

(19) **DANMARK**



Patent- og
Varemærkestyrelsen

(12)

Oversættelse af europæisk patentskrift

(10) **DK/EP 2622430 T3**

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- (51) Int.Cl.: **G 06 F 3/00 (2006.01)** **G 06 F 9/445 (2018.01)** **G 06 F 9/46 (2006.01)**
G 06 F 9/54 (2006.01)
- (45) Oversættelsen bekendtgjort den: **2020-03-30**
- (80) Dato for Den Europæiske Patentmyndigheds bekendtgørelse om meddelelse af patentet: **2020-02-12**
- (86) Europæisk ansøgning nr.: **11767123.0**
- (86) Europæisk indleveringsdag: **2011-09-27**
- (87) Den europæiske ansøgnings publiceringsdag: **2013-08-07**
- (86) International ansøgning nr.: **US2011053428**
- (87) Internationalt publikationsnr.: **WO2012047638**
- (30) Prioritet: **2010-09-28 US 387451 P** **2011-08-23 US 201113216006**
- (84) Designerede stater: **AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**
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- (54) Benævnelse: **APPARAT OG FREMGANGSMÅDER TIL UDVIDELSE AF APPLIKATIONSTJENESTER**
- (56) Fremdragne publikationer:
US-A1- 2004 059 776
US-A1- 2008 155 555
US-A1- 2009 193 444
US-A1- 2009 222 842
US-A1- 2010 058 353
US-A1- 2010 191 604
Anonymous: "How to change the default program to open a file with", , 18 December 2008 (2008-12-18), XP055301832, Retrieved from the Internet: URL: <http://web.archive.org/web/20081218074649/http://www.online-tech-tips.com/computer-tips/how-to-change-the-default-program-to-open-a-file-with/> [retrieved on 2016-09-12]
Anonymous: "Windows File Association - txt", , 11 August 2011 (2011-08-11), XP055301979, Retrieved from the Internet: URL: <http://web.archive.org/web/20110811054705/http://shell.windows.com/fileassoc/0409/xml/redir.asp?EXT=txt> [retrieved on 2016-09-13]
Anonymous: "File Association Web Service", , 8 April 2008 (2008-04-08), XP055301985, Retrieved from the Internet: URL: <http://web.archive.org/web/20080408164407/http://technet.microsoft.com/en-us/library/bb490825.aspx> [retrieved on 2016-09-13]

Fortsættes ...

DESCRIPTION

BACKGROUND

[0001] The present disclosure relates to a mobile operating environment, and more particularly, to providing improved apparatus and methods of distributing integrated mobile applications for user devices.

[0002] Mobile operators or mobile device carriers play a major part in the telecommunication industry today. Initially, mobile operators concentrated their efforts on generating revenue by increasing their subscriber base. However, it will be appreciated that in several countries, the scope for increasing the subscriber base has now become very limited, as the market has reached close to the saturation point. As a result, the mobile operators have been branching into providing value added services to subscribers in order to increase their revenue.

[0003] One way of generating increased revenue is through the sales of premium services, such as ringtones, wallpaper, games, etc., to users. These services may be provided by the mobile operator themselves, or by business entities who may operate in collaboration with the mobile operators to provide such services. The services may be available for download to a mobile device or user equipment upon payment of a fee.

[0004] Many benefits, such as maximizing the potential earnings for sales, accrue upon recommending and promoting to users content or services that are the most likely to be of interest to the users. The users can have a better experience using their mobile device in light of these individually recommended content and services.

[0005] A burgeoning area of such content and services pertains to applications. For example, an on-device mobile application store has become a crowded, hard-to-browse experience as more and more applications come online. Similarly, given the general user interface limitations of most mobile computing platforms, applications that are installed can have functionality that can only be used one at a time. Each application generally runs standalone. Conventionally, mobile platforms in some instances allow for the sharing of data (e.g., contact details) across the mobile platform. That functionality does not extend, however, to the sharing of full, custom user interface (UI) extensions between third party and core applications.

[0006] US2010/0058353A1 describes a method for specifying and consuming remote functionality that an application invokes outside a web browser.

SUMMARY

[0007] The following presents a simplified summary of one or more aspects in order to provide

a basic understanding of such aspects. This summary is not an extensive overview of all contemplated aspects, and is intended to neither identify key or critical elements of all aspects nor delineate the scope of any or all aspects. Its sole purpose is to present some concepts of one or more aspects in a simplified form as a prelude to the more detailed description that is presented later.

[0008] The invention is directed to a method, a computer program product and an apparatus for extending services of a user device as set forth in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The disclosed aspects will hereinafter be described in conjunction with the appended drawings, provided to illustrate and not to limit the disclosed aspects, wherein like designations denote like elements.

FIG. 1 illustrates a schematic diagram for an apparatus for extending services of a user device, according to one aspect.

FIG. 2 illustrates a flow diagram of a methodology for extending services of a user device, according to one aspect.

FIG. 3 illustrates sequential depictions of a graphical user interface of a mobile computing platform presenting contextually integrated applications, according to one aspect.

FIG. 4 presents sequential depictions of the graphical user interface presenting contextually related applications that could be installed, according to one aspect.

FIG. 5 presents sequential depictions of the graphical user interface presenting operations to review and install the contextually related application, according to one aspect.

FIG. 6 presents sequential depictions of the graphical user interface after installing the contextually related application, according to one aspect.

FIG. 7 presents sequential depictions of the graphical user interface of interacting with the newly installed application in a standalone manner, according to one aspect.

FIG. 8 presents sequential depictions of the graphical user interface of interacting with a calendar application enhanced by integrated application services, according to one aspect.

FIG. 9 presents sequential depictions of the graphical user interface of interacting with a location application enhanced by integrated application services, according to one aspect.

FIG. 10 presents sequential depictions of the graphical user interface of interacting with a photograph application enhanced by integrated application services, according to one aspect.

FIGS. 11A-11B present examples of an augmented reality application, according to one aspect.

FIG. 12 illustrates a communication system for user interface application contextual integration on a mobile computing platform, according to one aspect.

FIG. 13 illustrates a flow diagram of a methodology for contextual integration of applications on a mobile computing platform, according to one aspect.

FIG. 14 illustrates a schematic diagram of an exemplary environment of a user device for extending application services, according to one aspect.

FIG. 15 illustrates a schematic diagram of an exemplary environment of a network entity for extending application services, according to one aspect.

FIG. 16 illustrates a schematic diagram of a logical grouping of electrical components for extending services of a user device, according to one aspect.

DETAILED DESCRIPTION

[0010] Current mobile devices are limited in the way core mobile applications, such as contacts, calendars, maps, photos etc., can be extended. While some mobile operating systems allow for third party downloadable applications to share some of their data, the same does not apply to their user interfaces. Additionally, the current standard model of a virtual application store from which mobile applications can be downloaded provides a single point of entry for application discovery (usually an application store icon on a home screen of a mobile device).

[0011] The present disclosure provides a mobile platform User Interface (UI) that can be structured to provide a mechanism for an application, such as one or more third party applications, to provide UI and data extensions into one or more other applications, such as core applications, stored on a mobile device. As used herein, a core application includes any application preconfigured on a mobile device, while a third party application includes any application that is not a core application, although the principles described herein relate to extending any application based on functionality of another application. Further, the provided UI and data extensions refer to additional services that can be added to one application based on another application. As used herein, the term service includes any application-related functionality. In some aspects, the extension of a service is based on one application utilizing a service or data type that is compatible with another application, where data type relates to a type or format of data used by the application. The present disclosure further provides multiple, contextual points of access for discovering and downloading of one or more applications, such as third party applications, from inside the UI of one or more other applications, such as core mobile applications, thereby allowing users to easily discover and download one or more new applications which functionality extends any resident application.

[0012] Various aspects are now described with reference to the drawings. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of one or more aspects. It may be evident, however, that the various aspects may be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form in order to facilitate describing these aspects.

[0013] In **FIG. 1**, the present disclosure provides an apparatus **100** for extending services of a user device **102**, according to one aspect. An extension manager **104** identifies a first application **106** resident on the user device **102** having a first service **108** that utilizes a first data type **110**. A discovery agent **112** identifies a second application **114**, for example from a plurality of applications **116**, having a second service **118** that utilizes a second data type **120**. The discovery agent **112** identifies the second application **114** by matching a compatibility of a selected one of the first service **108** or the first data type **110** of the first application **106** with a respective one of the second service **118** or the second data type **120** of the second application **114**.

[0014] For example, the discovery agent **112** can match a compatibility of the first service **108** of the first application **106** with the second data type **120** of the second application **114** as depicted at **122**. For example, the first service **108** may include a contact service and the second data type **120** may include an online gamer contact. In another example, the first service **108** may include a contact service and the second data type **120** may include a location service.

[0015] Alternatively or in addition, the discovery agent **112** can match a compatibility of the first data type **110** of the first application **106** with the second service **118** of the second application **114** as depicted at **124**. For example, the first data type **110** may include a media format and the second service **118** may include a media viewer. In another example, the first data type **110** may include a media format and the second service **118** may include an uploader to a server. As an additional example, the first data type **110** may include an image format associated with at least one location and the second service **118** may include a service associated with the at least one location.

[0016] A user interface **126** presents the first application **106** with a representation, depicted as a discovery icon **128**, of the discovery agent **112**, which may be selected, e.g. based on user input, for activating the identifying of compatible applications, such as the second application **114**.

[0017] In one aspect, the first application **106** may include at least one of a plurality of services **130** or a plurality of data types **132**. The user interface **126** can present a current context **134** that identifies the first service **108** and the first data type **110**. Accordingly, rather than consider all of the plurality of services **130** or the plurality of data types **132**, in an aspect the discovery agent **112** may identify the current context **134** and then may identify the second application **114** according to the current context **134**.

[0018] In one aspect, an application adder **136** manages the acquisition and storage of the second application **114** on the user device **102**, for example from a server **138**. In an exemplary aspect, the user interface **126** presents the first application **106** with a representation, depicted as a download or "add" icon **140**, of the application adder **136** for activating or initiating the acquisition and storage, e.g. downloading, of the second application **114**.

[0019] In one aspect, a data structure **142** may define one or more of the compatibilities of the plurality of applications **116**. For example, data structure **142** may identify service types and/or data types of a respective application, compatible service types and/or data types that work with a respective application, and/or other applications that are compatible with a respective application. The discovery agent **112** may access the data structure **142** for use in determining matching of the compatibility of the first application **106** with one or more of the plurality of applications **116**, such as for matching with the second application **114** as discussed above. For example, the data structure **142** can be resident on the user device **102** for all of the plurality of applications **116**. Alternatively, the data structure **142** can be resident on the user device **102** for a subset of the plurality of applications **116** that are resident or stored on the user device **102**. Alternatively or in addition, the data structure **142** can be resident on the server **138** for all of the plurality of applications **116**, and linked to an application store **144** for downloading to one or more user devices, such as user device **102**. In an aspect, for example, the user device **102** can access the data structure **142** via a network interface **146** on user device **102** that is capable of communication with a network interface **148** of the server **138**.

[0020] Thus, in one aspect, the extension manager **104** obtains and integrates the respective one of the second data type **120** or second service **118** of the second application **114** for use by the selected one of the first service **108** or the first data type **110** of the first application **106** in response to a user selection.

