., an embeddable dynamic content displayer. Such a widget can use web browser technologies to load and display content. A widget, in some scenarios, can also be embedded into native third party mobile application programs on a user's mobile device. Typically, a widget periodically wakes up and checks to see if any triggers have been activated. Various methodologies such as HTTP, HTTPS, web-socket, etc. can be used for rendering content on the user's mobile device.

[0040] In some embodiments, the DCMS server can deliver more than one type of content to a user's mobile device at the same time. The content can involve different types of information and/or campaigns. Further, such content can be created or managed by different sources. Accordingly, in scenarios where multiple types of content are delivered to a mobile device, the DCMS server resolves conflicts between the different types of content. For example in a hypothetical scenario, two or more coffee shops may have advertising campaigns set up that would result in delivery of their respective deals/coupons to a user's mobile device at the same time. Not only can the volume of content be large in such a scenario; it can be redundant and/or cumbersome as well. To resolve conflicts, a DCMS server can select one or more types of content based on other considerations. Examples of such considerations may include user preferences, a user velocity, a time when content was last delivered to a user, and the like. It will be understood that some of these considerations can involve querying the user's mobile device for additional data. For example, a DCMS server might have to query a user's

mobile device to retrieve a user's velocity. In some scenarios wherein a user is waiting for a next public transport to arrive, a DCMS server delivers content to a user's mobile device after determining that the next public transport arrives after a sufficient time gap. Further, content delivered to a user's mobile device can be in the form of intermittent or periodic bursts, or one-time only.

[0041] The content can be received inside a mobile application program via push notifications, a URL (web link), images, or as a data object. Additionally, content can be received in an email or as a message delivered to the user's account on the server. In other words, the content can be received in real time as well as in non-real time.

[0042] Typically, the content is displayed on the home screen of a user's mobile device. With some types of mobile operating systems (e.g., iOS 8 and Android 4.3), push notifications are displayed on the home screen of a user's mobile device and once a user interacts with the push notification, a respective mobile application program is launched for further interaction.

[0043] FIGS. **2-3** illustrate screenshots of exemplary webpages (**200**, **300**) provided to a merchant by a DCMS server for configuring a beacon deployed at a location. In both figures, it is shown that a merchant inputs (usually via a keyboard) values of various fields. Exemplary fields common to FIGS. **2-3** include "Location Name" (**210**, **310**), "UUID" (**220**, **320**), "Long URL" (**230**, **330**), "Latitude" (**240**, **340**), "Longitude" (**250**, **350**), "Type" (**260**, **360**), and "Entity ID" (**270**, **370**). "Location Name" is a unique identifier that can be used to refer to a beacon. "UUID" is a system-generated ID that can be used to uniquely identify a beacon. "Long URL" is a web address that enables the server to communicate with the beacon. "Short URL" is a shortened version of a "Long URL." "Latitude" and "Longitude" are used to identify the geographical coordinates where a beacon is located. It will be understood that one or more beacons can be attached at one location.

[0044] As previously discussed, beacons can be configured to operate in various modes, e.g., NFC, Bluetooth, etc. In these figures, a "Type" field is used to configure these various modes. For example, in FIG. **2**, a beacon is configured using a proprietary mode ("SherpaBeacon"). In FIG. **3**, a beacon is configured using another mode ("geolocation"). The "Entity ID" field, typically associated with the "UUID" field can be used as a primary key in a database table, e.g., in a lookup table that provides rules for mapping content, as discussed previously in FIG. **1**.

[0045] Further, FIG. **2** and FIG. **3** illustrate that the location of the respective beacon(s) can be displayed on a map (**280**, **380**) of the region. A "Submit" button (**290**, **390**) on this webpage allows the inputs provided by a merchant to be submitted to a DCMS server.

[0046] Since various types of beacons can be used with embodiments of the present disclosure, each beacon mode can be associated with a description data set. Accordingly, FIG. **2** depicts that a merchant also entered a "BLE Spec" field, the "BLE Spec" field comprising two sub-fields: a beacon major ID (**295**) and a beacon minor ID (**296**). (In some embodiments, a DCMS server supplies the "BLE Spec" field.) FIG. **3** depicts that a merchant entered a "GeoFence" field (**395**), the "GeoFence" field comprising four sub-fields: a southwest latitude, a southwest longitude, a northeast latitude, and a northeast longitude.

