



(51) International Patent Classification:

G06Q 10/08 (2012.01) G06F 3/0482 (2013.01)
G06Q 30/06 (2012.01) H04W 4/02 (2009.01)

(21) International Application Number:

PCT/US2017/019060

(22) International Filing Date:

23 February 2017 (23.02.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

15/065,673 9 March 2016 (09.03.2016) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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(54) Title: INTERACTIVE MOBILE PICK-UP UNIT NOTIFICATION

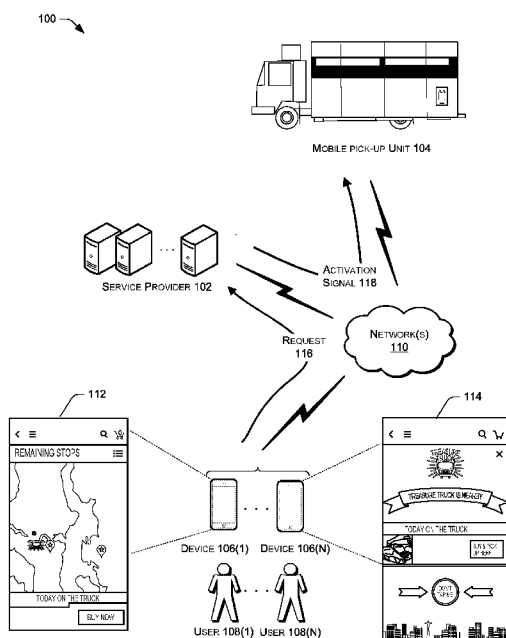


FIG. 1

(57) Abstract: Techniques for providing details associated with an item for acquisition from a pick-up unit are described herein. In particular implementations, a service provider may determine whether a mobile device is within a predetermined distance from the pick-up unit. In some implementations, a companion application may allow a user of the mobile device to cause a sensory function at the pick-up unit when the mobile device is within the predetermined distance. For instance, the user may use the companion application to cause the pick-up unit to produce light, sounds, smoke, bubbles, among other operations.



Published:

— *with international search report (Art. 21(3))*

INTERACTIVE MOBILE PICK-UP UNIT NOTIFICATION**CROSS REFERENCE TO RELATED APPLICATION**

[0001] This application claims priority to U.S. Patent Application No. 15/065,673, filed March 9, 2016.
5 The entire contents of which are hereby incorporated by reference herein.

BACKGROUND

[0002] Service providers often publish their locations on a map so that potential customers can find them. In some cases, service providers may be mobile. In that case, locations of the service providers may be tracked and updated on the map as the service providers' locations change. Thus, potential customers can track the
10 location of the service providers on the map in order to determine where to find them to obtain service. However, once the potential customer is in the general vicinity of a desired service provider, it may be difficult to locate the service provider's exact location. This may be due to a non-descript nature of a mobile service provider, due to limited accuracy or resolution of commercially available location tracking systems, inaccuracies in determined location due to obstructions or interference, and/or latency in tracking and displaying
15 the service provider's location.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] The detailed description is set forth with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items or features.

20 [0004] FIG. 1 illustrates an example architecture associated with items for acquisition at a mobile pick-up unit from a service provider.

[0005] FIG. 2 illustrates details of one or more example computing devices of the service provider of FIG. 1.

[0006] FIG. 3 illustrates details of the example mobile pick-up unit of FIG. 1.

25 [0007] FIG. 4 illustrates an example sequence of user interfaces that may be provided by a service provider to manipulate a feature of a mobile pick-up unit.

[0008] FIG. 5 illustrates an example sequence of user interfaces that may be provided by a service provider to indicate a proximity of a user device to a mobile pick-up unit.

[0009] FIG. 6 illustrates an example sequence of user interfaces that may be provided by a service provider
30 to indicate a change in proximity of a user device to a mobile pick-up unit.

[0010] FIG. 7 illustrates an example process for causing an output by a sensory feature of a mobile pick-up unit.

DETAILED DESCRIPTION

[0011] This disclosure describes techniques directed, in part, to a service provider to define a physical
35 location of a pick-up unit and to allow interaction with the pick-up unit when a mobile device associated with a user is within a threshold distance to the location of the pick-up unit. In some implementations, the service provider may update an appearance of a graphical representation or icon representing the pick-up unit on a user interface displayed on the mobile device based on the proximity of the user's mobile device to the pick-up unit.

The service provider may allow the user to interact with the pick-up unit via the user interface by selecting an interactive control. Interaction with the pick-up unit may be enabled when the user's mobile device is determined to be within a relatively close proximity to the pick-up unit. In some implementations, the service provider may cause the pick-up unit to produce an audio, visual, or other sensory output responsive to selection of the icon or other control of the interface. In some instances, this sensory output may aid the user in locating the pick-up unit once the user is in relatively close proximity to the pick-up unit (e.g., to locate the pick-up unit on a crowded street or parking lot).

[0012] In some implementations, the pick-up unit may comprise a motor vehicle (e.g., a truck, van, car, trailer, or the like) or other mobile pick-up unit containing one or more items offered for acquisition associated with a service provider, such as an online merchant or "brick and mortar" retailer. In some examples, the item(s) may be offered for a particular time period (e.g., hours, a day, a week) and/or offered at a discounted price. The mobile pick-up unit may move or be moved between one or more predetermined locations within a particular geographic region during the time period. For instance, the mobile pick-up unit may be scheduled to be at a first street address during a first time of day and at a second street address at a second time of day. In some implementations, one or more fixed pick-up units may be used in addition to or instead of mobile pick-up units. In that case, each fixed pick-up unit may be fixed at a particular physical location where items are available for a specific periods of time. Examples of fixed pick-up locations may include brick and mortar stores, kiosks, and the like.

[0013] In some implementations, the service provider may provide a companion application or website for a user to access information associated with the pick-up units (e.g., mobile and/or fixed pick-up units). The companion application or website may include graphical representations or icons representing the pick-up units. For example, in some implementation, when the mobile device associated with the user is outside a predetermined distance of a location of the pick-up unit, the icon representing the pick-up unit may be presented by the service provider in a first state. When the mobile device associated with a user is determined to be within a predetermined distance of a location of the pick-up unit, the icon representing the pick-up unit may be presented by the service provider in a second state.

[0014] In some implementations, the service provider provides the icon in the second state to notify the user that additional functionality (e.g., interactivity with the pick-up unit) is active and/or available. Furthermore, the user may activate the additional functionality of the pick-up unit via a selection of an interactive control shown on a user interface presented by the service provider in the companion application or website to manipulate one or more features of the pick-up unit. For instance, the additional functionality may include a sensory function, such as producing sound(s), emitting light(s), emitting smoke, activating a bubble machine, and/or activating a motor or actuator to move parts of the pick-up unit.

[0015] In some implementations, the service provider may receive a request from a user to provide notifications to a mobile device associated with the user regarding items available for acquisition from a pick-up unit. The notification may include information about a current item offered for acquisition at a pick-up unit, a location at which the item(s) are currently available for acquisition from a pick-up unit, and/or location(s) at which the item(s) will be available for acquisition from a pick-up unit in the future. As part of the request, the

service provider may also receive consent to obtain location information of the mobile device of the user. The location information indicates that the user has enabled the service to utilize global positioning systems, Bluetooth, Wi-Fi hotspots, and/or or cellular tower locations of the user's cellular service to determine an approximate location of the mobile device associated with the user.

5 [0016] For instance, the service provider may receive an initial consent from a user when the user elects to receive notifications from the service provider regarding the pick-up unit. Additionally or alternatively, the service provider may obtain consent to obtain location information when the user activates the companion application or website. In some examples, the service provider may obtain location information from another publicly available source of location information (e.g., a location-based social networking service), other
10 information obtained with the explicit consent of the user, and/or other information that has been processed to remove identifying information (e.g., names, addresses, etc.). Furthermore, in other implementations, a user may navigate directly to a landing page within the companion application or website dedicated to the pick-up unit without enabling the notification services described above. In that case, the companion application or website may display locations of the pick-up units without regard to a current location of the mobile device.

15 [0017] The user may navigate to the landing page within the companion application or website by, for example, selecting a link or other control in the notification or by opening the companion application and navigating to the landing page. The landing page may include details about the item for acquisition currently available from the pick-up unit. For instance, the landing page may include an image of the item, a textual description of the item, a cost of the item, and/or a quantity limit of the item. Furthermore, the landing page
20 may also include a textual listing of the one or more locations of the pick-up unit(s) at which the item can be acquired during predetermined periods of time (e.g., day, week, etc.). As used herein, the term "item" refers to a physical product, a digital product or download (e.g., a user may receive an e-book download or digital music download at the pick-up unit), gift certificate, or a service.

[0018] In some implementations, the landing page includes a list view control usable to cause presentation
25 of a list view page of the remaining one or more locations of the pick-up unit. The list view page may include an address of each remaining location at which the item(s) may be acquired from a pick-up unit and a time of day during which the item(s) may be acquired at each location. Additionally or alternatively, the companion application or website may include a map view control to cause presentation of a map view page illustrating a map of a specific geographic area. The map view page may include an icon showing a location of a pick-up
30 unit at which the item(s) can currently be acquired and icons showing one or more locations of pick-up units at which item(s) will be acquirable in the future. As described above, if the user has opted in to allow tracking of the user's mobile device, the location of the user's mobile device may be displayed in the map view and an appearance of an icon on the map representing a location of a currently active pick-up unit (i.e., a pick-up unit from which the item can currently be acquired) may be updated depending on a location of the user's mobile
35 device relative to the pick-up unit. For instance, the icon representing the location of the currently active pick-up unit may be updated depending a current proximity of the mobile device of the user to the pick-up unit. That is, when a user (via the associated mobile device) is detected within a predetermined distance (e.g., about 10 meters, about 20 meters, about 30 meters, about 10 yards, about 20 yards, about 30 yards, about 50 yards, about

2 street block, about 3 street blocks, etc.) of the pick-up unit, the service provider may update a presentation of the icon representing the location of the currently active pick-up unit on the map from a first state to a second state to indicate the user is near the pick-up unit. In some instances, the predetermined distance or proximity may be measured in terms of absolute distance (i.e., “as the crow flies”), while in other instances the distance may be measured in terms of travel distance of the user’s mobile device to reach the mobile pick-up unit.