[0021] In FIG. 2, in one aspect, a method **200** for extending services of a user device includes identifying a first application resident on a user device which has a first service that utilizes a first data type (block **202**). For example, the extension manager **104** identifies the first application **106** on the user device **102** having the first service **108** that utilizes the first data type **110** (FIG. 1). The method **200** further includes identifying a second application of a plurality of applications having a second service that utilizes a second data type (block **204**). For example, the discovery agent **112** identifies the second application **114** of the plurality of applications **116** having the second service **118** that utilizes the second data type **120** (FIG. 1). The method **200** further includes matching a compatibility of a selected one of the first service or the first data type of the first application with a respective one of the second service type or the second data type of the second application (block **206**). For example, the discovery agent **112** identifies the second application **114** by matching a compatibility of the selected one of the first service **108** or the first data type **110** of the first application **106** with the respective one of the second data type **120** or second service **118** of the second application **114** (FIG. 1). Optionally, in an exemplary aspect, the method **200** further includes presenting the first

application with a representation of the discovery agent for activating the identifying of the second application (block 208). For example, the user interface 126 presents the first application 106 with the representation, depicted as the discovery icon 128, of the discovery agent 112 for activating the identifying of the second application 114 (FIG. 1).

[0022] In one aspect, the first application 106 may include at least one of a plurality of services or a plurality of data types. In this case, the method 200 can further include identifying a current context defined by the first service and the first data type, and identifying the second application according to the current context.

[0023] In one aspect, the method 200 can further include acquiring and storing the second application on the user device, e.g. by downloading from a server. In an exemplary aspect, the method 200 may further include presenting on a user interface the first application with a representation of the application adder for activating the acquisition and storage of the second application in the user device.

[0024] In one aspect, the method 200 of matching a compatibility (block 206) may identify a match between the first service of the first application and the second data type of the second application. For example, the first service may include a contact service and the second data type comprises an online gamer contact. For another example, the first service may include a contact service and the second data type comprises a location service.

[0025] In one aspect, the method 200 of matching a compatibility (block 206) may identify a match between the first data type of the first application and the second service of the second application. For example, the first data type may include a media format and the second service comprises a media viewer. For another example, the first data type may include a media format and the second service comprises an uploader to a server. For another example, the first data type may include an image format associated with at least one location and the second service comprises a service associated with the at least one location.

[0026] In one aspect, the method 200 may include obtaining a data structure that defines one or more of the compatibilities of the plurality of applications. For example, in an aspect, the data structure may be obtained by accessing the data structure via a network interface.

[0027] In one aspect, the method 200 may include obtaining and integrating the respective one of the second data type or second service of the second application for use by the selected one of the first service or the first data type of the first application in response to a user selection.

[0028] As examples of use, in FIGS. 3-10 and 11A-11B, an exemplary mobile device 300 presents a graphical user interface (GUI) 302 for interacting with a UI application integrator according to one aspect consistent with the present disclosure.

[0029] In FIG. 3, a first UI state depicted at 304 presents a home screen populated with a

plurality of applications **306**, one of which is a People application **308**.

[0030] As depicted at **310**, after selecting the People application **308**, the GUI **302** lists contacts **312**. Previously, a related location application (e.g., Locate Person Application) has been integrated that enhances the contacts **312** by presenting a current location if discernible. Upon selecting a particular contact, as depicted at **314**, contact details **316** are displayed as well as location details **318**. For instance, the Locate Person Application, downloaded from an application store, can provide a map UI within a contact detail user interface for a contact, thereby showing the location of the contact.

[0031] In one aspect, the integration of one or more applications can be dynamically performed. Thus, the application services can be easily toggled, added or removed as needed.

[0032] For instance, as depicted in **FIG. 4**, a locate person detail user interface **404** may be generated in response to a user selection **319** received at UI **314** (**FIG. 3**). In an aspect, a UI application integrator icon **402** is accessed from a core application. For example, in this case, UI application integrator icon **402** is located in a lower portion of UI **404**. In response to a user selection of UI application integrator icon **402**, a user interface is depicted at **406** that provides a listing of currently installed applications that are contextually relevant. As depicted at virtual key **408**, the user can select an opportunity to discover one or more additional recommended contextually-related applications **410** from an application store **412**. These contextually-related applications **410**, like the "Gamer Net" application **414**, for example, can have their UI extended into multiple core applications according to the aspects described herein. Each application provides a service that is tailored for a specific purpose, and will affect the relevant core application in its own way.

[0033] For example, in **FIG. 5**, in response to a user selection of the "Gamer Net" application **414** (**FIG. 4**), a details user interface **502** is depicted for the Gamer Net application **414**, which includes two services provided by Gamer Net application **414** that can be integrated. In this case, the Gamer Net application **414** may extend to both a People application **501** and an Events application **503**.

[0034] For instance, as depicted at **504**, the user selects People application **501** to see how the services of the Gamer Net application **414** can enhance the People application **501**. As depicted at **504**, examples are presented for how the Gamer Net application **414** would enhance information for the People Application **501**. Going back to UI **502**, the user may select to add the Gamer Net application **414** to the collection of applications or services resident on the user device, which results in the installed collection of applications or services as depicted at UI **506** including the Gamer Net application **414**. Once installed, new applications or services appear in the relevant core applications tabs. In an aspect, for example, a Contacts application on the user device may list Contacts with Gamer Net accounts and display gamer profiles within, for example, a contact details screen. For example, in this case contacts may be stored in People application **501**, and the Gamer Net application **414** or service will affect the entry for the contact in the People application **501**. The user can then select the contextually related

People application **501** to see the integration in operation.

[0035] For example, in **FIG. 6**, as depicted at **602** the enhanced People application is shown for the previously selected contact that now shows a status **603** for the individual on Gamer Net. Selecting the People application **501** again backs out to a contact list UI, as depicted at **604**, with gamer status **603** now annotated in addition to location **605**.

[0036] In one aspect, how a service affects core applications can be determined by third party application developers, using flexibility inherent in the UI application integrator Application Programming Interface (API).

[0037] In **FIG. 7**, the collection of services as depicted at **702** shows the Gamer Net icon **703**. Since Gamer Net is also a standalone application, Gamer Net is also accessible from the home screen. When selected for standalone operation as depicted at **704**, additional services provided by Gamer Net are presented.

[0038] With initial reference to **FIG. 8**, some additional examples of how these services can be incorporated into the core applications are depicted. In the calendar application as depicted at **802**, services from third party applications can change the core UI to add customized content directly into a calendar view, such as the Week view. For example, a calendar event **803** has a UI which has been enhanced by a Sports application. When the calendar event **803** is selected, an example of the functionality of this integrated service is depicted at **804**, wherein additional information has been presented.

[0039] In an additional example, referring to **FIG. 9**, at **902** in a Maps application, UI layers, e.g. layer **903**, can be added to show additional information as needed. When a layer is selected, such as the selection of layer **903** resulting in UI **904**, one or more integrated services from another UI application, depicted as a Maps Location Synchronization service at **904**, may then be available. In this case, for example, Maps Location Synchronization service at **904** enables locations or directions to be sent directly to the user device.

[0040] As a further example in **FIG. 10**, the present disclosure can be incorporated into a Photos application as depicted at **1002** that provides a catalog of user photographs. When selecting a photograph as depicted at **1004**, one or more integrated services from other compatible applications are displayed. For example, in this case, the integrated services may include a process service that allows photos to be processed directly from within the core photo application without having to launch a separate application. Further, for example, the integrated services from other compatible applications may include an auto correct photograph service and a social site and/or photo share site upload service.

[0041] In **FIGS. 11A-11B**, an Augmented Reality Application is depicted at **1102** and at **1104** wherein UI layers, such as layers **1106** and **1108**, can be added in a similar way to provide extra functionality to a real world depiction, such as a street view for shopping at **1102** and a sky view of a star constellation mapping service at **1104**.

[0042] In **FIG. 12**, in one aspect, a communication system **1200** is provided wherein an apparatus, depicted as mobile device **1202** such as handset, user equipment, smartphone, access terminal, user device, etc., provides integrated services on a mobile computing platform **1204**. In particular, the mobile computing platform **1204** executes a first application **1206** on a user interface (UI) **1208**. The user interface **1208** displays a user interface feature **1210** of a second application **1212** in response to the mobile computing platform **1204** determining a contextual similarity with the first application **1206**.

[0043] In one aspect, the second application **1212** is locally stored on the mobile device **1202**. In another aspect, the second application **1212** is remotely stored on a core network **1214** and is downloaded via a wireless wide area network (WWAN) via a node **1216** to a transceiver **1218** of the mobile device **1202**. Alternatively or in addition, the second application **1212** is downloaded via a wireless local access network (WLAN) via an access point **1220**.

[0044] In an exemplary aspect, the user interface is designed to promote third party application discovery in a context that is useful to the user (e.g., related to the task or application the user is currently using and which functionality and/or services the user wishes to acquire to extend the capability of the application currently in use). Accordingly, in one or more implementations, the described aspects provide a framework that allows application developers to extend the UI for the application developer's own application into a core application of a mobile device.

[0045] The present disclosure further allows deep integration of application functionality and/or services across the entire mobile UI, making an application store **1222** more of an end point than a start point for the discovery of new application or services (e.g., messaging, events, contacts, maps, browsers, photos, etc.). With the present disclosure, third party applications can extend their UI into core applications on the device, presenting functionality contextually in a respective core application where it is needed. These UI extensions can be referred to as services.

[0046] In one aspect, for one or more applications on the device, such as but not limited to a core application, a direct access point may be provided into the application store which only lists applications that have services related, e.g. having a matching compatibility, to the respective application.

[0047] In another aspect, an application details screen can identify an application on the device with which one or more other applications can be integrated. In addition, controls can be provided that allow the user to select one of the functionalities or services listed for the other applications to see more details about this integration. For example, a depiction can be presented of how a respective other application integrates with the resident application, which may include a preview image alongside of this depiction.

[0048] In **FIG. 13**, a methodology **1300** is depicted for integrating services on a mobile

platform. A mobile device executes a first application on a mobile computing platform (block **1302**). The mobile device determines a contextual similarity of the first application to a second application, or a service provided by a second application (block **1304**). The mobile device displays a user interface feature of a second application in response to the determined contextual similarity with the first application (block **1306**). The mobile device receives a user selection of the user interface feature (block **1308**). A determination is made whether the second application is installed (block **1310**). If not, the second application is downloaded from an application store (e.g., via WWAN or WLAN) (block **1312**) and then the service of the second application referenced by a defined extension ("service") may be executed (block **1314**). If so, the service of the second application referenced by a defined extension ("service") is executed (block **1314**).

[0049] Referring to **FIG. 14**, in one aspect, the user device **102** (**FIG. 1**) may include a processor **1402** for carrying out processing functions associated with one or more of components and functions described herein. Processor **1402** can include a single or multiple set of processors or multi-core processors as part. Moreover, processor **1402** can be implemented as an integrated processing system and/or a distributed processing system, depicted as a computing platform **1404**.

[0050] User device **102** further includes a memory **1408**, such as for storing local versions of applications being executed by processor **1402**. Memory **1408** can include any type of memory usable by a computer, such as random access memory (RAM), read only memory (ROM), tapes, magnetic discs, optical discs, volatile memory, non-volatile memory, and any combination thereof.