[0047] The beacons can provide a way to track a user's mobile device when a beacon and a user's mobile device are in proximity with each other. As will be described in detail later herein, a user at a geographical location participates in one or more campaigns by a DCMS server via the user's mobile device.

[0048] FIG. **4** illustrates a screenshot of an example webpage **400** provided by a DCMS server to a merchant for creating/editing/reviewing campaigns, or "programs." A program can enable HTML data to be rendered on a user's mobile device when certain criteria are satisfied, including detecting that the user has approached a beacon or other trigger that is associated with the program.

[0049] In FIG. **4**, a merchant is prompted to provide a "Program Name" **405** for the campaign. Since campaigns can differ from each other with respect to their objectives, target audiences, types of content delivered, geographical locations, etc., a merchant can input a set of parameters to be associated with a campaign. Examples of such parameters include a type, a range, a starting hour, an ending hour, and the like. Accordingly, in FIG. **4**, it is shown that a merchant enters the value of such parameters in fields such as a "Choose Type" **410**, a "Program Range" **415**, a "Starting Hour" **420**, an "Ending Hour" **425**, a "Days of week" **430**. With the "Choose Type" parameter, the merchant can choose whether the campaign will, for example, generate an HTML page on a user's mobile device screen, download a file, interact with an application running in the user's mobile device, etc. The "Program Range" field can enable the merchant to select, for example, whether the DCMS should transmit to the user when the user's mobile device travels somewhat near the beacon or trigger, or only when the beacon or trigger has become very close (within a few feet) of the beacon or trigger. The temporal fields (starting hour, ending hour, days of week) enable the merchant to customize the campaign to set limits for when the DCMS should transmit to the user. In other words, if the "Days of Week" field **430** is set to "Sunday" only, then the campaign will only send data to a user's mobile device on Sundays, even if the user travels in the close vicinity of an associated beacon on Saturdays as well.

[0050] The interface **400** for the program also enables the user to include the raw HTML file **435** for what will be rendered on a user's mobile device screen and the rendered HTML image **440**. In this manner, if the type of program **410** is an HTML file, the merchant can see at a glance what the HTML file is (to see the coupon, advertisement, or other display) and can make changes to the file when necessary or desired. With this preview, the merchant can ensure that mobile device users will receive the experience intended by the creators of the campaign.

[0051] Because campaigns are associated with a user's presence at a geographical location, and beacons track a user's mobile device when a beacon and a user's mobile device are in proximity with each other, the webpage in FIG. **4** also shows a "Choose a Location" field **445**. This field is used by the merchant to select one or more beacons that are already or will be associated with a respective campaign.

[0052] FIG. **5** illustrates a screenshot of a second example webpage **500** provided to a merchant for creating/reviewing campaigns. Specifically, the exemplary campaign shown in FIG. **5** relates to a coffee shop advertisement. As in FIG. **4**, a merchant enters the value of various fields such as a "Choose Type," a "Program Range," a "Starting Hour," an "Ending Hour," and a "Days of week." In this example, however,

instead of choosing "HTML" for the type to render an HTML on the user's mobile device, the merchant selects for "Merchant Tool" for the Type **510**. Also, in this example, for the Program Range **515**, the merchant selects "far," which means that the campaign will interact with the user's mobile device even if the device does not become very close to the physical location of the beacon.

[0053] As can be seen in FIG. **5**, a "Submit" button on this webpage allows the inputs by a merchant to be submitted to a DCMS server. A "Delete" button **555** allows deletion of the campaign.

[0054] FIG. **6** illustrates a screenshot of a third example webpage **600** provided to a merchant for creating/reviewing campaigns. Specifically, the example campaign shown in FIG. **6** is in connection with a parking lot. In this example, the merchant enters "Parking Validation" for the Program Name **605** and chooses "Merchant Parking Validation" for the Type **610**. Based on the selection of the Type **610**, the webpage generates fields for Parking Lot Name **660** and Parking Lot ID **665** (instead of the Raw HTML **435** and Rendered HTML **440** fields in the example webpage in FIG. **4**). As is shown in FIGS. **4** and **5**, the merchant can enter the value of various other fields such as a "Program Range," a "Starting Hour," an "Ending Hour," and "Days of week." Similar to FIG. **5**, a "Submit" button on this webpage allows the inputs provided by a merchant to be submitted to a DCMS server and a "Delete" button allows deletion of the campaign.