[0019] In some implementations, upon selection of the icon in the second state from the map view page, a proximity page may be presented by the service provider to appear on the companion application. In some implementations, the proximity page may include one or more interactive icons or other controls that, upon selection, may implement a functionality of the pick-up unit. For instance, selection of the interactive icon or control on the proximity page of the companion application or website may cause the mobile pick-up site to produce sound(s), emit light(s), emit smoke, activate a bubble machine, activate a motor to move parts of the pick-up unit, or perform other sensory functions. In some examples, selection of the interactive icon or control may cause a request to be sent from the user’s mobile device to the service provider, requesting to actuate one more sensory functions of the pick-up unit. The request may or may not specify a particular sensory function of the pick-up unit to be actuated. Responsive to receiving the request from the mobile device, the service provider may send a command to the pick-up unit to actuate one more sensory functions of the pick-up unit.

[0020] This brief introduction is provided for the reader’s convenience and is not intended to limit the scope of the claims. Furthermore, the techniques described in detail below may be implemented in a number of ways and in a number of contexts. One example implementation and context is provided with reference to the following figures, as described below in more detail. However, the following example implementation and context is but one of many.

EXAMPLE ARCHITECTURE

[0021] FIG. 1 illustrates an example architecture 100 usable by a service provider 102 to notify users of items offered for acquisition from one or more pick-up units. In the illustrated example, a mobile pick-up unit 104 is shown. However, the techniques described in this example are applicable to fixed and/or mobile pick-up units. In this example, the service provider 102 provides particular item(s) for acquisition and designates one or more predetermined locations and times at which a mobile pick-up unit 104 will be present for users to pick up the item(s). In some examples, the service provider 102 provides information about the item(s) available for acquisition, the scheduled locations and times of pick up, and other information via a companion application that can be installed on mobile devices 106(1)-(N) (collectively “mobile devices 106”) of users 108(1)-(N) (collectively “users 108”). In other examples, the service provider 102 may provide such information via a website that is accessible via a browser of the mobile devices 106.

[0022] The service provider 102 may be hosted by one or more computing devices or servers and may communicate with the mobile pick-up unit 104, the mobile devices 106, or other computing devices or servers via one or more networks 110. The networks 110 may include wireless and/or wired networks, including mobile telephone networks, wide area networks (WANs), and so forth.

[0023] The service provider 102 may communicate with the one or more users, which may include users 108 using mobile devices 106, by sending notifications about the item(s) for acquisition at the mobile pick-up

unit 104 for the current period of time and/or receiving inputs from the mobile devices 106 via the companion application. For instance, the service provider 102 may communicate with mobile devices 106 by providing the example user interfaces 112 and 114. As described in detail below, the user interfaces 112 and 114 include information to purchase the item(s) offered for acquisition and pick-up at the mobile pick-up unit 104, the current location of the mobile pick-up unit 104, future location(s) of the mobile pick-up unit 104, and/or an indication of the user's current proximity to the mobile pick-up unit 104.

[0024] The mobile devices 106 may include virtually any type of electronic device or computing device that can exchange information with another device. For example, the mobile devices 106 may be any one or more of mobile telephones, smart telephones, notebook computers, tablets, gaming consoles, desktop computers, music players, electronic book (eBook) reader devices, vehicle computing devices, kiosks, and/or other types of electronic devices. As described above, the service provider 102 may provide the notification and details associated with the mobile pick-up unit to the mobile devices 106 (or any other device) through the companion application. Additionally or alternatively, the service provider 102 may provide the information through a browser, a third party application, and/or through messaging services such as multimedia message service (MMS), email, and other messaging services. For instance, the users 108 may access a website of the service providers 102 with a desktop computer or vehicle computing devices to obtain the details associated with the mobile pick-up unit 104.

[0025] The service provider 102 may also communicate with the mobile pick-up unit 104 to determine a status of the mobile pick-up unit 104, tracking the current quantity of the item at the mobile pick-up unit 104, and/or sending instructions to the mobile pick-up unit 104 to implement a functionality of the mobile pick-up unit 104.

[0026] For instance, the service provider 102 may determine that the mobile device 106(1) of user 108(1) is within a threshold distance of the mobile pick-up unit 104. Additionally, the service provider 102 may receive a request 116 from the mobile device 106(1) of user 108(1) to implement a functionality of the mobile pick-up unit 104. In some implementations, the service provide 102 may receive the request and send an activation signal 118 to the mobile pick-up unit 104 to cause the mobile pick-up unit 104 to implement that requested functionality. In some instance, the request 116 and the activation signal may be sent via the network(s) 110.

EXAMPLE COMPUTING ARCHITECTURE

[0027] FIG. 2 shows a block diagram of an illustrative computing architecture 200 to provide notifications regarding the item for acquisition at the mobile pick-up unit 104 and/or provide one or more user interfaces (such as user interfaces 112 and 114) of the companion application of the service provider 102. The computing architecture 200 may include one or more computing devices 202 that may be implemented in a distributed or non-distributed computing environment.

[0028] The computing devices 202 may include one or more processors 204 and one or more computer-readable media 206 that stores various modules, applications, programs, or other data. The computer-readable media 206 may include instructions that, when executed by the one or more processors 204, cause the processors to perform the operations described herein for the service provider 102. The computing devices may also include one or more network interfaces 208 to allow communication between the service provider 102 and the

mobile pick-up unit 104 and or between the service provider 102 via the companion application and a mobile device (such as one of mobile devices 106) of a user. The network interfaces 208 may support both wired and wireless connection to various networks, such as cellular networks, radio, Wi-Fi networks, short range networks (e.g., Bluetooth®), infrared (IR), and so forth.

5 [0029] Implementations may be provided as a computer program product including a non-transitory machine-readable storage medium having stored thereon instructions (in compressed or uncompressed form) that may be used to program a computer (or other electronic device) to perform processes or methods described herein. The machine-readable storage medium may include, but is not limited to, hard drives, floppy diskettes, 10 optical disks, CD-ROMs, DVDs, read-only memories (ROMs), random access memories (RAMs), EPROMs, EEPROMs, flash memory, magnetic or optical cards, solid-state memory devices, or other types of media/machine-readable medium suitable for storing electronic instructions. Further, implementations may also be provided as a computer program product including a transitory machine-readable signal (in compressed or uncompressed form). Examples of machine-readable signals, whether modulated using a carrier or not, include, but are not limited to, signals that a computer system or machine hosting or running a computer 15 program can be configured to access, including signals downloaded through the Internet or other networks. For example, distribution of software may be by an Internet download.

[0030] In some implementations, the computer-readable media 206 may store an item management module 210, a pick-up unit module 212, and a companion application module 214. In some implementations, one or more datastores may be included in the computing architecture 200, accessible by the computing device 202.

20 The one or more datastores may include an item datastore 216 and a subscription datastore 218.

[0031] In some implementations, the item management module 210 may identify one or more items offered by the service provider 102 for pick-up at a location of the mobile pick-up unit 104. In some implementations, the item management module 210 may access the item datastore 216 and the item information 220 for each item in the item datastore to determine the one or more items for sale and/or pick-up at the location of the 25 mobile pick-up unit 104.

[0032] As mentioned above, the computer-readable media 206 may also store a pick-up unit module 212. The pick-up unit module 212 may include the locations module 222 to store location information associated with the mobile pick-up unit 104. For instance, the location module 222 may store one or more predetermined physical geographic locations (e.g., street addresses or GPS coordinates) for the mobile pick-up unit 104 for a 30 predetermined time period (e.g., day, week, etc.). In some implementations, the location module 222 may store information associated a perimeter around each of the one or more predetermined locations of the mobile pick-up unit 104. For instance, the perimeter may comprise a geo-fence or a virtual perimeter around a predetermined location of the mobile pick-up unit. The virtual perimeter may have a radius of 20 yards, 30 yards, 50 yards, from at least 15 yards to about 50 yard, 2 street blocks, etc. around the predetermined location (such global 35 positioning system coordinates or a street address) of the mobile pick-up unit 104. Example techniques for establishing a geographic parameter are described in Appl. Ser. No. 14/853,152, entitled “Techniques for Dynamic Geographic Fencing,” the entity of which is incorporated by reference. In other examples, the perimeter may comprise an estimated time to arrival at the mobile pick-up site, a measured signal strength, or

other location-based perimeter. As described above, aspects of the user interfaces of the companion application or website are altered based on determining that a mobile device of a user is within the perimeter.

[0033] In some implementations and as described below, the location module 222 of the pick-up unit module 212 may communicate with one or more modules of the companion application module 214 in order to determine a location of the mobile device of the user relative to one or more of the predetermined physical geographic locations (e.g., street addresses or GPS coordinates) of the mobile pick-up unit 104.