[0051] Further, user device **102** includes a communications component **1410** that provides for establishing and maintaining communications with one or more parties utilizing hardware, software, and services as described herein. Communications component **1410** may carry communications between components on user device **102**, as well as between user device **102** and external devices, such as devices located across a communications network and/or devices serially or locally connected to user device **102**. For example, communications component **1410** may include one or more buses **1412**, and may further include transmit chain components and receive chain components associated with a transmitter **1414** and a receiver **1416**, respectively, operable for interfacing with external devices. In another example, communications component **1410** may communicate with external devices via a network interface **146**.

[0052] Additionally, user device **102** may further include a data store **1420**, which can be hardware and/or software, and which provides for mass storage of information, databases, and programs employed in connection with aspects described herein. For example, data store **1420** may be a data repository for applications not currently being executed by processor **1402**.

[0053] User device **102** may additionally include a user interface **126** operable to receive

inputs from a user of user device **102** and further operable to generate outputs for presentation to the user. User interface **126** may include one or more input devices, including but not limited to a keyboard, a number pad, a mouse, a touch-sensitive display, a navigation key, a function key, a microphone, a voice recognition component, any other mechanism capable of receiving an input from a user, or any combination thereof. Further, user interface **126** may include one or more output devices, including but not limited to a display, a speaker, a haptic feedback mechanism, a printer, any other mechanism capable of presenting an output to a user, or any combination thereof.

[0054] Resident in memory **1408**, data store **1420** or both, aspects of the apparatus **102** can incorporate the extension manager **104**, discovery agent **112**, application adder **136**, data structure **142**, the first application **106** having the first service **108** and the first data type **110**, and the second application **114** having the second service **118** and the second data type **120**.

[0055] Referring to **FIG. 15**, in one aspect, the server **138** (**FIG. 1**) may include a processor **1502** for carrying out processing functions associated with one or more of components and functions described herein. Processor **1502** can include a single or multiple set of processors or multi-core processors. Moreover, processor **1502** can be implemented as an integrated processing system and/or a distributed processing system, depicted as a computing platform **1504**. The server **138** can support the user device **102** (**FIG. 1**) as described above. Alternatively, processing or storage aspects can be distributed between the server **138** and the user device **102**, such as having the server **138** perform additional functions for a thin client on a user device **102**.

[0056] Server **138** further includes a memory **1508**, such as for storing local versions of applications being executed by processor **1502**. Memory **1508** can include any type of memory usable by a computer, such as random access memory (RAM), read only memory (ROM), tapes, magnetic discs, optical discs, volatile memory, non-volatile memory, and any combination thereof.

[0057] Further, server **138** includes a communications component **1510** that provides for establishing and maintaining communications with one or more parties utilizing hardware, software, and services as described herein. Communications component **1510** may carry communications between components on server **138**, as well as between server **138** and external devices, such as user devices **102** located across a communications network and/or devices serially or locally connected to server **138**. For example, communications component **1510** may include one or more buses **1512**, and may further include transmit chain components and receive chain components associated with a transmitter **1514** and a receiver **1516**, respectively, operable for interfacing with external devices. For another example, communications component **1510** may communicate to external devices via a network interface **148**.

[0058] Additionally, server **138** may further include a data store **1520**, which can be any suitable combination of hardware and/or software, that provides for mass storage of

information, databases, and programs employed in connection with aspects described herein. For example, data store **1520** may be a data repository for applications not currently being executed by processor **1502**.

[0059] Server **138** may additionally include a user interface **1522** operable to receive inputs from a user of user device **102** (FIG. 1), and further operable to generate outputs for presentation to the user. User interface **1522** may interface with one or more input devices, including but not limited to a keyboard, a number pad, a mouse, a touch-sensitive display, a navigation key, a function key, a microphone, a voice recognition component, any other mechanism capable of remotely receiving an input from a user, or any combination thereof. Further, user interface **1522** may interface with one or more output devices, including but not limited to a display, a speaker, a haptic feedback mechanism, a printer, any other mechanism capable of presenting an output to a user, or any combination thereof.

[0060] Resident in memory **1508**, data store **1520** or both, aspects of the server **138** can incorporate the extension manager **104**, discovery agent **112**, and application adder **136**, for example for downloading to a user device, such as user device **102** (FIG. 1). Further, memory **1508**, data store **1520** or both, may include data structure **142**, and an application store **144** containing the plurality of applications **116**.

[0061] With reference to FIG. 16, illustrated is a system **1600** for extending services of a user device. For example, system **1600** can reside at least partially within user equipment. It is to be appreciated that system **1600** is represented as including functional blocks, which can be functional blocks that represent functions implemented by a computing platform, processor, software, or combination thereof (e.g., firmware). System **1600** includes a logical grouping **1602** of electrical components that can act in conjunction. For instance, logical grouping **1602** can include an electrical component **1604** for identifying a first application resident on a user device having a first service that utilizes a first data type. For another instance, logical grouping **1602** can include an electrical component **1606** for identifying a second application of a plurality of applications having a second service that utilizes a second data type. For an additional instance, logical grouping **1602** can include an electrical component **1608** for compatibility matching a selected one of the first service or the first data type of the first application with a respective one of the second service or the second data type of the second application. Optionally, as indicated by dashed lines, logical grouping **1602** can include an electrical component **1610** for presenting on a user interface the first application with a representation of the discovery agent for activating the identifying of the second application. Additionally, system **1600** can include a memory **1620** that retains instructions for executing functions associated with electrical component **1604-1610**. While shown as being external to memory **1620**, it is to be understood that one or more of electrical component **1604-1610** can exist within memory **1620**.

[0062] Those of skill would further appreciate that the various illustrative logical blocks, modules, circuits, and algorithm steps described in connection with the aspects disclosed herein may be implemented as electronic hardware, computer software, or combinations of

both. To clearly illustrate this interchangeability of hardware and software, various illustrative components, blocks, modules, circuits, and steps have been described above generally in terms of their functionality. Whether such functionality is implemented as hardware or software depends upon the particular application and design constraints imposed on the overall system. Skilled artisans may implement the described functionality in varying ways for each particular application, but such implementation decisions should not be interpreted as causing a departure from the scope of the present disclosure.

[0063] As used in this application, the terms "component", "module", "system", and the like are intended to refer to a computer-related entity, either hardware, a combination of hardware and software, software, or software in execution. For example, a component may be, but is not limited to being, a process running on a processor, a processor, an object, an executable, a thread of execution, a program, and/or a computer. By way of illustration, both an application running on a server and the server can be a component. One or more components may reside within a process and/or thread of execution and a component may be localized on one computer and/or distributed between two or more computers.

[0064] The word "exemplary" is used herein to mean serving as an example, instance, or illustration. Any aspect or design described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other aspects or designs.

[0065] Various aspects will be presented in terms of systems that may include a number of components, modules, and the like. It is to be understood and appreciated that the various systems may include additional components, modules, etc. and/or may not include all of the components, modules, etc. discussed in connection with the figures. A combination of these approaches may also be used. The various aspects disclosed herein can be performed on electrical devices including devices that utilize touch screen display technologies and/or mouse-and-keyboard type interfaces. Examples of such devices include computers (desktop and mobile), smart phones, personal digital assistants (PDAs), and other electronic devices both wired and wireless.

[0066] In addition, the various illustrative logical blocks, modules, and circuits described in connection with the aspects disclosed herein may be implemented or performed with a general purpose processor, a digital signal processor (DSP), an application specific integrated circuit (ASIC), a field programmable gate array (FPGA) or other programmable logic device, discrete gate or transistor logic, discrete hardware components, or any combination thereof designed to perform the functions described herein. A general purpose processor may be a microprocessor, but in the alternative, the processor may be any conventional processor, controller, microcontroller, or state machine. A processor may also be implemented as a combination of computing devices, e.g., a combination of a DSP and a microprocessor, a plurality of microprocessors, one or more microprocessors in conjunction with a DSP core, or any other such configuration.

[0067] Furthermore, the one or more versions may be implemented as a method, apparatus,

or article of manufacture using standard programming and/or engineering techniques to produce software, firmware, hardware, or any combination thereof to control a computer to implement the disclosed aspects. The term "article of manufacture" (or alternatively, "computer program product") as used herein is intended to encompass a computer program accessible from any computer-readable device, carrier, or media. For example, computer readable media can include but are not limited to magnetic storage devices (e.g., hard disk, floppy disk, magnetic strips...), optical disks (e.g., compact disk (CD), digital versatile disk (DVD)...), smart cards, and flash memory devices (e.g., card, stick). Additionally it should be appreciated that a carrier wave can be employed to carry computer-readable electronic data such as those used in transmitting and receiving electronic mail or in accessing a network such as the Internet or a local area network (LAN). Of course, those skilled in the art will recognize many modifications may be made to this configuration without departing from the scope of the disclosed aspects.

[0068] The steps of a method or algorithm described in connection with the aspects disclosed herein may be embodied directly in hardware, in a software module executed by a processor, or in a combination of the two. A software module may reside in RAM memory, flash memory, ROM memory, EPROM memory, EEPROM memory, registers, hard disk, a removable disk, a CD-ROM, or any other form of storage medium known in the art. An exemplary storage medium is coupled to the processor such that the processor can read information from, and write information to, the storage medium. In the alternative, the storage medium may be integral to the processor. The processor and the storage medium may reside in an ASIC. The ASIC may reside in a user terminal. In the alternative, the processor and the storage medium may reside as discrete components in a user terminal.

[0069] The previous description of the disclosed aspects is provided to enable any person skilled in the art to make or use the present disclosure. Various modifications to these aspects will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other embodiments without departing from the scope of the claims.

[0070] In view of the exemplary systems described supra, methodologies that may be implemented in accordance with the disclosed subject matter have been described with reference to several flow diagrams. While for purposes of simplicity of explanation, the methodologies are shown and described as a series of blocks, it is to be understood and appreciated that the claimed subject matter is not limited by the order of the blocks, as some blocks may occur in different orders and/or concurrently with other blocks from what is depicted and described herein. Moreover, not all illustrated blocks may be required to implement the methodologies described herein. Additionally, it should be further appreciated that the methodologies disclosed herein are capable of being stored on an article of manufacture to facilitate transporting and transferring such methodologies to computers. The term article of manufacture, as used herein, is intended to encompass a computer program accessible from any computer-readable device, carrier, or media.