[0055] FIG. **7** illustrates a screenshot of an example high-level screen **700** provided to a merchant for managing various marketing deals for which the merchant is utilizing the DCMS. As can be seen, the webpage **700** enables the merchant to access each program (or campaign) by title **710**. For example, if a merchant selects to review "Parking Validated Updated" **715**, the DCMS generates screen **600** as shown in FIG. **6**. The merchant can scroll through the Program Names or use a filter prompt to enter the desired name for the program/campaign. The high-level screen **700** also enables the merchant to review details about beacon or other trigger locations **720**. By clicking on a location name **720**, the merchant can access detailed information about the beacon or other trigger. Finally, the high-level screen **700** enables the merchant to create a new program **730** or create a new location **740** for a beacon or trigger. In some embodiments, as discussed previously, the server allows beacons to be configured in various modes (e.g., NFC, Bluetooth, etc.). Each such mode can be associated with a description data set.

[0056] FIG. **8** illustrates several screenshots of a mobile device displaying real-time transit information. Some screenshots in FIG. **8** also display the DCMS server providing users with the functionality of purchasing a mobile ticket. In some instances, the mobile ticket purchase involves methodologies as disclosed in U.S. Patent Publication No. 2014/0095227.

[0057] As an example, when a mobile device user approaches a bus station, the mobile device may be "triggered" by a beacon or other trigger located at the bus station, causing the mobile device to send a beacon interaction request to the DCMS. The program running on the DCMS that is associated with this beacon or trigger may cause the user's mobile device to open a ticketing app on the mobile device. For example, screen **805** shows the location of the nearby bus station and prompts the user to check arrival times or purchase tickets. By clicking on "arrival times," the screen **810** may be generated that indicates the arrival times of certain buses and also prompts the user to purchase transit tickets. As another option, screen **815** may be generated to prompt the user to select a nearby location and then select from a plurality of information that is relevant to that location. Screen **820** is an example screen providing an alert when the DCMS transmits an alert to the user's mobile device screen but requires that the user select to receive the underlying information. Screens **825**, **830**, **835**, **840**, and **845** are displays that combine arrival information with other information, including ticketing, nearby merchandisers (see **830**), and prompts for showing a purchased ticket for visually validated ticket redemption (see **840**). Screens **850** illustrate screens for a visually validated ticketing application.

[0058] FIG. **9** illustrates a screenshot of a mobile device displaying a targeted marketing deal to an end user. In this screenshot, a user is given a deal for a free coffee when the user is waiting for a bus at a bus stop. The "deal" was generated via the DCMS and was triggered by a beacon or other trigger indicating that the user's mobile device was in the vicinity of the bus stop.

[0059] FIG. **10** illustrates actions taken by a widget, for example, embedded in a mobile application program, running on a user's mobile device to receive targeted marketing offers from a DCMS server. Starting at step **1002**, a widget wakes up from a dormant state, for example, at periodic intervals of time. After waking up, the widget loops through configured triggers to identify one or more active triggers, at step **1004**. As disclosed in embodiments herein, a trigger can be to identify a user's location when a user is approaching or arrives at a certain geographical location. Content (e.g., in the form of text, graphics, audio, video or any combination of media) that is relevant to the user's context, such as the user's geographical location, the time of day, etc., is then delivered to the user. For example, a widget can loop through the following triggers in an example implementation: a network subnet **1006**, a BLE beacon **1008**, a NFC-based trigger **1010**, a QR-reader **1012**, a geofence **1014**, or even detection of a user's behavioral action **1016** (such as a fixed number of steps taken by a user when the user is moving), as detected by an accelerometer or any other sensor, for example. At step **1020**, a widget communicates to a ticketing server or a DCMS server requesting for data related to marketing programs that are associated with one or more active triggers. In some embodiments, the widget sends trigger-specific information for the active trigger(s) to the DCMS server. Accordingly, in some embodiments, the service API associated with the DCMS server looks up data related to marketing programs that are associated with the active triggers, and transmits such data back to the widget, at step **1022**. Upon receiving the response, the widget parses (at step **1024**), and displays the data on a user's mobile device. Such data, for example can include transit-related information **1026** or marketing campaigns/deals **1028** offered by merchants.