[0034] In some implementations, the pick-up unit module 212 includes a unit status module 224 to receive information regarding the status of the mobile pick-up site 104. For instance, the unit status module 224 may request and/or receive information about the current functionality or status of auxiliary units (e.g., auxiliary lights, speakers, smoke machine, etc.) of the mobile pick-up unit 104. In some implementations, the unit status module 224 may communicate with the companion application module 214 or receive a request (such as request 116 from mobile device 106(1) of user 108(1)) of to provide instructions to the mobile pick-up unit 104 to implement the functionality.

[0035] The computer-readable media 206 may also store a companion application module 214 to control the features of companion application. For instance, the companion application module 214 may communicate, via the network interface(s) 208, inputs received from the mobile device of a user using a particular interface of the companion application to the mobile pick-up unit 104. In other implementations, as described above, the companion application may allow the user to purchase the item offered at the mobile pick-up unit 104. FIG. 2 shows that the companion application module 214 may include a notification module 226, a location information module 228, and a user interface module 230.

[0036] The notification module 226 may provide notification to the mobile devices of the users. For instance, the notification module 226 may gather item information for the item management module 210 to create a notification to send, via network interface(s) 208, to the mobile devices of users. In some instance, the notification module 228 may access the subscription datastore 218 to determine which users have enable notifications associated with the mobile pick-up unit on the companion application.

[0037] The location information module 228 may determine or access geographical location information associated with the mobile device operating the companion application. Furthermore, the location information module 228 may access the subscription datastore 218 to determine that the user has given consent to allowing the service provider 102 to obtain the location information. In some implementations, the determined geographical location information may allow the user to receive the notifications from the notification module 226. For instance, the notifications provided by the service provider 102 regarding the mobile pick-up unit 104 may only be provided to user within a predetermined geographical distance from the pick-up unit (e.g., 10 miles, 100 miles, etc.) or may only be provided to user who live in specific zip codes.

[0038] Furthermore, as described above, the location information may allow the location information module 228 to determine the physical proximity (or distance between) of the mobile device of the user to the mobile pick-up unit 104. In some implementations, the location information may allow the module 228 to determine whether the mobile device is within the perimeter of the geo-fence around the mobile pick-up unit 104.

[0039] The user interface module 230 of the companion application module 214 may generate multiple user interfaces for presentation on the mobile devices of the user. For instance, the user interface module 230 may alter an icon representing the predetermined location of the mobile pick-up unit 104 based on the location information of the mobile device of the user gathered by the location information module 228. Furthermore, once the icon is altered, the user interface module 230 may receive inputs or selections on the user interface presenting the icon. These inputs may be to manipulate or initiate a visual, audible, and/or other sensory feature associated with the mobile pick-up unit 104.

[0040] In some implementations, the inputs on the user interface to manipulate the features associated with the mobile pick-up unit 104 may be available to a limited set of users. Additionally or alternatively, an additional input may be present on the user interface to manipulate the features associated with the mobile pick-up unit 104 based on details associated with the user. For instance, the companion application module 214 may access the subscription datastore 218 to determine whether the user is a first-time user, a frequent purchaser, a paid subscriber, or the like. In some implementations, the companion application module 214 may make an extra feature or a feature not available to all users of the mobile pick-up unit 104 available to the user based on this determination.

[0041] In some implementations, the user interface module 230 may communicate with the item management module 210 and the pick-up unit module 212 to generate user interfaces including item details of the particular item(s) available for pick-up at the mobile pick-up unit 104 and/or user interfaces including information of a current and future locations of the mobile pick-up unit 104.

[0042] FIG. 3 shows a block diagram of an illustrative computing architecture 300 and other features of an example mobile pick-up unit 104. As shown in FIG. 3, the mobile pick-up unit 104 is illustrated as a motor vehicle such as a van, box truck or any other vehicle. In some implementation, the mobile pick-up unit 104 may be manned, unmanned, or an autonomous vehicle. That is, the mobile pick-up unit 104 may be capable of sensing the driving environment and navigating without human input. In other implementations, the mobile pick-up unit 104 may be implemented by other type of vehicles such as drone aircraft or the like.

[0043] In some implementations, the mobile pick-up unit 104 may provide location information (e.g. GPS coordinates or street address) to computing devices 202 of the service provider 102. Furthermore, the mobile pick-up unit 104 may receive instructions (such as activation signal 118) from the computing devices 202 of the service provider 102 to initiate a visual, audible, and/or other sensory feature associated with the mobile pick-up unit 104.

[0044] In some implementations, the mobile pick-up unit 104 may include one or more processors 304 and one or more computer-readable media 306 that stores various modules, applications, programs, or other data. The computer-readable media 306 may include instructions that, when executed by the one or more processors 304, cause the processors to perform the operations described herein for the mobile pick-up unit 104. Similar to the computing devices described above, the mobile pick-up unit 104 may also include one or more network interfaces 308 to allow communication between the mobile pick-up unit 104 and the computing devices 202 of the service provider 102 and/or between the mobile pick-up unit 104 and a mobile device (such as one of mobile devices 106) of a user or an electronic device of an operator of the mobile pick-up unit 104.

[0045] As described above, a control signal indicating a selection by the user on a user interface presented on a mobile device is received by the computing devices 202 of the service provider 102. In some implementations, the computing devices 202 of the service provider 102 may communicate with modules stored by one or more computer-readable media 306 of the mobile pick-up unit 104 to initiate the visual, audible, and/or other sensory feature associated with the mobile pick-up unit 104.

[0046] In some implementations, the computer-readable media 306 may store an item location module 310 to provide confirmation that the mobile pick-up unit 104 is at one of the predetermined geographical locations. For instance, the location module 310 may provide, via network interface(s) 308, GPS coordinates or a nearest physical street address to the location module 222 of the pick-up unit module 212. As described above, the location module 222 may determine a geo-fence or other perimeter around the GPS coordinates or the nearest physical street address of the mobile pick-up unit 104. In other implementations, the location module 310 may generate its own perimeter based on the information gathered by the location module 310. In this instance, the location module 310 may provide the perimeter information to the computing devices 202 of the service provider 102.

[0047] The mobile pick-up unit 104 may also include auxiliary light(s) 312, auxiliary speaker(s) 314, and other auxiliary functions 316. As described above, the auxiliary light(s) 312, auxiliary speaker(s) 314, and other auxiliary functions 316 may provide a visual, audible, or other sensory feedback to a user. Furthermore, as described above, a user may initiate the auxiliary light(s) 312, auxiliary speaker(s) 314, and other auxiliary functions 316 of the mobile pick-up unit 104 via a user interface on the companion application when the user is within a threshold distance of the mobile pick-up unit 104. In some implementations, the auxiliary light(s) 312, auxiliary speaker(s) 314, and other auxiliary functions 316 of the mobile pick-up unit 104 may be initiated by a physical interaction between a user and the mobile pick-up unit 104.

[0048] The auxiliary light(s) 312 may include flashing lights, strobe lights, sequential lighting, spot lights, color lights, or any other type of lights. The auxiliary speakers(s) may provide any type of sounds such as spoken words and/or sound effects. In some implementations, the sounds produced by the auxiliary speaker(s) 314 may be based on a particular item at the mobile pick-up unit 104 for the particular period of time. For instance, if the item is a chef knife set, the sound produced by the auxiliary speaker(s) 314 may be a sound associated with a chef's knife being sharpened on a sharpening steel.

[0049] The other auxiliary functions 316 may include smoke machine(s) 318, bubble machine(s) 320, motion machine(s) 322, and/or other machine(s) 324. In some implementations, the motion machine(s) 322 may produce a movement of parts of the motor vehicle. For instance, the motion machine(s) 322 may cause movement of rotating sign giving an appearance of salmon pumping out of water. In some implementations, the other machine(s) 324 may include machines that produce an olfactory sensation. For instance, if the item is a chocolate chip cookie, the other machine(s) 324 may produce a smell similar to a fresh baked chocolate chip cookie.

[0050] In some implementations, a type or level of functionality requested by the user may be based on the proximity of the mobile device to the mobile pick-up unit 104. For instance, the auxiliary light(s) 312 and/or auxiliary speaker(s) 314 may be activated when the mobile device of the user is at a first range within the

perimeter of the mobile pick-up unit 104 while one or more of the other auxiliary function 316 may be activated when the mobile device of the user is at a second range within the perimeter of the mobile pick-up unit 104.

EXAMPLE INTERFACES

[0051] FIGS. 4-6 illustrate sequences of examples user interfaces that may be generated by the user interface module 230 of the companion application module 214 and presented for display on a mobile device of a user.

[0052] FIGS. 4 illustrates example user interfaces 400, 402, and 404 which may be presented to a mobile device of a user when the mobile device of the user is within a predetermined distance of a mobile pick-up unit. FIG. 4 illustrates a landing page or user interface 400 within the companion application provided by the service provider 102 for the mobile pick-up unit 104. Interface 400 may display details about the item(s) for acquisition at the mobile pick-up unit 104. As shown at 406 in interface 402, the current items for acquisition for pick-up at the mobile pick-up unit are "Two 24 oz. USDA Prime Porterhouse Steaks." User interface 400 also includes an example image of the items, a cost (i.e., \$20) of the items, a regular cost (i.e., \$ 40) of the items, and a quantity limit (i.e., "Limit 1") of the items. Furthermore, interface 400 may include a "Buy Now" selection area 408. In some implementations, upon selection of area 408 a transition to another interface such a list view interface similar to interface 502 in FIG. 5 showing textual details associated with the remaining stops of the mobile pick-up unit 104.