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US20100058353A1 [0006]

Patentkrav

- 1.** Fremgangsmåde til at udvide tjenester for en brugerindretning, omfattende:
- 5 at identificere (202) en første applikation (106), der findes på brugerindretningen (102), der har en første tjeneste (108), som anvender en første datatype (110);
- 10 at identificere (204) en anden applikation (114) af en flerhed af applikationer (116), der findes på en server (138), hvor den anden applikation (114) har en anden tjeneste (118), som anvender en anden datatype (120);
- 15 at matche (206) en kompatibilitet af en valgt en af den første tjeneste (108) eller den første datatype (110) af den første applikation (106) med en respektive en af den anden tjeneste (118) eller den anden datatype (120) af den anden applikation (114); og
- 20 at præsentere (208), på en brugergrænseflade (126), den første applikation (104) med en repræsentation (128) af en opdagelses-agent (112) til at aktivere identifikationen af den anden applikation (114); og at integrere (UI)brugergrænsefladefunktionalitet (UI = user interface) af den anden applikation (114) til den første applikation (106), således at brugergrænsefladefunktionaliteten udvides til den første applikation og præsenteres kontekstuel i den første applikation.
- 2.** Fremgangsmåde ifølge krav 1, hvor den første applikation (106) omfatter en af en flerhed af tjenester (130) eller en flerhed af datatyper (132), hvor
- 25 fremgangsmåden yderligere omfatter:
- at præsentere, på brugergrænsefladen (126), en nuværende kontekst (134), der omfatter den første tjeneste (108) og den første datatype (110), og
- 30 at identificere den anden applikation (114) ifølge den nuværende kontekst (134).
- 3.** Fremgangsmåde ifølge krav 2, yderligere omfattende at præsentere, på brugergrænsefladen (126), den første applikation (106) med en repræsentation af applikationstilføjer (136) til at aktivere lagringen af den anden applikation (114).
- 35

- 4.** Fremgangsmåde ifølge krav 1, hvor den første datatype (110) omfatter et medieformat og den anden tjeneste (118) omfatter en mediefremviser eller en uploader til en server.
- 5 **5.** Fremgangsmåde ifølge krav 1, hvor den først datatype (110) omfatter et billedformat, der er associeret med mindst en placering og den anden tjeneste (118) omfatter en tjeneste, der er associeret med den mindst ene placering.
- 6.** Fremgangsmåde ifølge krav 1, yderligere omfattende at opnå en datastruktur
10 (142), som definerer kompatibiliteten af en eller flere af flerheden af applikationer (116).
- 7.** Fremgangsmåde ifølge krav 6, yderligere omfattende at få adgang til
15 datastrukturen (142) for at matche kompatibiliteten af den første applikation (106) med den anden applikation (114).
- 8.** Fremgangsmåde ifølge krav 6, yderligere omfattende at få adgang til datastrukturen (142) via en netværksgrænseflade (146).
- 20 **9.** Computerprogramprodukt til at udvide tjenester af en brugerindretning, der omfatter et computerlæsbart medium, der omfatter instruktioner, som, når de udføres af en computer, får computeren til at udføre fremgangsmåden ifølge et hvilket som helst af kravene 1-8.
- 25 **10.** Apparat (300) til at udvide tjenester af en brugerindretning, der omfatter organer til at udføre fremgangsmåden ifølge et hvilket som helst af kravene 1-8.

DRAWINGS

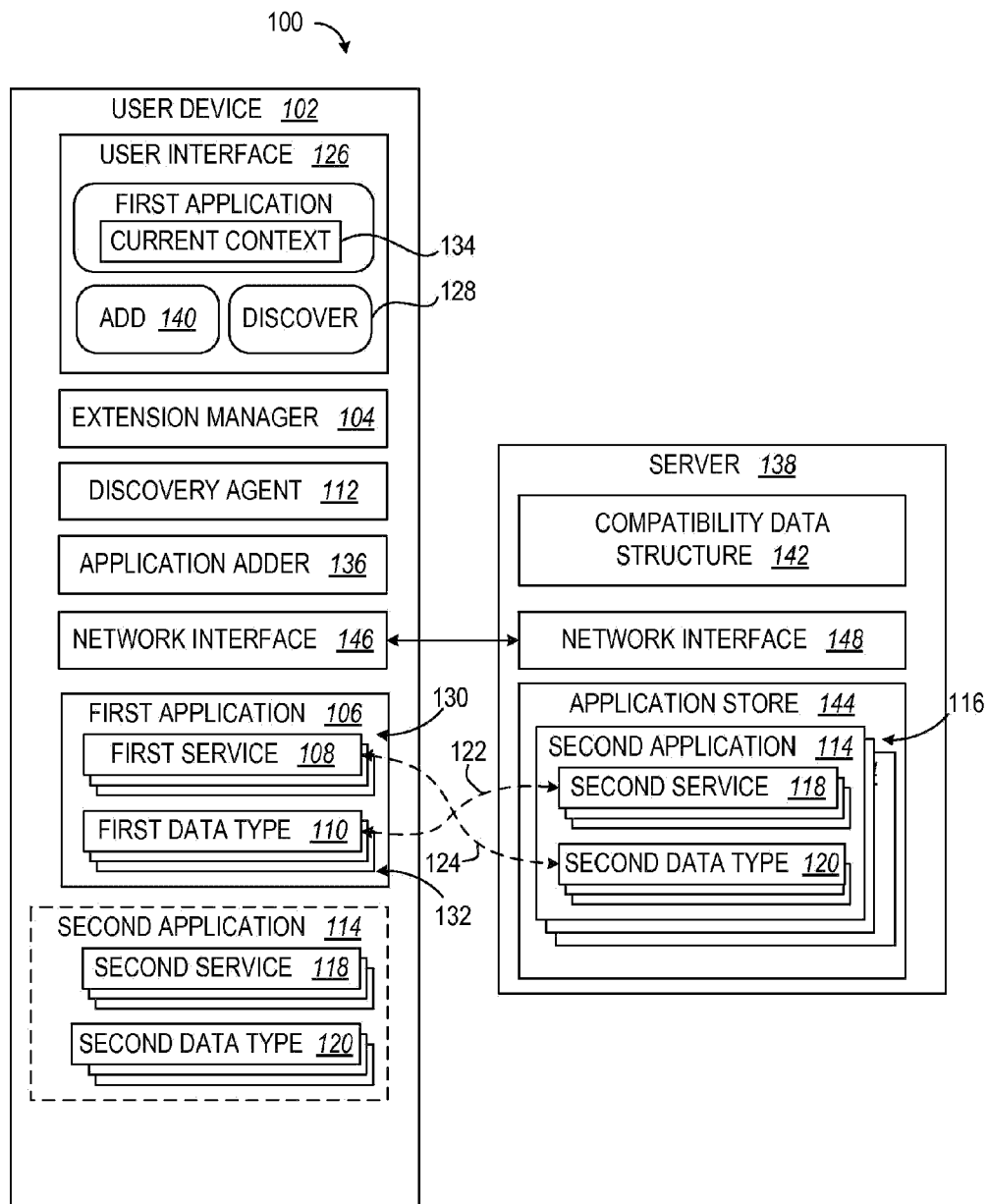
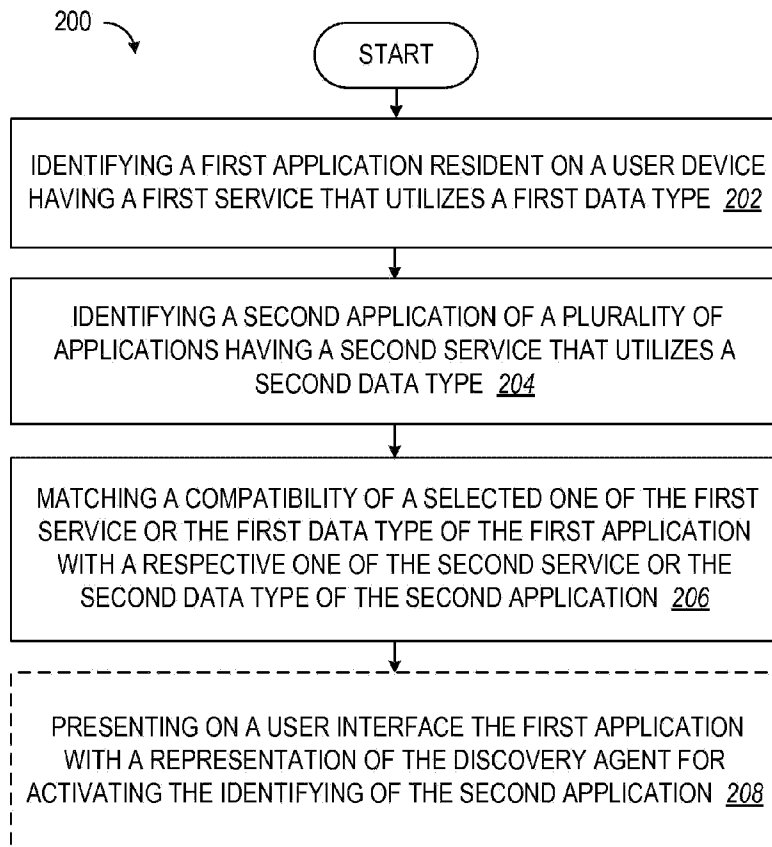