[0060] FIG. **11** illustrates exemplary components and data items in connection with the DCMS server facilitating delivery of targeted marketing offers to users, in accordance with embodiments of the present disclosure. For example, a DCMS Wizard Application can be configured by a merchant to generate mobile app content (e.g., information provided by a transit agency) that is delivered to a rider's (user's) mobile application. As disclosed herein, in some embodiments, the marketing deals are embedded in the mobile app content along with, for example, transit-related information provided by the transit agency. In some embodiments, a transit agency

approves (via an approval process) of the marketing campaigns/deals created by the merchant.

[0061] FIGS. **12-13** illustrate user interface screenshots of a mobile application for engagement of users with various merchant-related activities such as interactive games, sweepstakes, scavenger hunts, etc. Such merchant-related activities can, for example, be defined by merchants when a merchant is defining/creating a marketing campaign. As illustrated by these screenshots, in some embodiments, users can view their location on a map, with respect to merchants/merchants who offer targeted marketing offers. Further, users can also redeem points/coupons when they walk or pass a merchant/merchant location a number of times. In some embodiments, merchants can review analytics associated with users utilizing resources associated with the merchant. For instance, a merchant can view the number of times a coupon was redeemed, the earnings, the savings, the total points collected, and the like. Further, merchants can define the targeted marketing offers and review such offers as they are going to be presented to users. Defining targeted marketed offers includes defining discounts available to users, a time period when such discounts are available, the amount associated with such offers, and the like.

[0062] FIG. **14** illustrates a sequence of intermediate states between a merchant defining a marketing campaign and a merchant validating a deal redeemed by a user. For example, a merchant creates a marketing campaign by filing out a DCMS wizard form. In embodiments disclosed herein, marketing campaigns provided by a merchant are delivered by a mobile application of a transit agency that provides users with marketing campaigns in addition to transit-related information, for example. The marketing campaigns can involve deals and discounts offered by merchants to users based on the location and personal preferences of users. In some embodiments, personnel associated with a transit agency approve (or, reject) one or more marketing campaigns/offers provided by merchants. Thus, information pertaining to a merchant, such as the merchant's profile and associated analytics (if any) of the merchant and/or the merchant's marketing campaigns collected by the DCMS can be provided to a transit agency, as part of the approval process. In some embodiments, a user's location and context can be determined based on a user being located close to a BLE beacon, for example. A user's mobile device interacts with the BLE beacon (or, in general with trigger-based tracking devices) when the user is in close proximity to a beacon location. Accordingly, the DCMS server receives, from a user's mobile device, information identifying the beacon's location, which can, in turn be used to determine the user's geographical location. The DCMS can provide marketing offers and deals provided by one or more merchants in proximity to the user's geographical location. A user can review the merchant deals and offers delivered on the user's mobile device via a transit agency app. Accordingly, the user can travel to the merchant location to redeem the deal which is validated by the merchant. In some embodiments, the DCMS provides analytics of the marketing campaign to merchants for them to gauge the effectiveness of the campaigns.

[0063] FIGS. **15-18** illustrate screenshots showing exemplary DCMS interfaces for merchants to define or configure their marketing programs. For example, FIG. **15** shows a DCMS interface for a merchant to enter information identifying a merchant, such as a name, a business location, a website address, a business category for the merchant, a contact name and a phone number for the merchant, etc. In FIGS. **15-18** a restaurant for a merchant named "Pizza One" is shown to be part of a marketing campaign. In FIG. **17**, a merchant can upload the logo for his business. In some embodiments, the DCMS optionally provides tips and recommendations for best practices to merchants. Interested merchants can apply such tips and recommendations to maximize their revenue generation. FIG. **17** illustrates exemplary details of a marketing offer that can be provided by a merchant. For example, as shown in FIG. **17**, the offer can be in the form of a percentage discount or a monetary value discount. In some examples, merchants can also provide loyalty points and/or free giveaways to users/customers who redeem the marketing offers. In some DCMS embodiments, the interface for defining marketing offers provides a real-time preview of the marketing campaign to a merchant, while a merchant is creating the marketing campaign. Further, as shown in FIG. **18**, merchants can edit their marketing offers/campaigns when a marketing campaign is being created, or at a later time, while a marketing campaign is running.