[0053] Interface 400 includes arrow 410 for transitioning to user interface 402 to provide a map view including the predetermined locations associated with "Today's Stops" of the mobile pick-up unit. As shown on in FIG. 4, interface 402 may include a map view of a geographic area. The map view interface 402 may display a current location and future location of the pick-up unit for the time period (e.g., day). As shown, the interface 402 includes map markers 412(1) and 412(2) which indicates future locations of the pick-up unit. As described below with reference to FIG.5, each of map markers 412(1) and 412(2) are selectable for providing further details (e.g., time of day, specific street address, a buy and pick-up at this location option, etc.) regarding the future location.

[0054] Furthermore, the map view interface 402 may display a user location indicator 414 indicating the current location of the mobile device of the user. As described above, location information associated with the mobile device of the user may be accessed by the location information module 228 of the service provider 102 to determine a current location of the mobile device of the user. In some implementations, the map view interface 402 may display an icon 416 indicating the current location of the mobile pick-up unit within the geographic area. Icon 416 is illustrated with multiple arms to indicate that the mobile device of the user (represented by user location indicator 414) displaying interface 402 is within a predetermined distance from the mobile pick-up unit. For instance, that the mobile device is within 30 yards of the mobile pick-up unit.

[0055] As described above, in some implementations, the location information module 228 of the companion application module 214 and the location module 222 of the pick-up unit module 212 may compare location information (e.g., GPS coordinates) of the mobile device of the user and the predetermined location information of the mobile pick-up unit, respectively, to determine whether the mobile device and the mobile pick-up unit are within a predetermined distance of each other. In other implementations, the location module

222 may set a perimeter of a predetermined radius around a predetermined location of the mobile pick-up unit while the location information module 228 of the companion application module 214 may determine that the mobile device is within the perimeter. In either event, when the mobile device of the user is within a predetermined distance from the mobile pick-up unit or within the perimeter around the mobile pick-up unit, icon 416 may be presented on the map view interface 402 to indicated the proximity of the mobile device (and the user) to the mobile pick-up unit.

[0056] In some implementations, the icon 416 may be selectable by the user of the mobile device. Furthermore, upon selection of icon 416, an interface 404 may be presented on the mobile device. Interface 404 may explicitly indicate that the mobile pick-up unit is nearby. In some implementations, the interface 404 may include a selection area 418 to allow the user to buy and pick up at the current location of the mobile pick-up unit. Upon selection of selection area 418, a confirmation user interface page may be presented to the user on the mobile device to complete the purchase of the item, in this example the “steaks,” at the mobile pick-up unit.

[0057] As shown in FIG. 4, the interface 404 also includes an interactive control 420 to send a request to the service provider to initiate a visual, audible, and/or other sensory feature associated with the mobile pick-up unit. For instance, upon selection of the interactive control 420, the companion application module 214 may receive the request and communicate with the pick-up unit module 212 (or the unit status module 224) to cause an activation signal to be send to the mobile pick-up unit to cause activation of one or more of the auxiliary light(s) 312, auxiliary speaker(s) 314, and/or auxiliary function(s) 316. In this way, the selection of the interactive control 420 may appear to “poke” the mobile pick-up unit and provide a sensory feedback to the user of the mobile device that they are within a proximity of the mobile pick-up unit. While interactive control 420 is illustrated with the text “Don’t Tap Me,” any number of alternative implementations of the control 420 are envisioned with or without text. Furthermore, in other implementations, the control 420 may be any type on interactive control or icon presented on another interface (such as interface 402). For instance, the interactive control may be presented in a menu on an interface or appear as a button on an interface.

[0058] FIGS. 5 illustrates another example sequence of user interfaces presented by the companion application when the mobile device of the user is within a predetermined distance of the mobile pick-up unit. This example sequence shows the user interfaces 402, 500, and 502 which may be presented on a mobile device of a user upon selection of features of the map view interface 402 described above with regard to FIG. 4.

[0059] FIG. 5 is illustrated as beginning with map view user interface 402 as described above. However, it is noted that landing page interface 400 is omitted from FIG. 5 to reduce redundancy. As described above, map view interface 402 includes map markers 412(1) and 412(2) which indicates future locations of the mobile pick-up unit. In some instances, each of map markers 412(1) and 412(2) are selectable for providing further details regarding the future locations.

[0060] User interface 500 provides an example user interfaces presented on a mobile device of the user upon the selection of map marker 412(1). As shown on interface 500, upon selection of map marker 412(1), a text box 504 may be presented above the map marker 412(1) to include a specific time the mobile pick-up unit will be at the future location. In addition, text box 504 may include the specific street address of the future

location. In some implementations, upon selection of map marker 412(1) a selection box 506 may be presented on interface 502 to complete the purchase of the item or “buy & pick up here.” In some implementations, a selection of area 506 may cause a transition to a confirmation user interface (not shown) to complete the purchase of the item.

5 [0061] User interface 500 (and map view interface 402) also includes a list view selection 508 to toggle between the map view and a list view interface 502. The list view interface 502 may include a textual list including information associated with the current location 510 and the future locations 512 and 514 of the mobile pick-up unit. As shown, the list view interface 502 includes a time frame that the mobile pick-up unit will remain at the current location 414, a neighborhood, and a street address of the current location.

10 Furthermore, similar to selection area 506 described above, each of the list option in interface 502 may include a “buy & pick up here” selection area 518. As described above, selection of this area 518 may cause transition to a confirmation interface to confirm and complete the purchase of the item for pick-up at the corresponding location of the mobile pick-up unit.

[0062] In some implementations, list view interface 502 may include a map view selection 516 to toggle
15 back to the map view interface 402 or 500.

[0063] FIGS. 6 illustrates another example sequence of user interfaces presented by the companion application when the mobile device of the user is determined to move from outside a predetermined distance of the mobile pick-up unit to inside the predetermined distance of the pick-up unit. This example sequence shows the user interfaces 400, 600, 500, and 502 which may be presented on a mobile device of a user.

20 [0064] Landing page interface 400 may be presented on the mobile device of the user as described above with regard to FIG. 4. In some implementations, the landing page interface 40 may be presented on the mobile device regardless of whether the mobile device is outside or inside a predetermined distance of the pick-up unit. Similar to FIG. 4 described above, upon selection of arrow 410 a transition to another map view interface 600.

[0065] The map view interface 600 may display a user location indicator 602 to indicate a current location
25 of the mobile device accessing the map view interface 600. Additionally, the map view interface 600 may include an icon 604 indicating the current location of the mobile pick-up unit within the geographic area. Icon 604 is illustrated without the multiple arms to indicate that the current location of the mobile device of the user (shown at user location indicator 602) displaying interface 600 is outside a predetermined distance from the mobile pick-up unit. For instance, that the mobile device may not be within 30 yards of the mobile pick-up
30 unit.

[0066] In some implementations, upon selection icon 604, a text box 606 may be presented above the icon 604 to include a specific time the pick-up unit will remain at the current location. In addition, text box 606 may include the specific street address of the current location. In some implementations, upon selection of icon 604, a selection box 608 may be presented on interface 600 to enable the user to complete the purchase of the item
35 or “buy & pick up here.” In some implementations, a selection of area 608 may cause a transition to a confirmation user interface (not shown) to complete the purchase of the item.

[0067] FIG. 6 next illustrates interface 402 as described with reference to FIG. 4. However, at some point between the presentation of map view interface 600 and interface 402, the user has moved (as show by the

change in position of the user location indicator 602 to the position of the user location indicator 414) within the predetermined distance to the mobile pick-up unit as indicated by change from icon 602 to icon 414. A transition from the icon 602 to the icon 414 may occur at any point when the mobile device of the user is detected within the predetermined distance from the mobile pick-up unit. For instance, the transition may occur on a single user interface such as map view interface 500 or as the user selects to navigated between two user interfaces such as between map view interface 600 and map view interface 500.

[0068] FIG. 6 also includes list view interface 502 as described above. In some implementations, the list view interface 502 may be presented to the user upon selection of the list view selection 508.

EXAMPLE PROCESS

[0069] FIG. 7 is a flow diagram of illustrative process for implementing the techniques described above of causing the mobile pick-up unit to output a light, sounds, or visual stimulus. The processes are illustrated as a collection of blocks in a logical flow graph, which represent a sequence of operations that can be implemented in hardware, software, or a combination thereof. In the context of software, the blocks represent computer-executable instructions stored on one or more computer-readable storage media that, when executed by one or more processors, perform the recited operations. Generally, computer-executable instructions include routines, programs, objects, components, data structures, and the like that perform particular functions or implement particular abstract data types. The order in which the operations are described is not intended to be construed as a limitation, and any number of the described blocks can be combined in any order and/or in parallel to implement the processes. Furthermore, the processes are described with reference to the environment 100 and may be performed by the computing architecture 200 or mobile pick-up unit 104. Of course, the processes may be performed in other similar and/or different environments.

[0070] At 702, a service provider may determine that a mobile device associated with a user is within a geographic perimeter of a pick-up unit. For instance, the service provider may access location information associated with a mobile device to determine whether the location of the mobile device is within a threshold distance to a predetermined location of the pick-up unit.

[0071] At 704, the service provider may cause of a first interface on the mobile device. The first interface may include an icon representing the location of the pick-up unit based on based on determining that the mobile device is within the geographic perimeter. For instance, the icon may be presented on the first interface as shown in FIG. 6 at 416.

[0072] At 706, the service provide may receive an indication of a selection of the icon on the first interface. While, at 708, the service provide may cause presentation of a second interface including an interactive control usable to actuate a sensory feature at the pick-up unit. For instance, the second interface may be similar to interface 4040 shown in FIG. 4.

[0073] At 710, the service provider may receive a selection of an interactive control on the second interface. For instance, the service provider may receive an indication of a selection of interactive control 420 of interface 404.

