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(54) **DISPLAY OF A CONNECTION SPEED OF AN ON-LINE USER**

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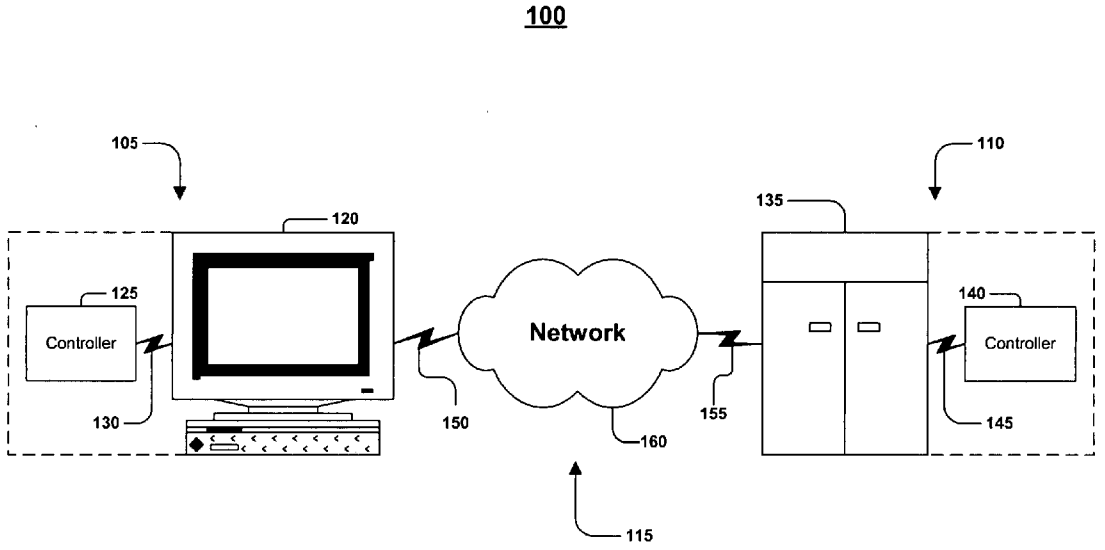
(57) **ABSTRACT**

A computer-implemented method includes providing a computer service to a user and displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list. Information about the data transfer rate of at least one of the other users is accessed and establishing a threshold data transfer rate is established. The accessed data transfer rate is compared with the threshold data transfer rate, and a graphic associated with one of the other users is displayed in the list, which classifies on-line communications available to the other listed user based on results of the comparison between the accessed data transfer rate and the threshold data transfer rate.