[0064] FIG. **19** illustrates an exemplary DCMS interface for personnel associated with a transit agency to approve one or more marketing campaigns/offers provided by merchants. Tab **1902** in FIG. **19** provides a list of exemplary approval statuses. For example, approval statuses can include an active status, an approved status, a rejected status, a registered status, and an invited status. Various other approval statuses of marketing campaigns can be included in embodiments of the DCMS. FIG. **19** also shows a list of exemplary merchants and a corresponding approval status of a merchant. For example, a "Hot Pot City" merchant is shown to have a rejected status, whereas a "Market On Main" merchant is indicated as being approved by a transit agency.

[0065] FIG. **20** illustrates a DCMS interface displaying exemplary analytics associated with a marketing campaign, as viewed by a merchant. In some embodiments, the dashboard displays loyalty points collected by users over a period of time, a redemption status (e.g., how many points have been distributed, how many points still remain to be used by users, how many points have already been used by users and the like). FIG. **20** also shows that a merchant can view revenue generated and user savings provided in connection with the marketing campaign. It will be understood that the analytics shown in FIG. **20** are for discussion purposes only. Various other analytics involving mathematical/statistical analysis of parameters of a marketing campaign can be computed by embodiments of the DCMS, and displayed to merchants, in embodiments of the disclosed system. Analytics pertaining to a marketing campaign can be used by merchants to track user engagement with a marketing campaign. In some embodiments, the DCMS receives feedback from users in connection with the effectiveness of a marketing campaign. Analytics associated with a marketing campaign and/or feedback from users can be used by marketers to refine the parameters of a marketing campaign so as to maximize the profitability of merchants.

[0066] As described herein, in some embodiments, users can redeem offers from merchants based on a QR code, a promotional code, or an animation displayed on the screen of their mobile device. The QR code, the promotional code, or the animation can be transmitted by the DCMS server to a user's mobile device, in response to the DCMS server determining that a user is located in close proximity to a merchant location. Such a determination can be via a user's mobile

device communicating with a trigger-based tracking device mounted at a transit location or a merchant facility.

[0067] Aspects of the present disclosure relate to creating, managing, and dispersing mobile transit tickets from a mobile ticket processor via an intermediary third party processor (alternatively referred to herein as a third party server). It will be appreciated that in some embodiments the third party server is an entity that is distinct from the transit agency. In some other embodiments, a transit agency can provide one or more functionalities of a third party server. The mobile transit tickets can be configured for delivery to a third party mobile application program on a user's mobile device. The mobile application program can be associated with an entity that owns and operates the third party processor. In some embodiments, the mobile tickets can be delivered to a user's mobile device via a widget, e.g., an embeddable mobile ticket displayer. Such a widget can use web browser technologies to load and display a mobile ticket. A widget, in some scenarios, can also be embedded into a third party mobile application program on a user's mobile device. Various methodologies such as HTTP, HTTPS, web-socket, etc. can be used for delivery of mobile tickets to a user's mobile device.

[0068] FIG. **21** illustrates a sequence diagram showing interactions among the various components of the overall system in a scenario wherein a user is presented with an option to purchase a mobile ticket via a third party server. Specifically, FIG. **21** illustrates the following components: an interface on a user's mobile device ("Application Interface"), a third party server, a mobile ticket processor, and a payment processor. The displayed interactions begin with a user (customer) launching a mobile application program. As discussed previously, when a user is in close proximity to a beacon location, a trigger is activated. In other words, a user's mobile device receives communication from the beacon that includes a beacon interaction request, when the user is in close proximity to a beacon location. This beacon interaction request is then passed on to a third party server by the user's mobile device. A beacon information request received at a third party server from a user's mobile device also includes information identifying the user's mobile device. Examples of such information include a user's mobile device type, an operating system type, an operating system version, and the like. Hence, a third party server is able to extract beacon-related information and a user's mobile device-related information.