[0074] At 712, the service provider may cause output by a sensory feature of the pick-up site. For instance, upon receiving selection of interactive control 420 of interface 404, the service provider may send an activation

signal to the pick-up unit to cause an auxiliary lighting element to emit light, an auxiliary speaker to emit sounds, or other auxiliary machine to produce a sensory component.

CONCLUSION

[0075] Although embodiments have been described in language specific to structural features and/or methodological acts, it is to be understood that the disclosure is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed herein as illustrative forms of implementing the embodiments.

[0076] Embodiments of the present disclosure can be described in view of the following clauses:

[0077] Clause 1. One or more non-transitory computer-readable storage media storing computer-readable instructions that, when executed, instruct one or more processors to perform operations comprising: receiving, from a mobile device of a user, an indication of a purchase of an item; providing an instruction to the mobile device to present an interface, the interface including an icon representing a location of a pick-up unit at which the item is to be picked up; detecting a location of the mobile device; determining that the location of the mobile device is within a threshold distance to the location of the pick-up unit; providing an instruction to the mobile device to alter an appearance of the icon representing the location of the pick-up unit on the interface based at least in part on determining that the location of the mobile device is within the threshold distance to the location of the pick-up unit; receiving, from the mobile device and while the mobile device is within the threshold distance to the location of the pick-up unit, an indication of a selection of an interaction control of the interface usable to cause sensory feedback at the pick-up unit; and responsive to receiving the indication of the selection of the interaction control, sending an instruction to the pick-up unit to cause the pick-up unit to provide the sensory feedback.

[0078] Clause 2. The one or more non-transitory computer-readable storage media as recited in clause 1, wherein the sending the instruction to the pick-up unit comprises sending an instruction to at least one of: cause a lighting element of the pick-up unit to emit light; cause a speaker of the pick-up unit to emit sound; cause a first machine of the pick-up unit to emit smoke; cause a second machine of the pick-up unit to emit bubbles; cause a third machine of the pick-up unit to emit scent; or cause a fourth machine of the pick-up unit to produce motion.

[0079] Clause 3. The one or more non-transitory computer-readable storage media as recited in clause 1, wherein the threshold distance is about 30 yards.

[0080] Clause 4. The one or more non-transitory computer-readable storage media as recited in clause 5, wherein receiving the indication of the purchase of the item comprises receiving an indication of a selection of the location of the pick-up unit at which the item is to be picked up, from among multiple available locations of the pick-up unit.

[0081] Clause 5. A method comprising: under control of one or more computing systems configured with specific executable instructions, determining that a mobile device is within a geographic perimeter of a pick-up unit; causing presentation of a first interface, the first interface including an icon representing a location of the pick-up unit based on determining that the mobile device is within the geographic perimeter; receiving an indication of a selection of the icon on the first interface; causing presentation of a second interface based at

least in part on the selection of the icon, the second interface including an interactive control usable to actuate a sensory feature at the pick-up unit; receiving an indication of a selection of the interactive control on the second interface; and causing output by the sensory feature at the pick-up unit based at least in part on the selection of the interactive control.

5 **[0082]** Clause 6. The method as recited in clause 5, wherein the causing the output by the sensory feature at the pick-up device comprises: transmitting a signal to the pick-up unit to cause the output by the sensory feature associated with the pick-up unit based at least in part the selection of the interactive control.

10 **[0083]** Clause 7. The method as recited in clause 5, wherein the pick-up unit comprises a mobile pick-up unit that is movable between multiple predetermined locations, and the sensory feature comprises at least one of an auxiliary light, an auxiliary speaker, a smoke machine, a bubble machine, or a motion machine.

15 **[0084]** Clause 8. The method as recited in clause 5, wherein the geographic perimeter is a radius around the pick-up unit, the pick-up unit having predetermined global positioning system (GPS) coordinates.

20 **[0085]** Clause 9. The method as recited in clause 8, wherein the radius around the pick-up unit is at least about 15 yards and at most about 50 yards.

25 **[0086]** Clause 10. The method as recited in clause 5, wherein determining that a mobile device is within the perimeter further comprises: determining global positioning system (GPS) coordinates of the mobile device; and determining that the GPS coordinates of the mobile device are within a predetermined distance of GPS coordinates of the location of the pick-up unit.

30 **[0087]** Clause 11. The method as recited in clause 5, wherein the pick-up unit includes at least one item for acquisition and the sensory feature is specific to the item.

35 **[0088]** Clause 12. A system comprising: one or more processors; one or more computer-readable media storing computer-executable instructions that, when executed by the one or more processors, cause the one or more processors to perform acts comprising: providing an instruction to a mobile device to present an interface, the interface including: information associated with an item for acquisition; and multiple locations at which a mobile pick-up unit will be present at specified time periods; receiving an indication of a selected location, from among the multiple locations, the selected location corresponding to a specific time period; receiving an indication that the mobile pick-up unit is at the selected location during the specific time period; and instructing the mobile device to present an icon representing the location of the mobile pick-up unit on the interface.

40 **[0089]** Clause 13. The system as recited in clause 12, the acts further comprising: determining a distance between the mobile device and the mobile pick-up unit; and causing presentation of the icon representing the location of the mobile pick-up unit based at least in part on the distance between the mobile device and the mobile pick-up unit.

45 **[0090]** Clause 14. The system as recited in clause 13, wherein determining the distance between the mobile device and the mobile pick-up unit comprises determining that the mobile device is within a predetermined distance of the mobile pick-up unit and the acts further comprise: providing an instruction to the mobile device to present a second interface, the second interface including an interactive control; receiving an indication of a selection of the interactive control on the mobile device; and sending instruction to the mobile pick-up unit to

implement at least one function of the mobile pick-up unit based at least in part on the selection of the interactive control.

[0091] Clause 15. The system as recited in clause 14, wherein the at least one function of the mobile pick-up unit is based on the distance between the mobile device and the mobile pick-up unit.

5 [0092] Clause 16. The system as recited in clause 14, wherein the predetermined distance is about at least about 15 yards and at most about 50 yards.

[0093] Clause 17. The system as recited in clause 14, wherein the mobile pick-up unit comprises a truck, and the at least one function includes emitting light, producing sound, emitting smoke, emitting bubbles, or causing motion.

10 [0094] Clause 18. The system as recited in clause 12, the acts further comprising determining a distance between the mobile device and the mobile pick-up unit, wherein the determining comprises: accessing a first location of the mobile pick-up unit; determining a perimeter around the first location of the mobile pick-up unit; analyzing location information of the mobile device; determining a second location of the mobile device based at least in part on the second location information; determining that the second location of the mobile device is
15 outside the perimeter around the mobile pick-up unit; and causing presentation of an icon representing the location of the mobile pick-up unit based on the determining that the second location of the mobile device is outside the perimeter around the mobile pick-up unit.

[0095] Clause 19. The system as recited in clause 18, wherein the determining further comprises: analyzing third location information of the mobile device; determining a third location of the mobile device based at least
20 in part on the third location information; determining that the third location of the mobile device is within the perimeter around the mobile pick-up unit; and causing alteration of the icon representing the location of the mobile pick-up unit based on determining that the third location of the mobile device is within the perimeter around the mobile pick-up unit.

[0096] Clause 20. The system as recited in clause 12, wherein the interface includes a map of a geographical
25 area showing each of the multiple locations at which the mobile pick-up unit will be present.

CLAIMS

WHAT IS CLAIMED IS:

1. A method comprising:
 - under control of one or more computing systems configured with specific executable instructions, determining that a mobile device is within a geographic perimeter of a pick-up unit;
 - causing presentation of a first interface, the first interface including an icon representing a location of the pick-up unit based on determining that the mobile device is within the geographic perimeter;
 - receiving an indication of a selection of the icon on the first interface;
 - causing presentation of a second interface based at least in part on the selection of the icon, the second interface including an interactive control usable to actuate a sensory feature at the pick-up unit;
 - receiving an indication of a selection of the interactive control on the second interface; and
 - causing output by the sensory feature at the pick-up unit based at least in part on the selection of the interactive control.
2. The method as recited in claim 1, wherein the causing the output by the sensory feature at the pick-up device comprises:
 - transmitting a signal to the pick-up unit to cause the output by the sensory feature associated with the pick-up unit based at least in part the selection of the interactive control.
3. The method as recited in claim 1, wherein the pick-up unit comprises a mobile pick-up unit that is movable between multiple predetermined locations, and the sensory feature comprises at least one of an auxiliary light, an auxiliary speaker, a smoke machine, a bubble machine, or a motion machine.
4. The method as recited in claim 1, wherein the geographic perimeter is a radius around the pick-up unit, the pick-up unit having predetermined global positioning system (GPS) coordinates.
5. The method as recited in claim 4, wherein the radius around the pick-up unit is at least about 15 yards and at most about 50 yards.
6. The method as recited in claim 1, wherein determining that a mobile device is within the perimeter further comprises:
 - determining global positioning system (GPS) coordinates of the mobile device; and
 - determining that the GPS coordinates of the mobile device are within a predetermined distance of GPS coordinates of the location of the pick-up unit.
7. The method as recited in claim 1, wherein the pick-up unit includes at least one item for acquisition and the sensory feature is specific to the item.

8. A system comprising:
one or more processors;
one or more computer-readable media storing computer-executable instructions that, when executed by the one or more processors, cause the one or more processors to perform acts comprising:
 providing an instruction to a mobile device to present an interface, the interface including:
 information associated with an item for acquisition; and
 multiple locations at which a mobile pick-up unit will be present at specified time periods;
 receiving an indication of a selected location, from among the multiple locations, the selected location corresponding to a specific time period;
 receiving an indication that the mobile pick-up unit is at the selected location during the specific time period; and
 instructing the mobile device to present an icon representing the location of the mobile pick-up unit on the interface.