FIG. 1

**FIG. 2**

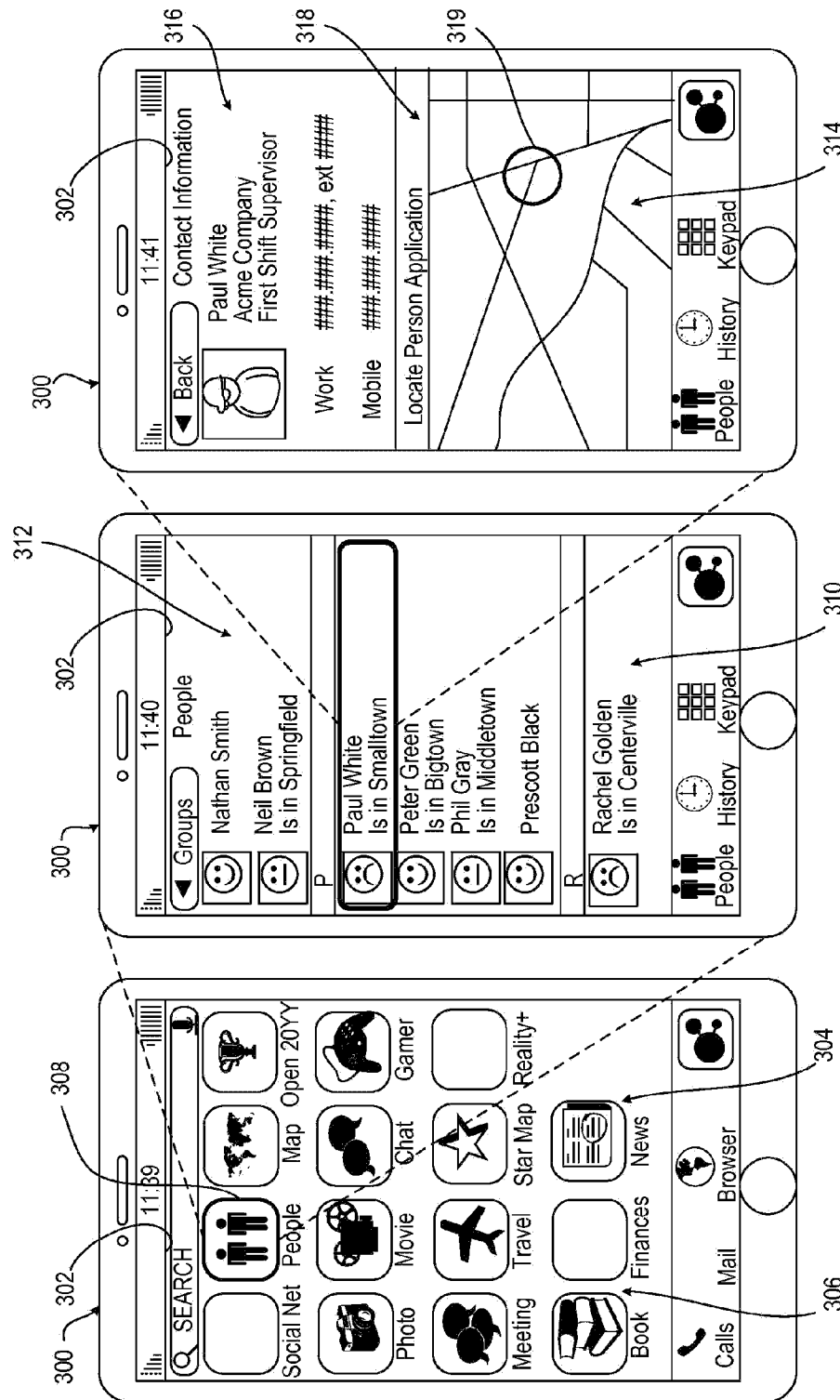


FIG. 3

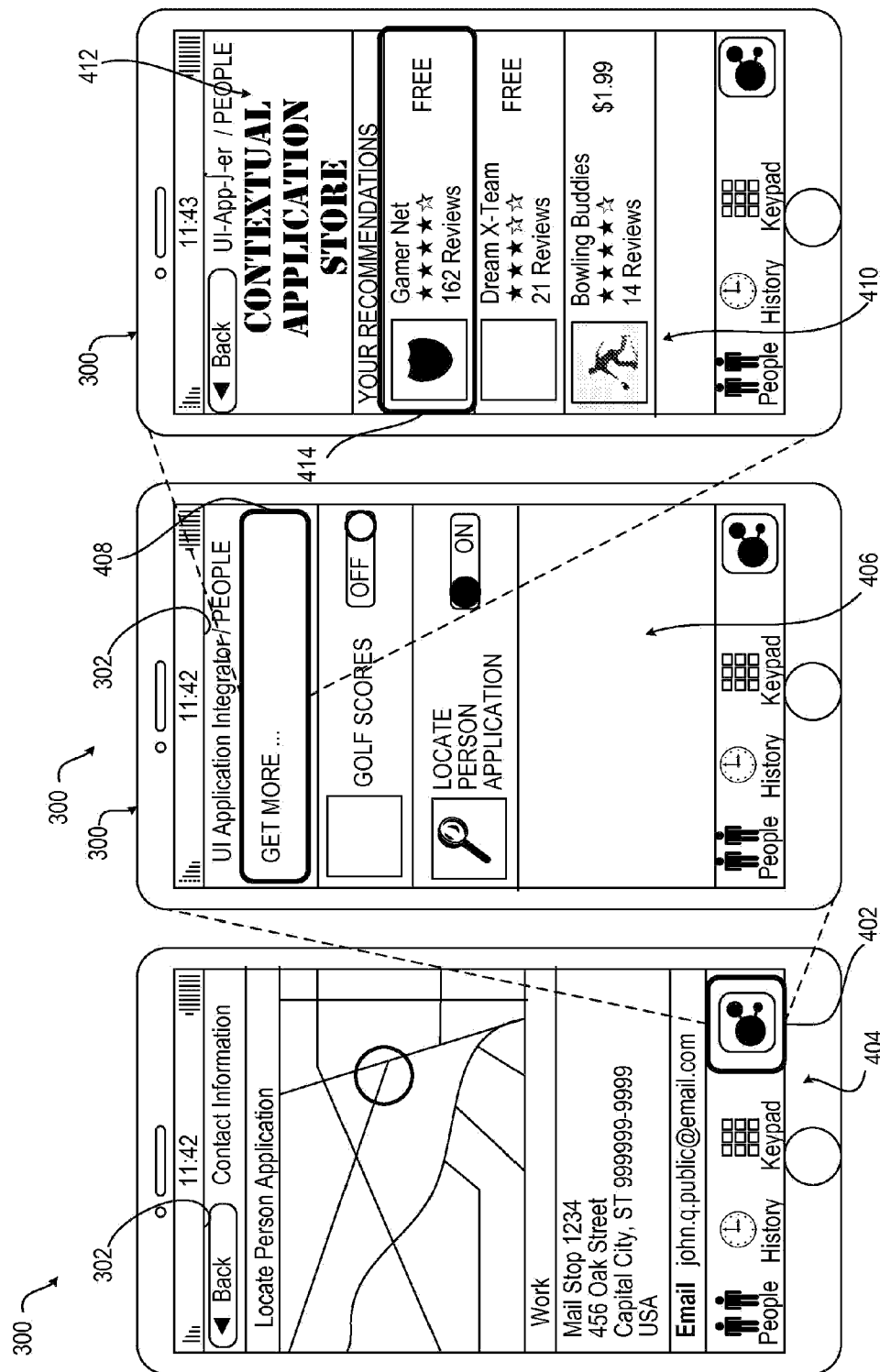


FIG. 4

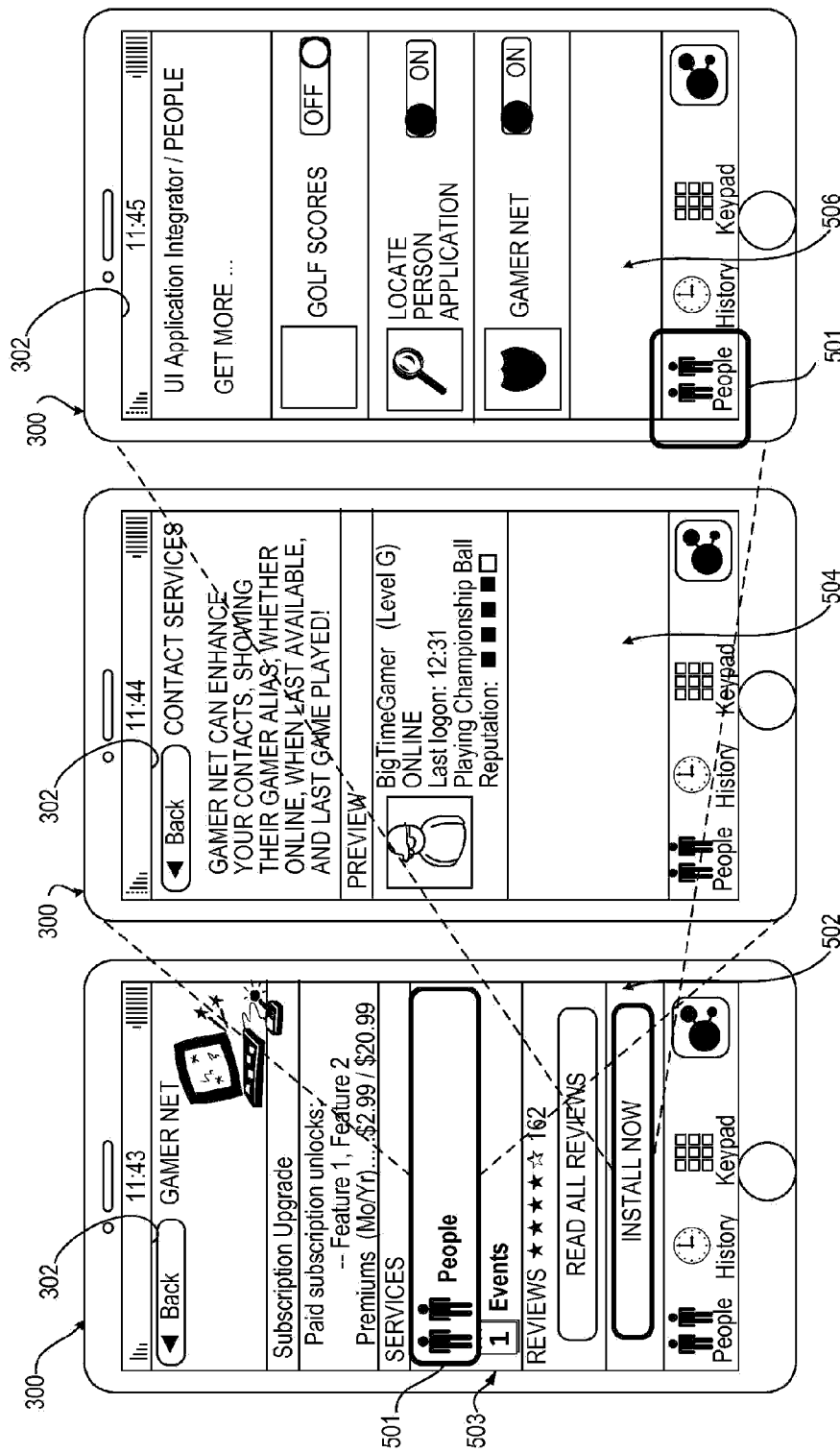


FIG. 5