[0069] In response, the third party server provides transit-related and ticket-related information in real time to the user's mobile device. Additionally, the third party server also provides the user with an option to purchase tickets. In some instances, the mobile application program requests a third party server to provide a catalog of tickets that are available for purchase. Accordingly, the third party server responds with such a catalog, which is displayed to the user via the mobile application program. Next, the user selects a payment instrument (via the catalog displayed on the mobile application program) which is then communicated to the third party server. Typically, the user has one or more payment options pre-stored in the user's account with the third party server. These payment options are communicated to the mobile application program, for selection by the user. After a user selects a payment option, he or she authorizes purchase of a ticket. This authorization is passed on to the mobile ticket processor by the mobile application program. Accordingly, the mobile ticket processor updates the inventory of tickets. Additionally, a mobile ticket processor requests a payment processor (e.g., associated with a bank or a financial institution associated with a user's account) to debit a dollar amount in connection with the purchase of the mobile ticket. After the payment processor has debited the appropriate dollar amount, the payment processor informs the mobile ticket processor of the transaction, i.e., details of the dollar amount debited, a date and/or a time pertaining to the debit, a confirmation number pertaining to the debit, and the like. Subsequently, the mobile ticket processor delivers the mobile ticket to the user's mobile device which is eventually displayed to the user.

[0070] In some embodiments, the third party server provides functionalities similar to a DCMS server. For example, in conjunction with providing a user with an option to purchase tickets, a third party server can deliver targeted content to a user's mobile device.

[0071] FIG. **22** illustrates screenshots **2210**, **2220**, **2230**, **2240**, **2250**, **2260**, **2270**, **2280**, and **2290** of a mobile device displaying real-time transit information and in connection with a user purchasing a ticket from a third party server different than the transit agency. In some embodiments, a mobile ticketing application running on a user's mobile device communicates with a third party server for providing users with the functionality of purchasing a ticket. As shown in region **2212** of screenshot **2210**, in some embodiments, the third party server provides targeted content about a restaurant "Little Bird" that is in close proximity to a user. Screenshots **2210**, **2220**, **2230**, and **2240** provides information about real-time transit arrivals to the user's mobile device when the user is at or in close proximity to a transit stop, such as a train station or a bus stop. Screenshot **2240** shows transit-related information on a user's mobile device, in addition to targeted content (e.g., an advertisement about a "Little Bird" restaurant). Screenshots **2250**, **2260**, **2270**, and **2280** display various options in connection with purchasing a ticket by a user.

[0072] In some embodiments, the mobile ticketing application running on the user's mobile device communicates, in addition to the third party server. For example, as shown in screenshots **2250**, **2260**, **2270**, and **2280** the mobile ticketing application can communicate with a mobile ticket processor for selecting a type of a rider (e.g., an adult, a member of the armed forces, or a child), payment information associated with the user's ticket purchase, a type of a ticket (e.g., a ticket that is valid for a limited time duration), a quantity of tickets that a user intends to purchase, etc. Screenshot **2290** shows an example of a mobile ticket displayed on the screen of a user's mobile device. In some instances, the mobile ticket purchase involves methodologies as disclosed in U.S. Patent Publication No. 2014/0095227, the contents of which are incorporated herein by reference.

[0073] In this disclosure, numerous specific details have been set forth in order to provide a thorough understanding of embodiments of the present disclosure. It will be apparent, however, to one skilled in the art that embodiments of the present disclosure may be practiced without some of these specific details. Further, although examples used in this disclosure refer to terms such as "marketing deals," "advertisement campaigns," and "programs" created by "merchants," in general, aspects of the disclosure allow any kinds of campaigns to be created by individuals and/or organizations. Also, in alternative embodiments, a trigger can be created by other means such as a network subnet, a WiFi network, or even a user's behavioral action, e.g., a fixed number of steps taken by a user when the user is moving, etc. Aspects of a CMS server described herein includes a graphical, browser-

based editor that provides an interface for managing campaigns for delivery of content to a user's mobile device and configuration of triggers associated with delivery of such content.

[0074] Embodiments of the present disclosure include various steps. The steps may be performed by hardware components or may be embodied in machine-executable instructions, which may be used to cause a general-purpose or special-purpose processor programmed with the instructions to perform the steps. Alternatively, the steps may be performed by a combination of hardware, software and/or firmware.

[0075] Embodiments of the present disclosure may be provided as a computer program product, which may include a machine-readable medium having stored thereon instructions, which may be used to program a computer (or other electronic devices) to perform a process. The machine-readable medium may include, but is not limited to, floppy diskettes, optical disks, compact disc read-only memories (CD-ROMs), and magneto-optical disks, ROMs, random access memories (RAMs), erasable programmable read-only memories (EPROMs), electrically erasable programmable read-only memories (EEPROMs), field programmable gate arrays (FPGAs), application-specific integrated circuits (ASICs), vehicle identity modules (VIMs), magnetic or optical cards, flash memory, or other type of media/machine-readable medium suitable for storing electronic instructions.