9. The system as recited in claim 8, the acts further comprising:
determining a distance between the mobile device and the mobile pick-up unit; and
causing presentation of the icon representing the location of the mobile pick-up unit based at least in part on the distance between the mobile device and the mobile pick-up unit.

10. The system as recited in claim 9, wherein determining the distance between the mobile device and the mobile pick-up unit comprises determining that the mobile device is within a predetermined distance of the mobile pick-up unit and the acts further comprise:
 providing an instruction to the mobile device to present a second interface, the second interface including an interactive control;
 receiving an indication of a selection of the interactive control on the mobile device; and
 sending instruction to the mobile pick-up unit to implement at least one function of the mobile pick-up unit based at least in part on the selection of the interactive control.

11. The system as recited in claim 10, wherein the at least one function of the mobile pick-up unit is based on the distance between the mobile device and the mobile pick-up unit.

12. The system as recited in claim 10, wherein the mobile pick-up unit comprises a truck, and the at least one function includes emitting light, producing sound, emitting smoke, emitting bubbles, or causing motion.

13. The system as recited in claim 8, the acts further comprising determining a distance between the mobile device and the mobile pick-up unit, wherein the determining comprises:

accessing a first location of the mobile pick-up unit;
determining a perimeter around the first location of the mobile pick-up unit;
analyzing location information of the mobile device;
determining a second location of the mobile device based at least in part on the second location information;
determining that the second location of the mobile device is outside the perimeter around the mobile pick-up unit; and
causing presentation of an icon representing the location of the mobile pick-up unit based on the determining that the second location of the mobile device is outside the perimeter around the mobile pick-up unit.

14. The system as recited in claim 13, wherein the determining further comprises:
analyzing third location information of the mobile device;
determining a third location of the mobile device based at least in part on the third location information;
determining that the third location of the mobile device is within the perimeter around the mobile pick-up unit; and
causing alteration of the icon representing the location of the mobile pick-up unit based on determining that the third location of the mobile device is within the perimeter around the mobile pick-up unit.

15. The system as recited in claim 8, wherein the interface includes a map of a geographical area showing each of the multiple locations at which the mobile pick-up unit will be present.