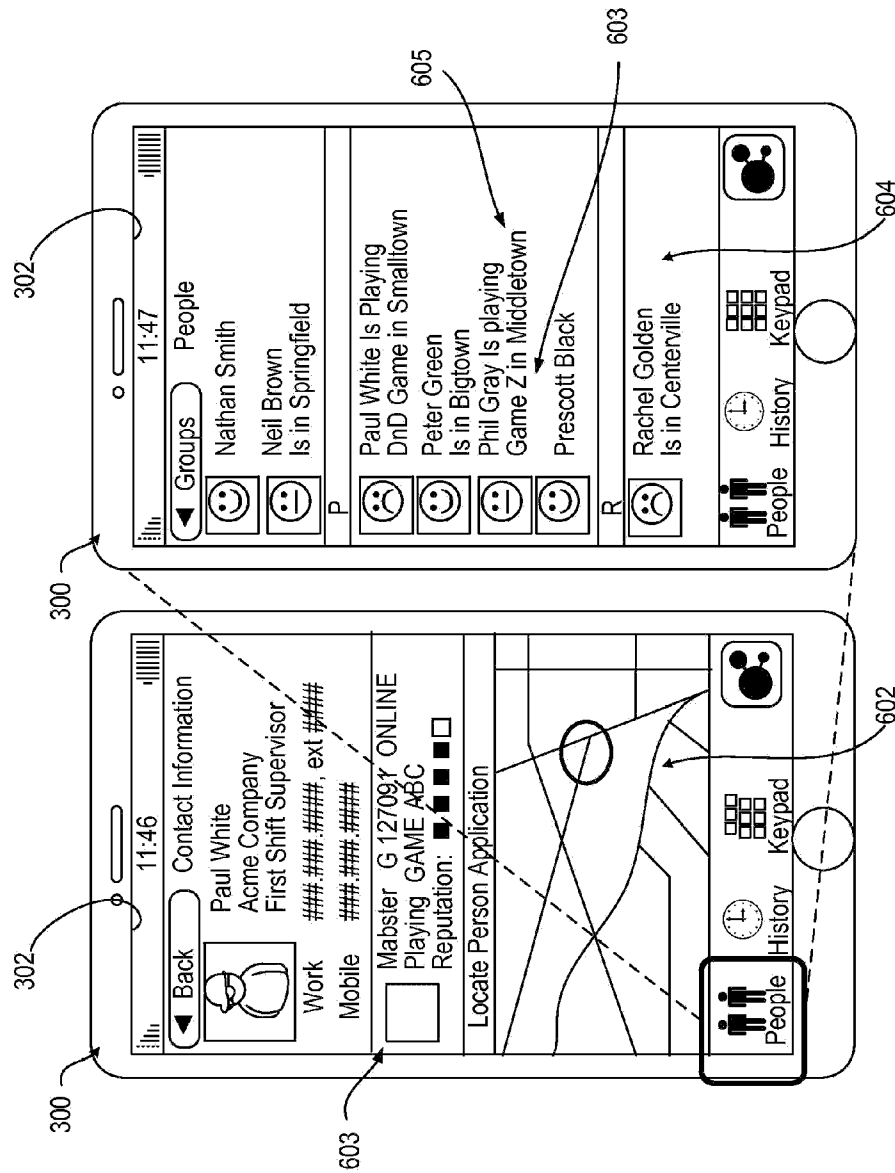


FIG. 6

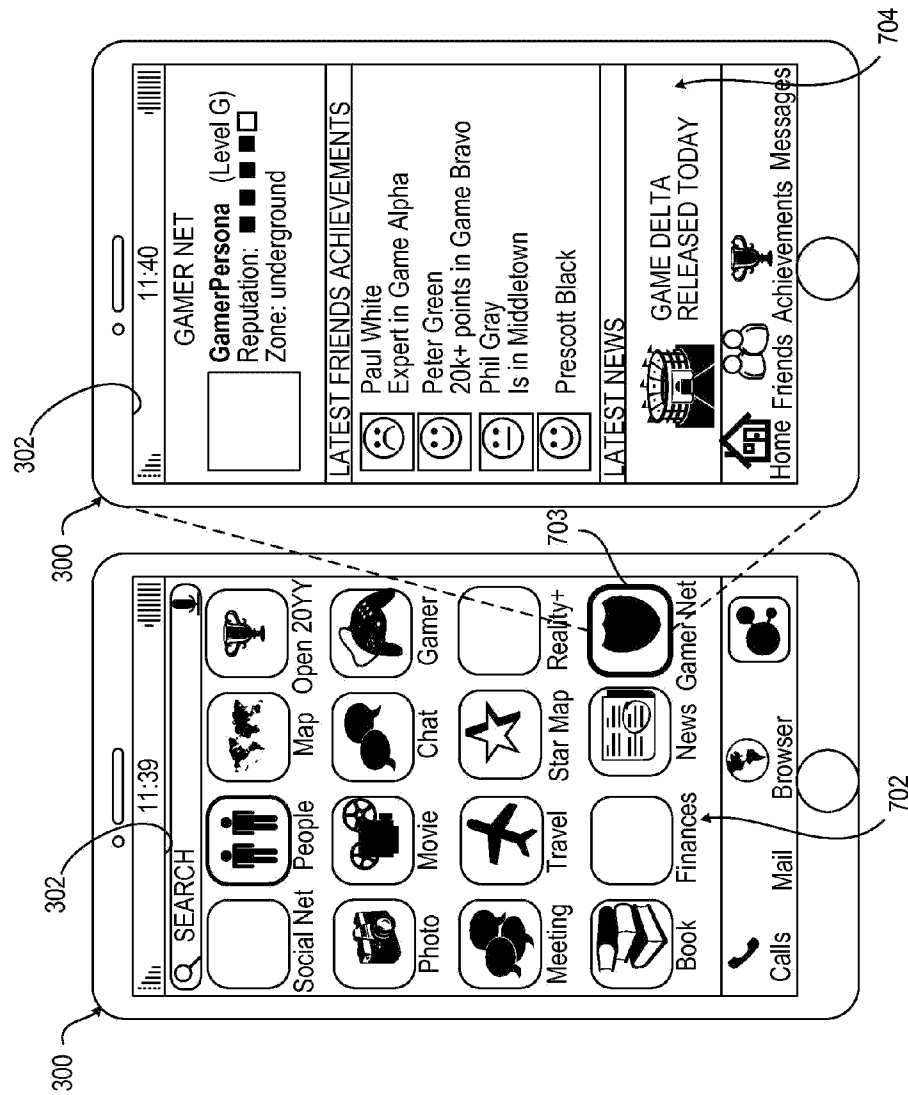


FIG. 7

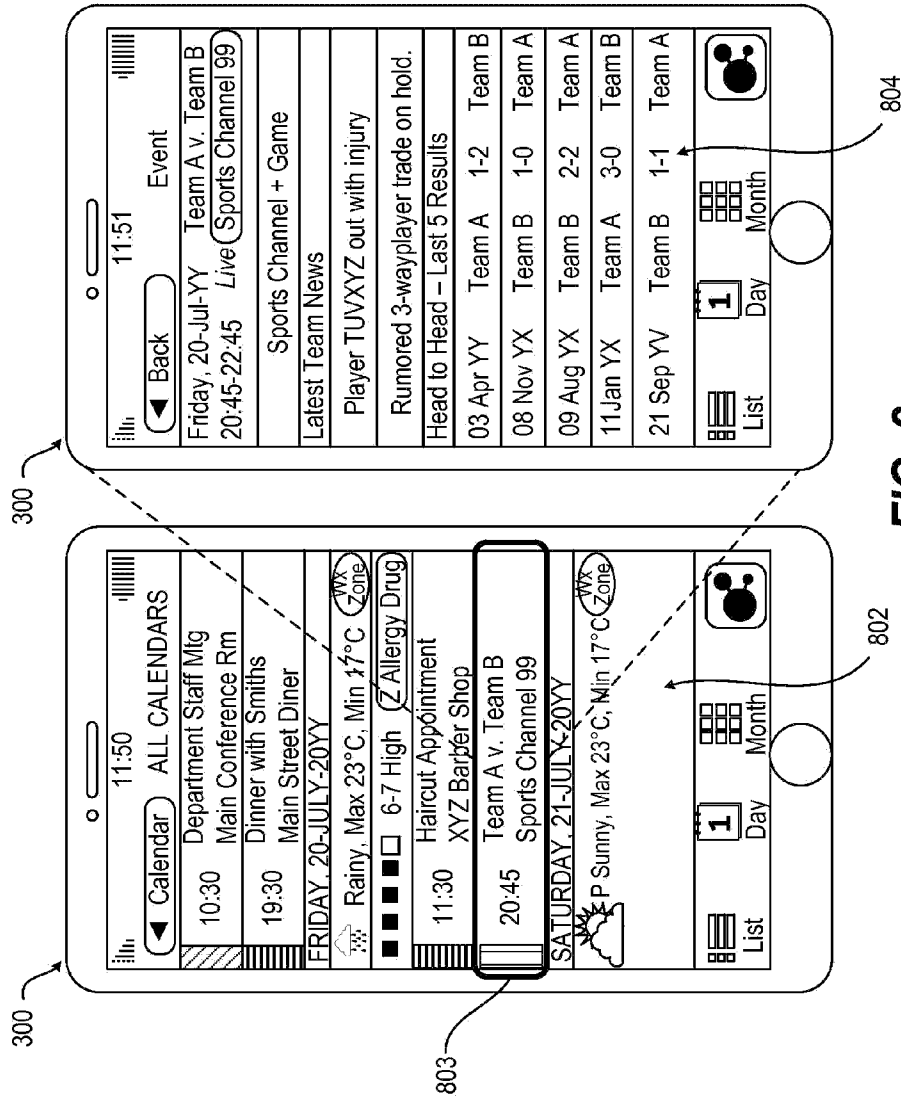


FIG. 8

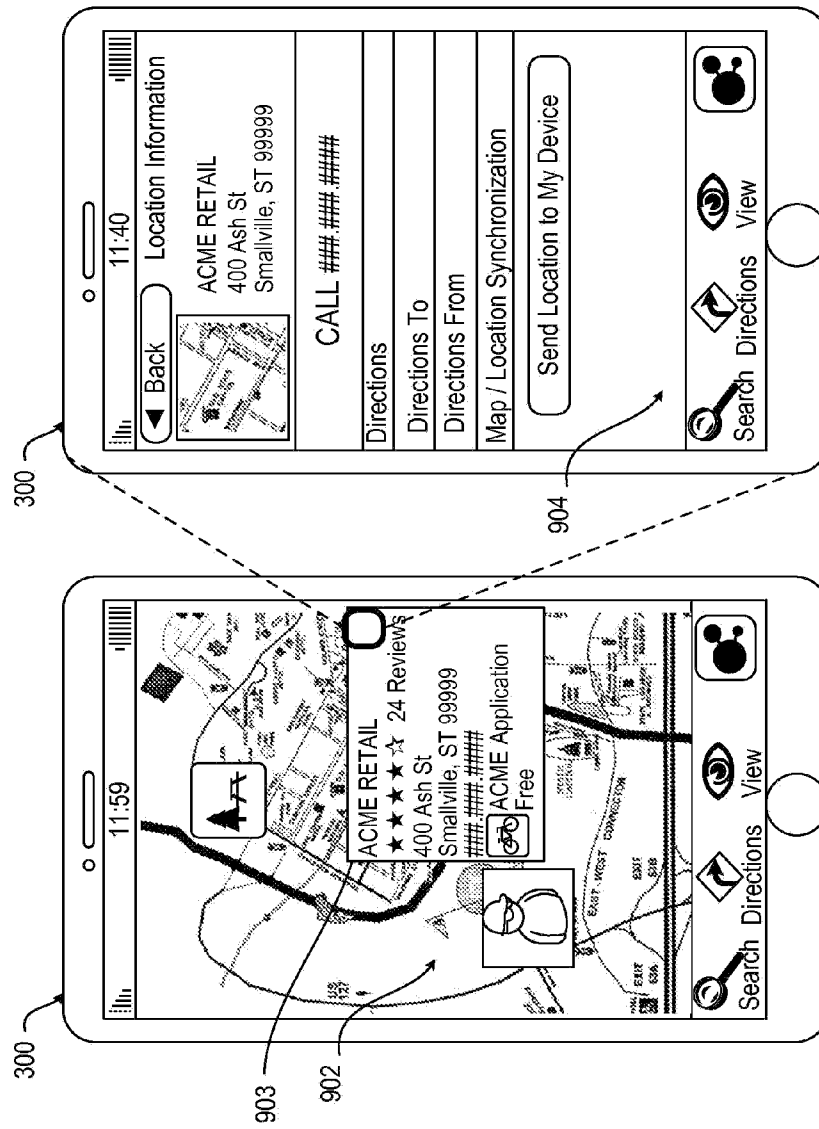


FIG. 9