[0076] Moreover, embodiments of the present disclosure may also be downloaded as a computer program product or data to be used by a computer program product, wherein the program, data, and/or instructions may be transferred from a remote computer to a requesting computer by way of data signals embodied in a carrier wave or other propagation medium via a communication link (e.g., a modem or network connection).

What we claim is:

1. A method for delivering targeted marketing content to users by a server, comprising:

receiving information from a user's mobile device in response to a trigger, wherein the information identifies a context with respect to a tracking device located external to the user's mobile device that generated the trigger;

identifying at least one marketing campaign program in the server that corresponds to the tracking device;

applying conditions of the identified marketing campaign program to the context received from the user's mobile device, and

based upon the application of the conditions, selectively providing targeted marketing content associated with the identified marketing campaign program to the user's mobile device.

2. The method of claim **1**, wherein the context includes information identifying the user's mobile device.

3. The method of claim **1**, wherein the tracking device is a Bluetooth low energy beacon.

4. The method of claim **2**, wherein the context includes beacon identification information.

5. The method of claim **1**, wherein the tracking device is a geofence.

6. The method of claim **5**, wherein the context includes parameters associated with the geofence.

7. The method of claim **1**, wherein the conditions for the identified marketing campaign program include temporal restrictions for providing marketing content, such that the server selectively provides targeted marketing content upon receiving information from a user's mobile device at a date and/or time that corresponds to the temporal restrictions.

8. The method of claim **1**, wherein the step of selectively providing targeted marketing content further comprises rendering an HTML image on a display screen of the user's mobile device based upon raw HTML stored on the server for the identified marketing campaign program.

9. The method of claim **1**, wherein the conditions of the identified marketing campaign include a distance range and the information received from a user's mobile device includes an indication of the distance between the user's mobile device and the tracking device, such that the server selectively provides targeted marketing content upon determining that the user's mobile device is within a distance of the tracking device that corresponds with the conditions of the identified marketing campaign.

10. An apparatus for delivering targeted marketing content to users, the apparatus comprising a processor configured for:

receiving information from a user's mobile device in response to a trigger, wherein the information identifies a context with respect to a tracking device located external to the user's mobile device that generated the trigger;

identifying at least one marketing campaign program in the server that corresponds to the tracking device;

applying conditions of the identified marketing campaign program to the context received from the user's mobile device, and

based upon the application of the conditions, selectively providing targeted marketing content associated with the identified marketing campaign program to the user's mobile device.

11. The apparatus of claim **10**, wherein the context includes information identifying the user's mobile device.

12. The apparatus of claim **10**, wherein the tracking device is a Bluetooth low energy beacon.

13. The apparatus of claim **11**, wherein the context includes beacon identification information.

14. The apparatus of claim **10**, wherein the tracking device is a geofence.

15. The apparatus of claim **14**, wherein the context includes parameters associated with the geofence.

16. The apparatus of claim **10**, wherein the conditions for the identified marketing campaign program include temporal restrictions for providing marketing content, such that the server selectively provides targeted marketing content upon receiving information from a user's mobile device at a date and/or time that corresponds to the temporal restrictions.

17. A non-transitory computer readable medium having stored thereon instructions which, when executed by a processor on a user's mobile device, causes the processor to:

receive information from a user's mobile device in response to a trigger, wherein the information identifies a context with respect to a tracking device located external to the user's mobile device that generated the trigger;

identify at least one marketing campaign program in the server that corresponds to the tracking device;

apply conditions of the identified marketing campaign program to the context received from the user's mobile device, and

based upon the application of the conditions, selectively provide targeted marketing content associated with the identified marketing campaign program to the user's mobile device.

18. The non-transitory computer readable medium according to claim **17**, wherein the context includes information identifying the user's mobile device.

19. The non-transitory computer readable medium according to claim **17**, wherein the tracking device is a Bluetooth low energy beacon.

20. The non-transitory computer readable medium according to claim **19**, wherein the context includes beacon identification information.

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