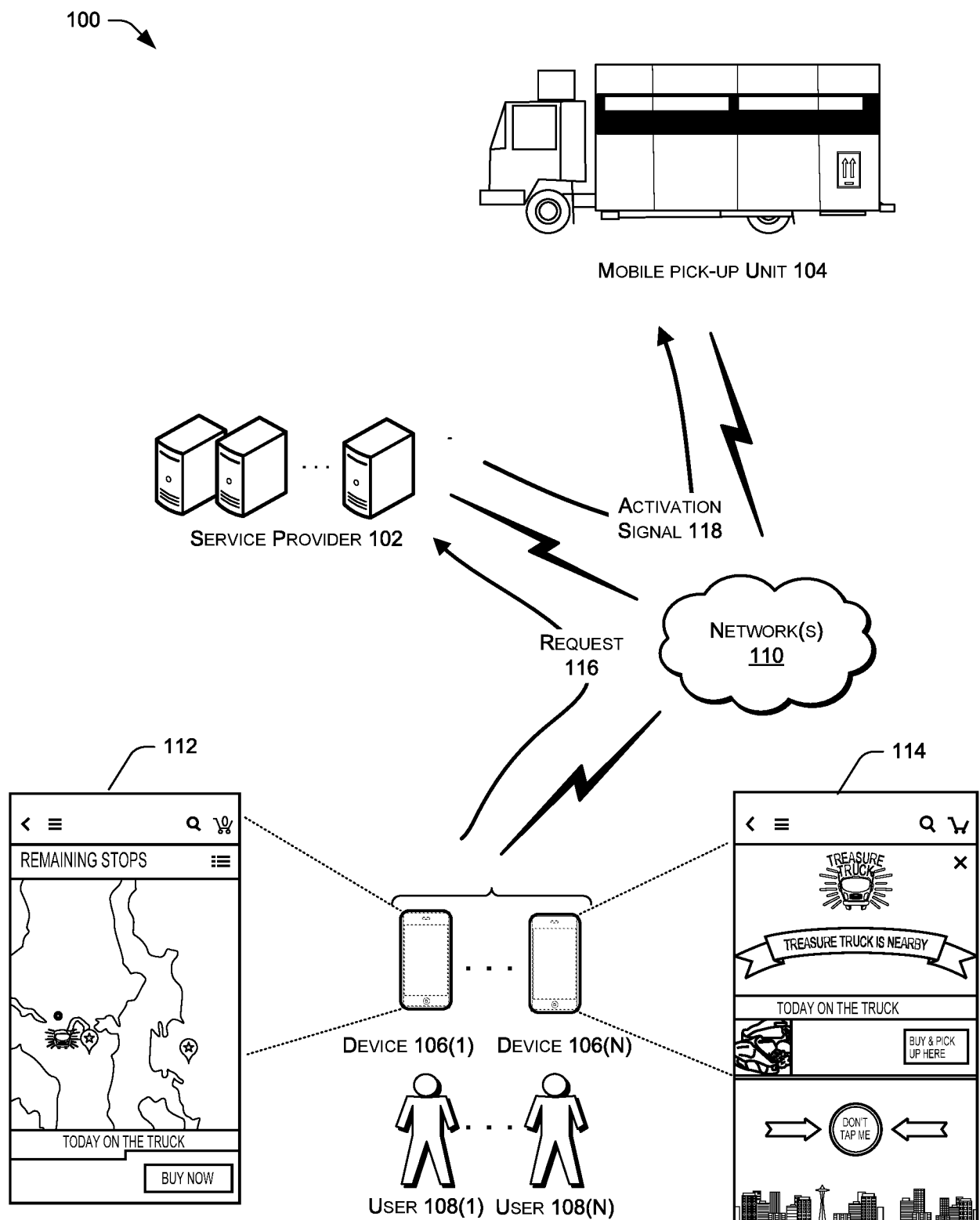


FIG. 1

200 →

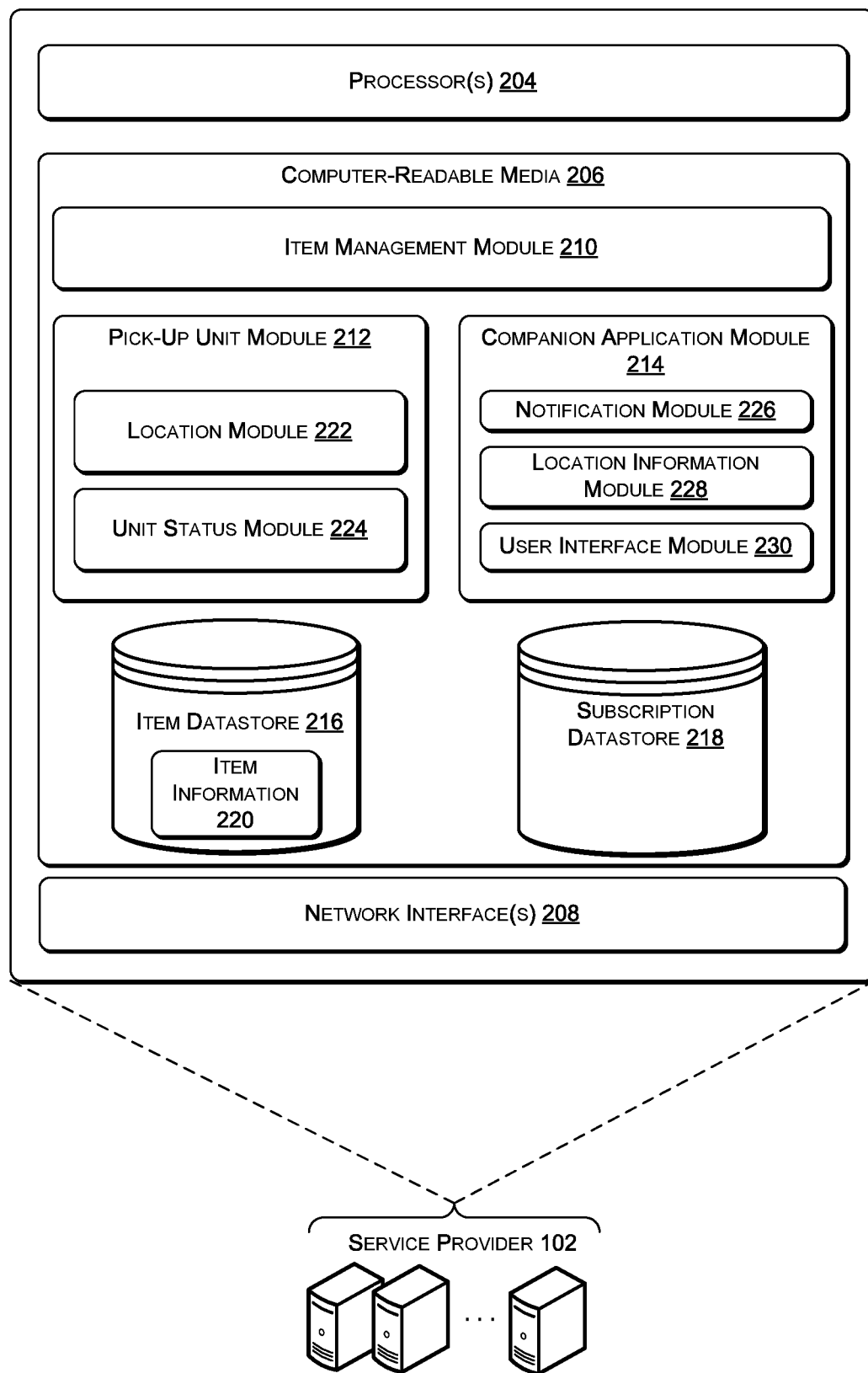


FIG. 2

300 →

3/7

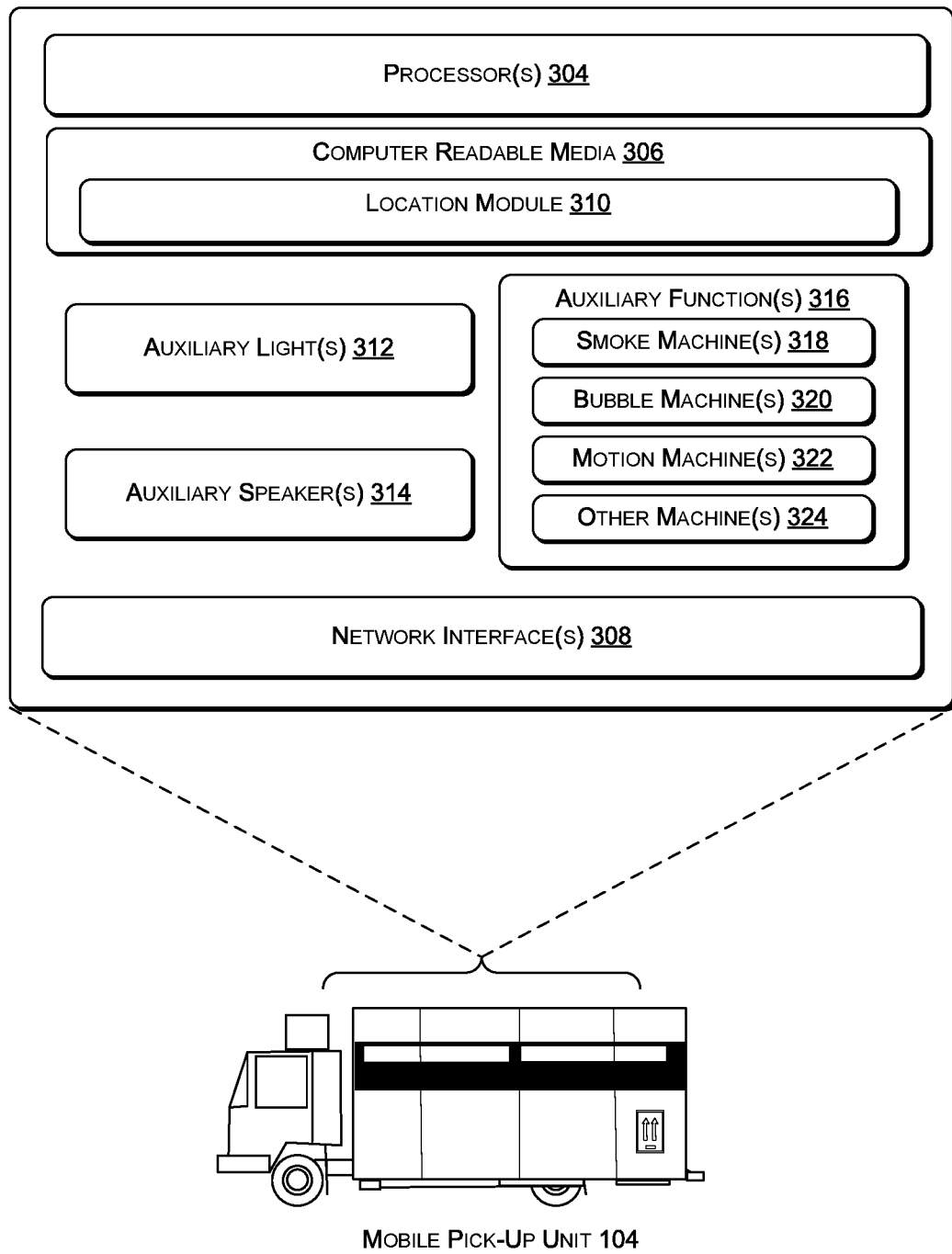


FIG. 3

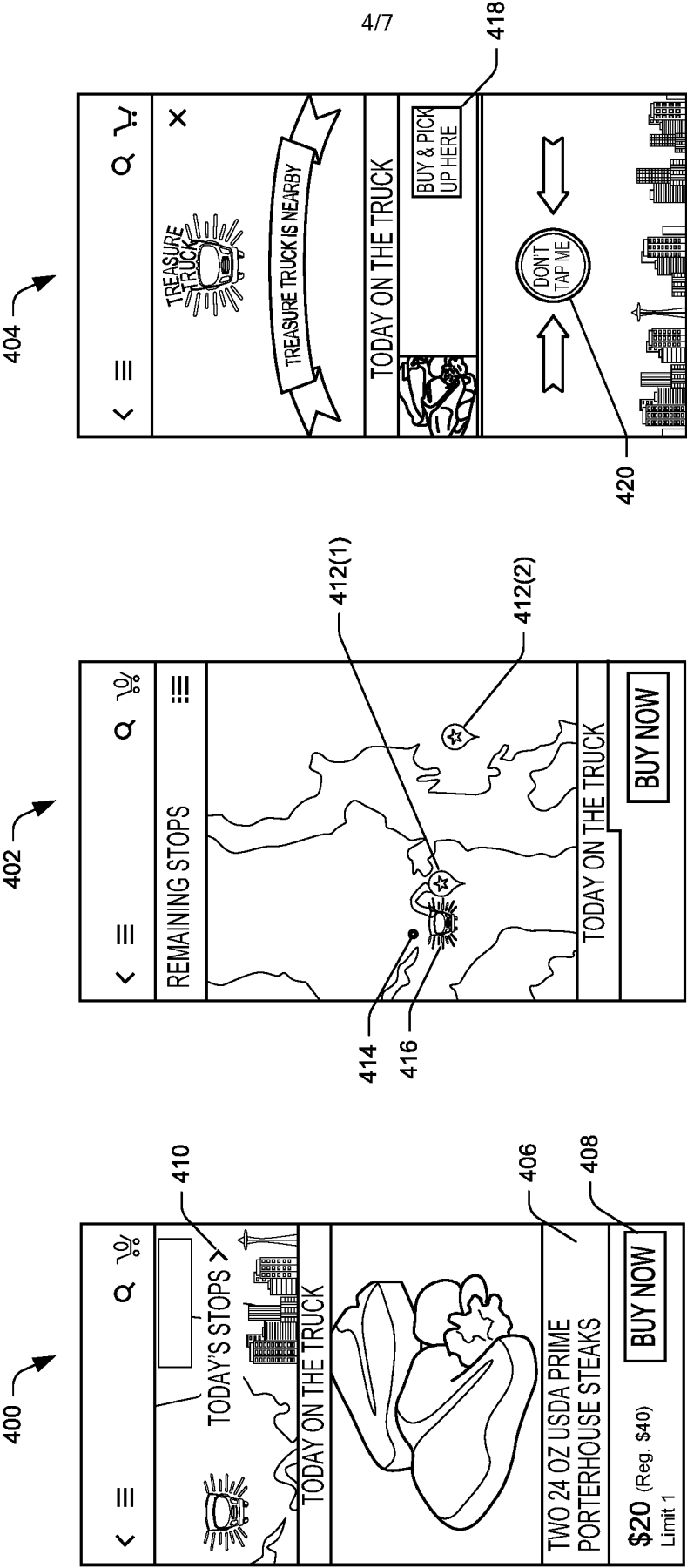


FIG. 4

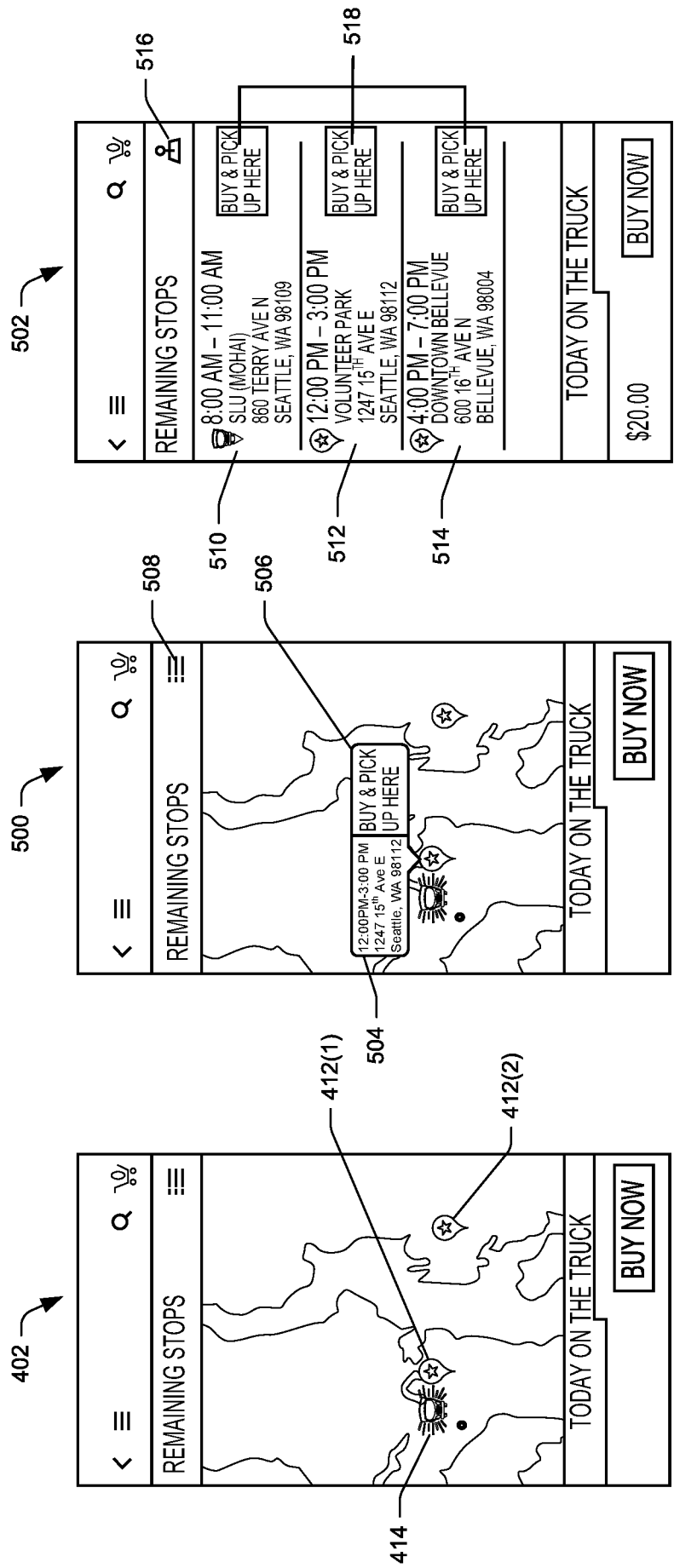


FIG. 5

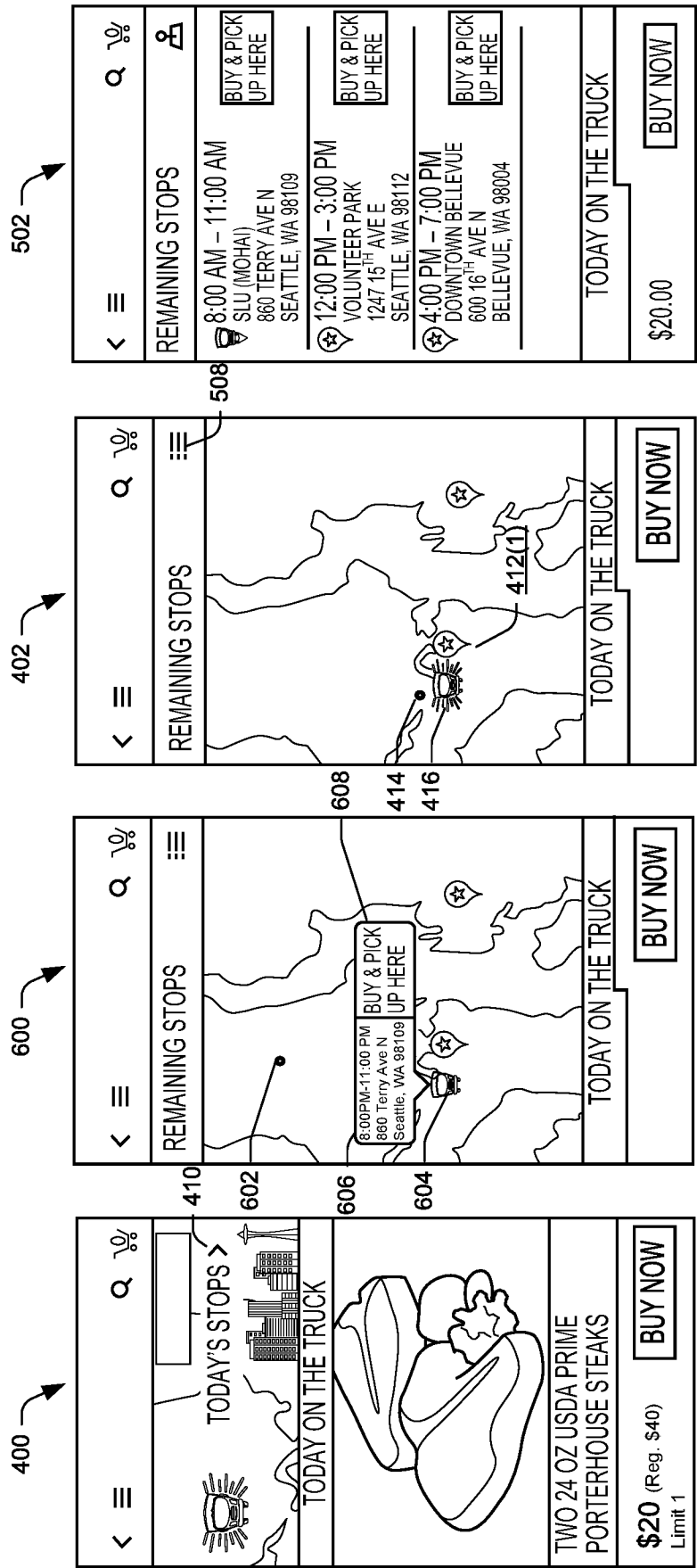


FIG. 6

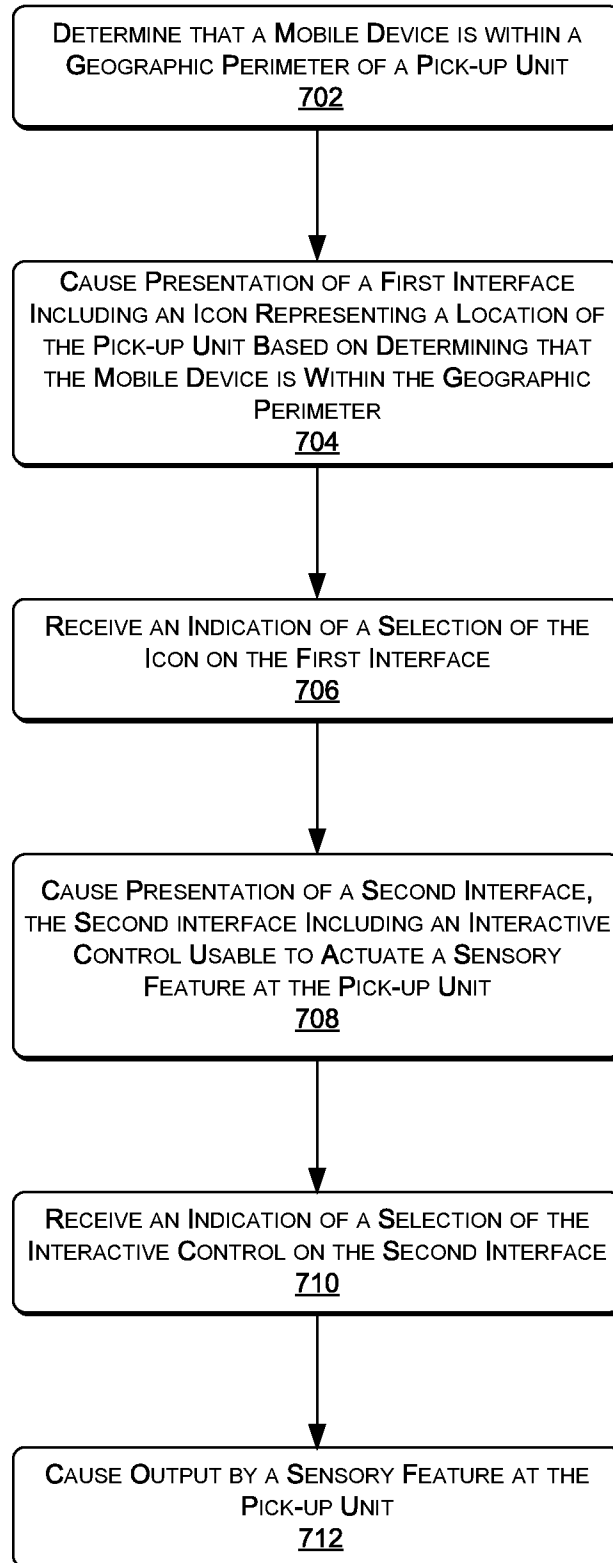
700 

FIG. 7

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2017/019060

A. CLASSIFICATION OF SUBJECT MATTER

INV. G06Q10/08 G06Q30/06 G06F3/0482 H04W4/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06Q G06F H04W

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/073201 A1 (HOLCOMB STEPHEN [US] ET AL) 25 March 2010 (2010-03-25)	1-7
Y	abstract; figures 1-17 paragraphs [0003], [0006] - [0011] paragraphs [0035], [0036], [0041], [0042] paragraphs [0071], [0074], [0088]	10-12
X	US 2015/245168 A1 (MARTIN JORDAN ARI [US]) 27 August 2015 (2015-08-27) abstract; figures 1-22 paragraphs [0069], [0070], [0073], [0084], [0085] paragraphs [0108], [0110], [0113] - [0115] paragraphs [0118], [0120], [0121], [0124], [0136] paragraphs [0154] - [0156]	1-7
	----- -/-	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

14 June 2017

Date of mailing of the international search report

22/06/2017

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2017/019060

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2016/014220 A1 (KIM HYOUNGSEOG [KR]) 14 January 2016 (2016-01-14)	8,9, 13-15
Y	the whole document -----	10-12
X	US 9 060 248 B1 (COULOMBE GREGORY K [CA] ET AL) 16 June 2015 (2015-06-16) the whole document -----	8-15
A	US 2006/027042 A1 (SATO KIMITAKA [JP]) 9 February 2006 (2006-02-09) abstract -----	1-15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/019060

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7

Method for causing output by a sensory feature of a pick-up unit based on selection of an interactive control

2. claims: 8-15

System wherein a mobile device receives an indication that a mobile pick-up unit is at a certain location during a time period

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2017/019060

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