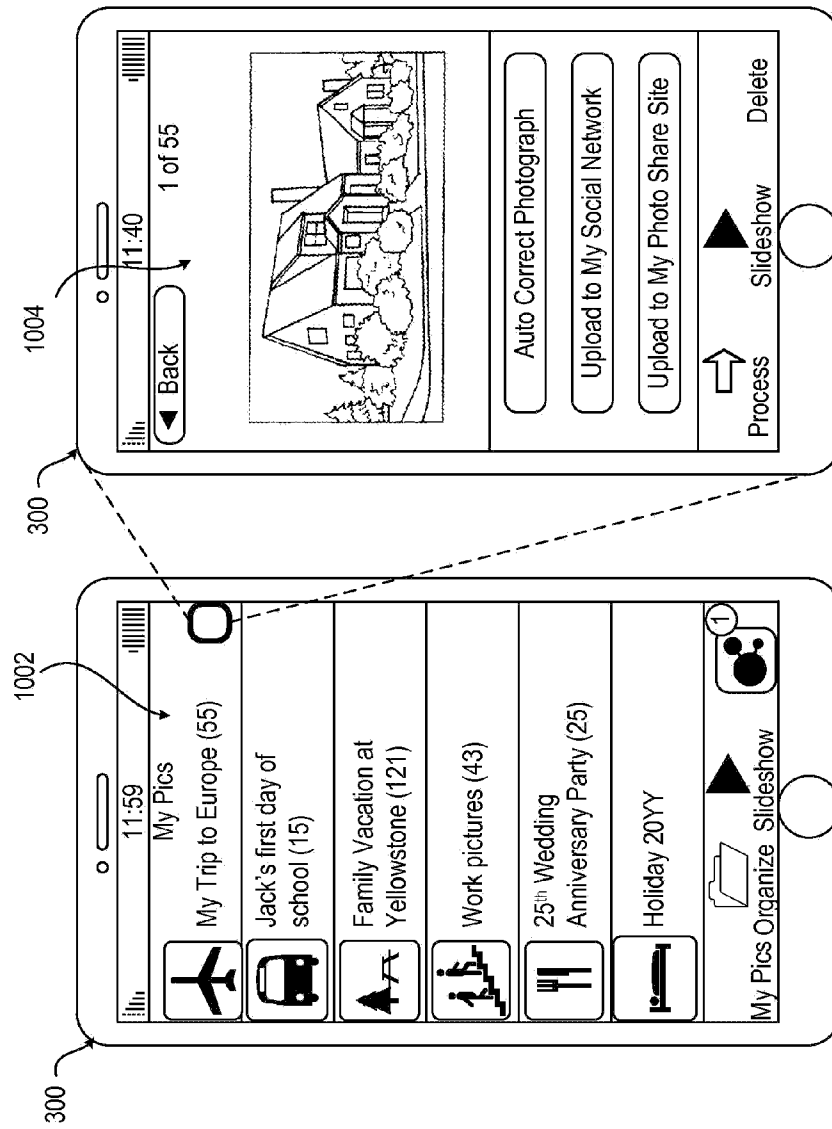


FIG. 10

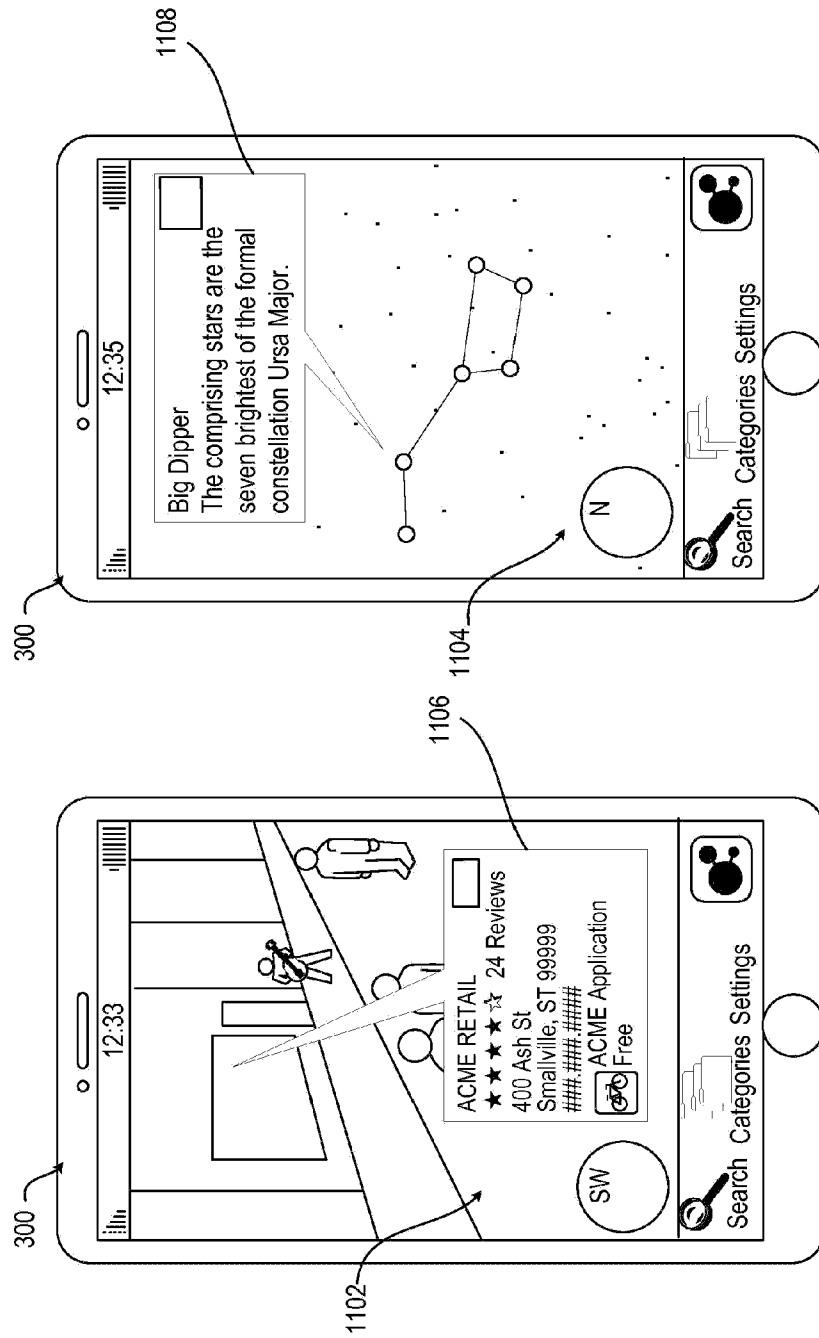


FIG. 11A

FIG. 11B

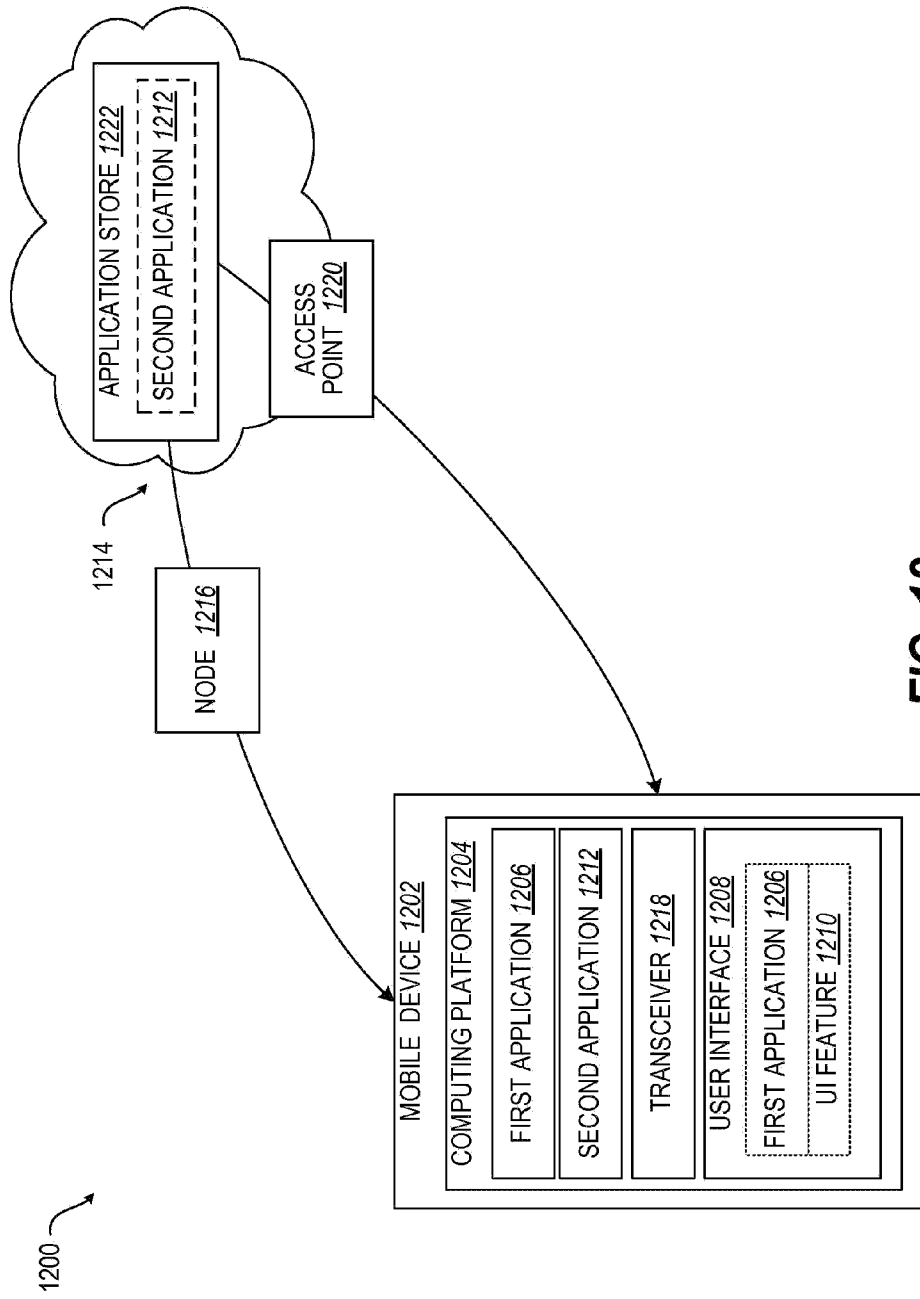
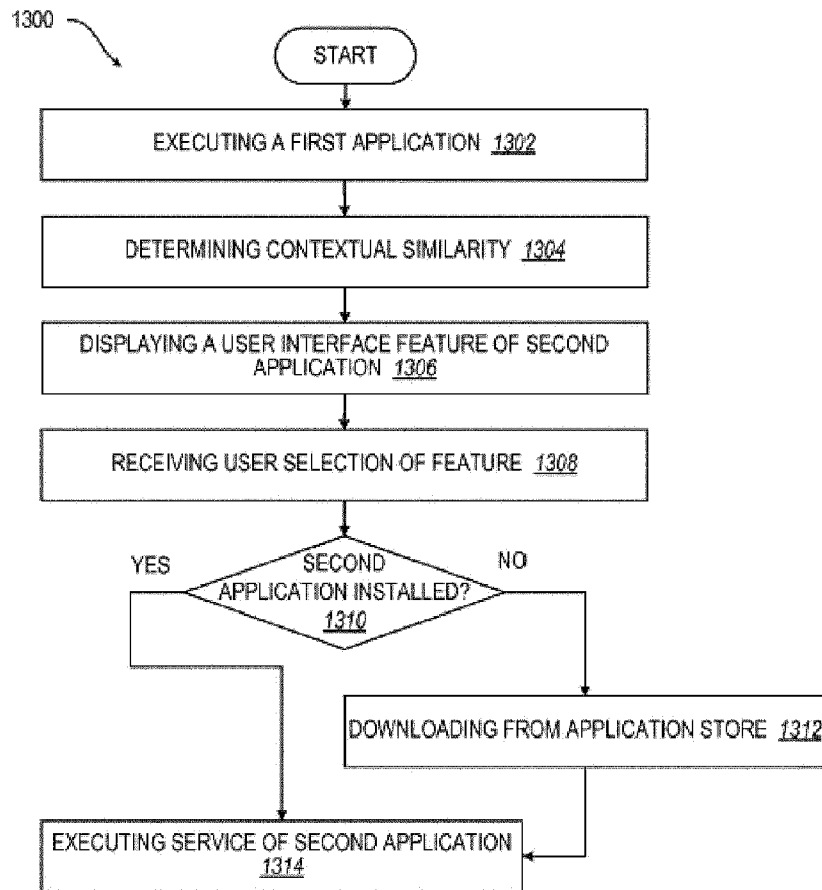