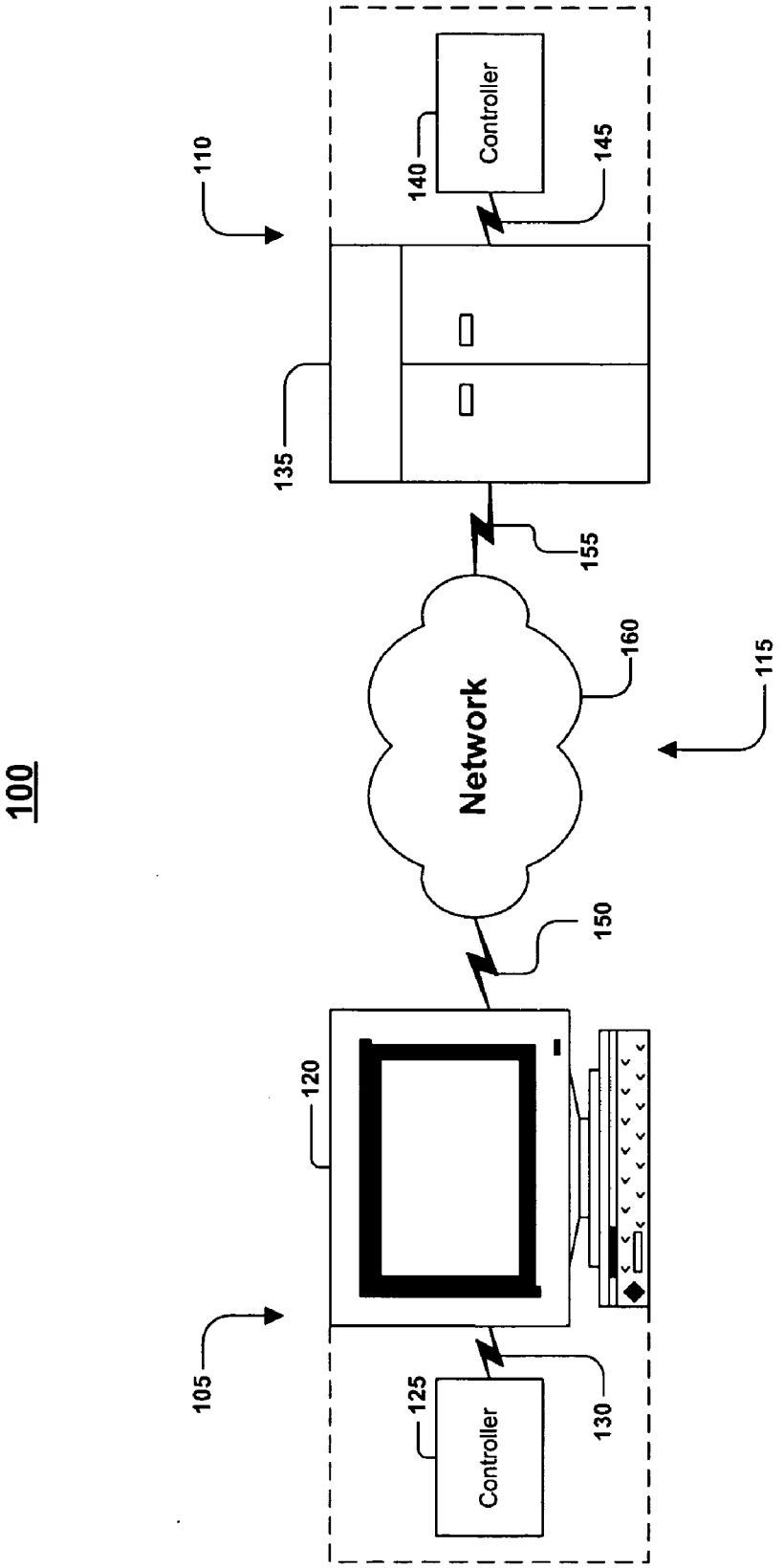

100
110
Controller
140
145
135
155
Network
160
115
150
120
105
125
Controller
130