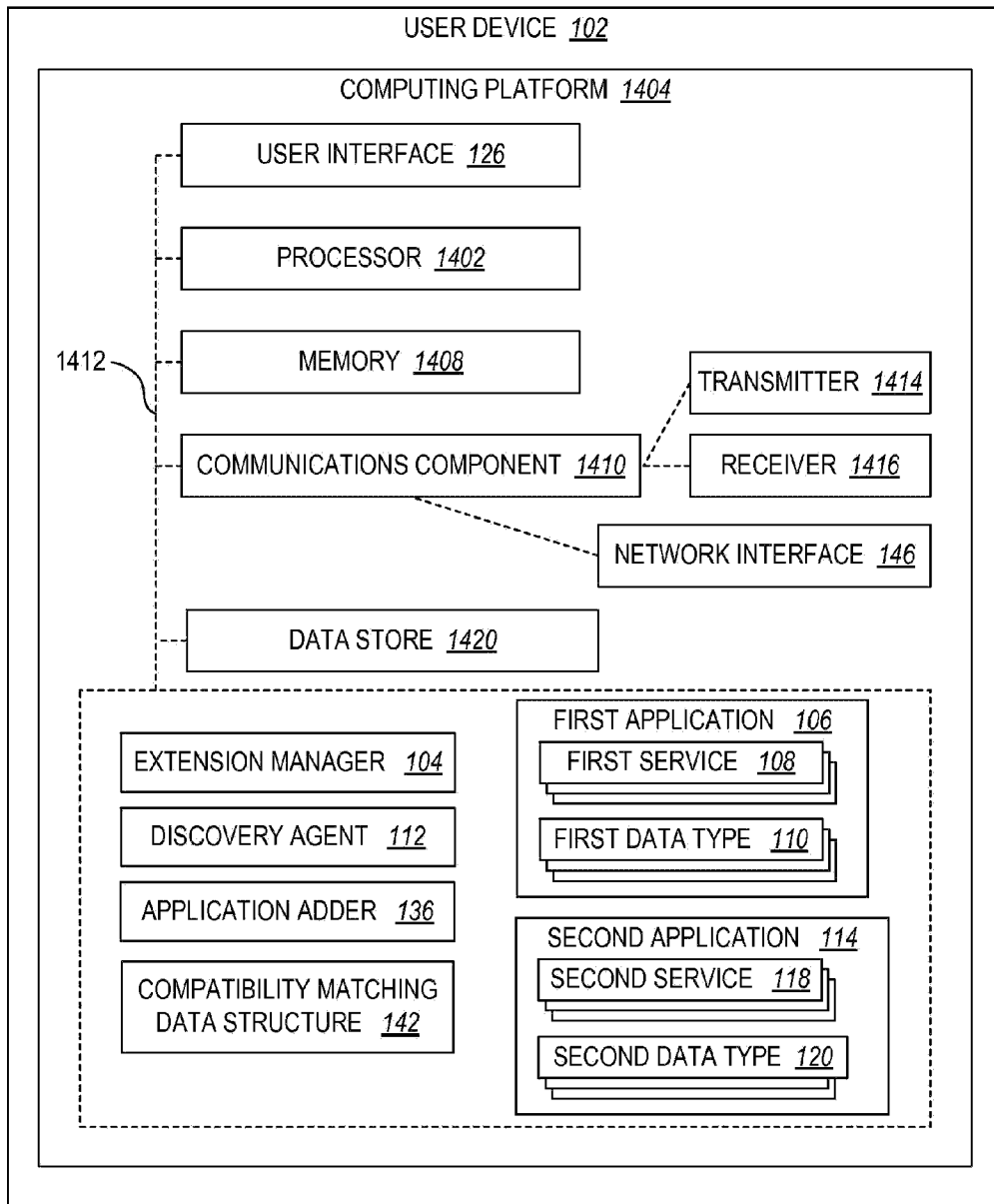
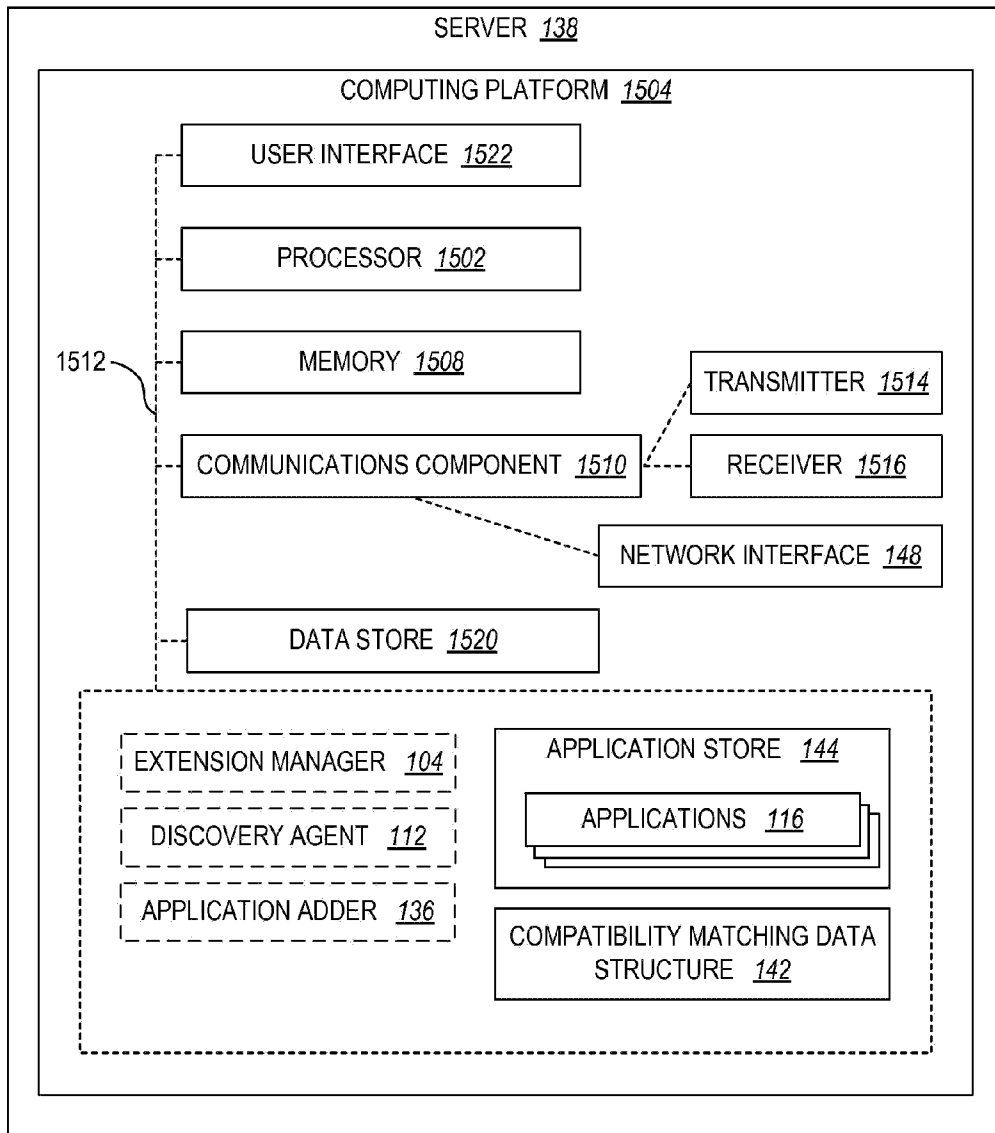
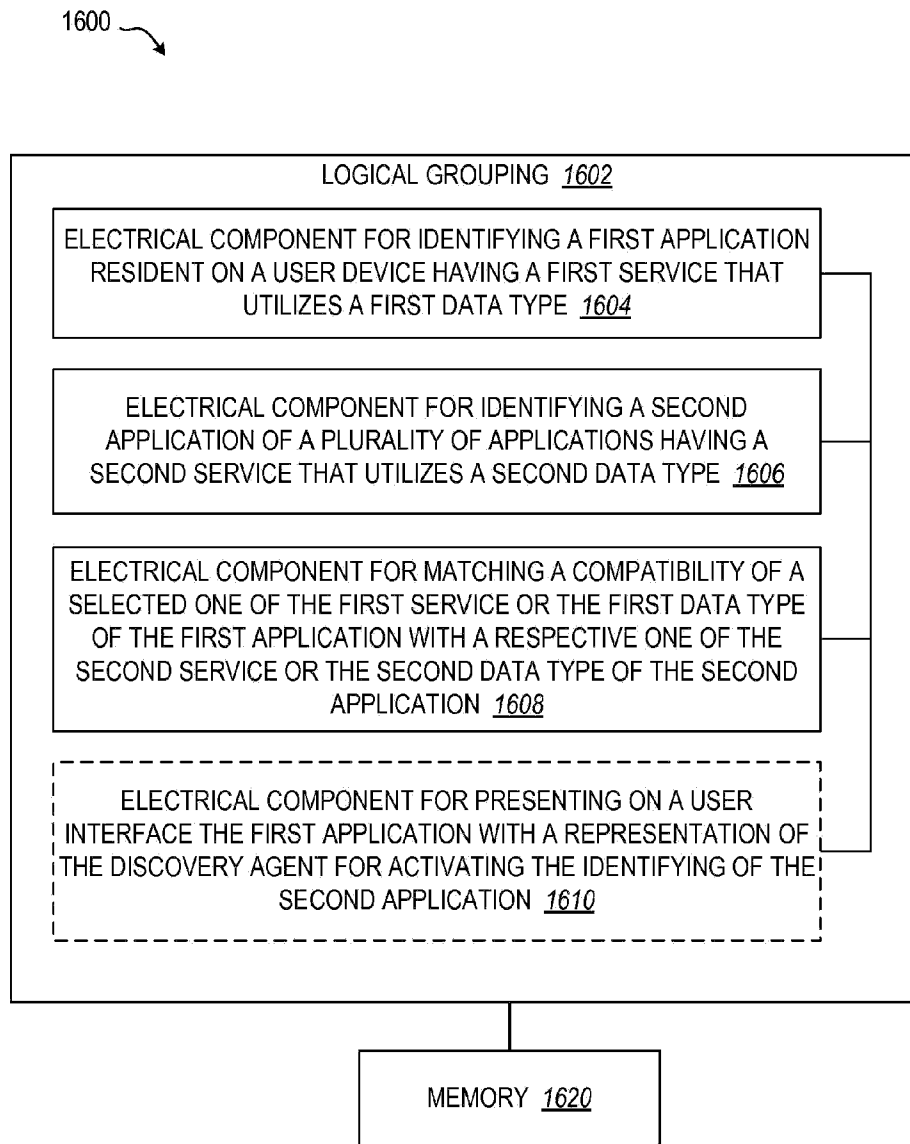


FIG. 12

**FIG. 13**

**FIG. 14**

**FIG. 15**

**FIG. 16**