FIG. 1

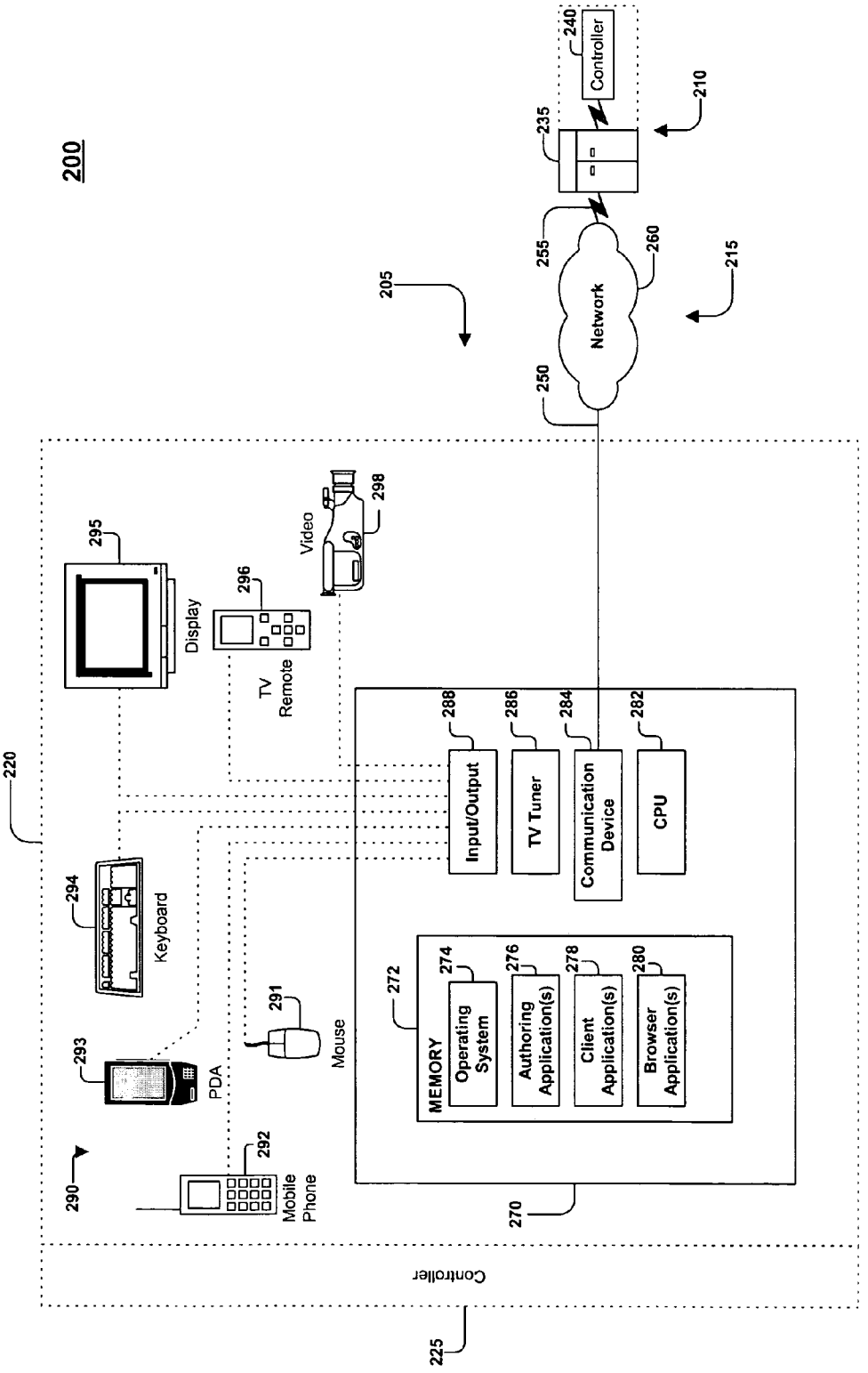

200
240
Controller
210
235
255
260
Network
215
205
250
220
295
Display
296
TV Remote
Video
298
288
Input/Output
286
TV Tuner
284
Communication Device
282
CPU
294
Keyboard
291
Mouse
293
PDA
292
Mobile Phone
290
272
MEMORY
274
Operating System
276
Authoring Application(s)
278
Client Application(s)
280
Browser Application(s)
270
Controller
225

FIG. 2

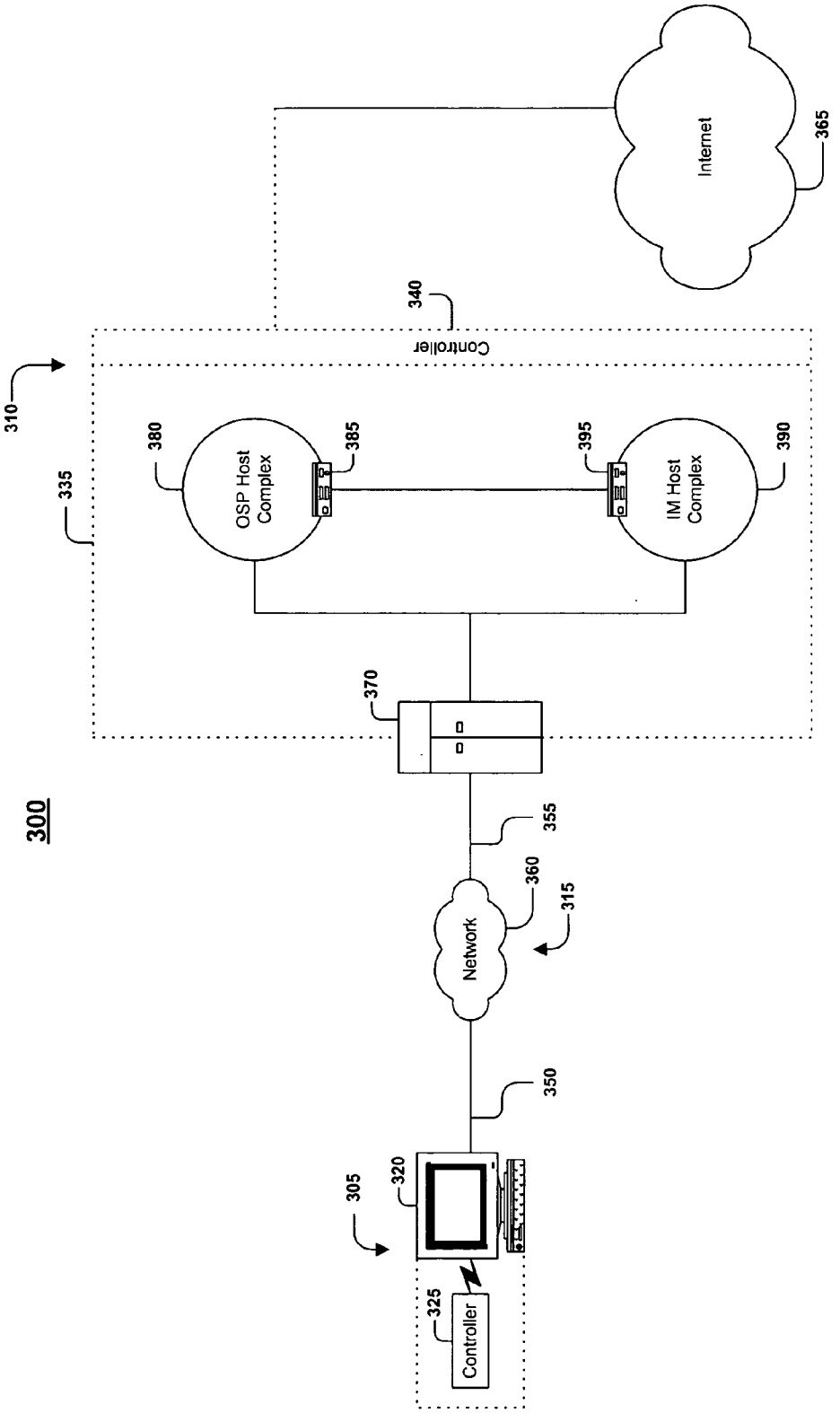

300
310
335
340
Controller
Internet
365
380
OSP Host Complex
385
395
IM Host Complex
390
370
355
360
Network
315
350
305
320
325
Controller

FIG. 3

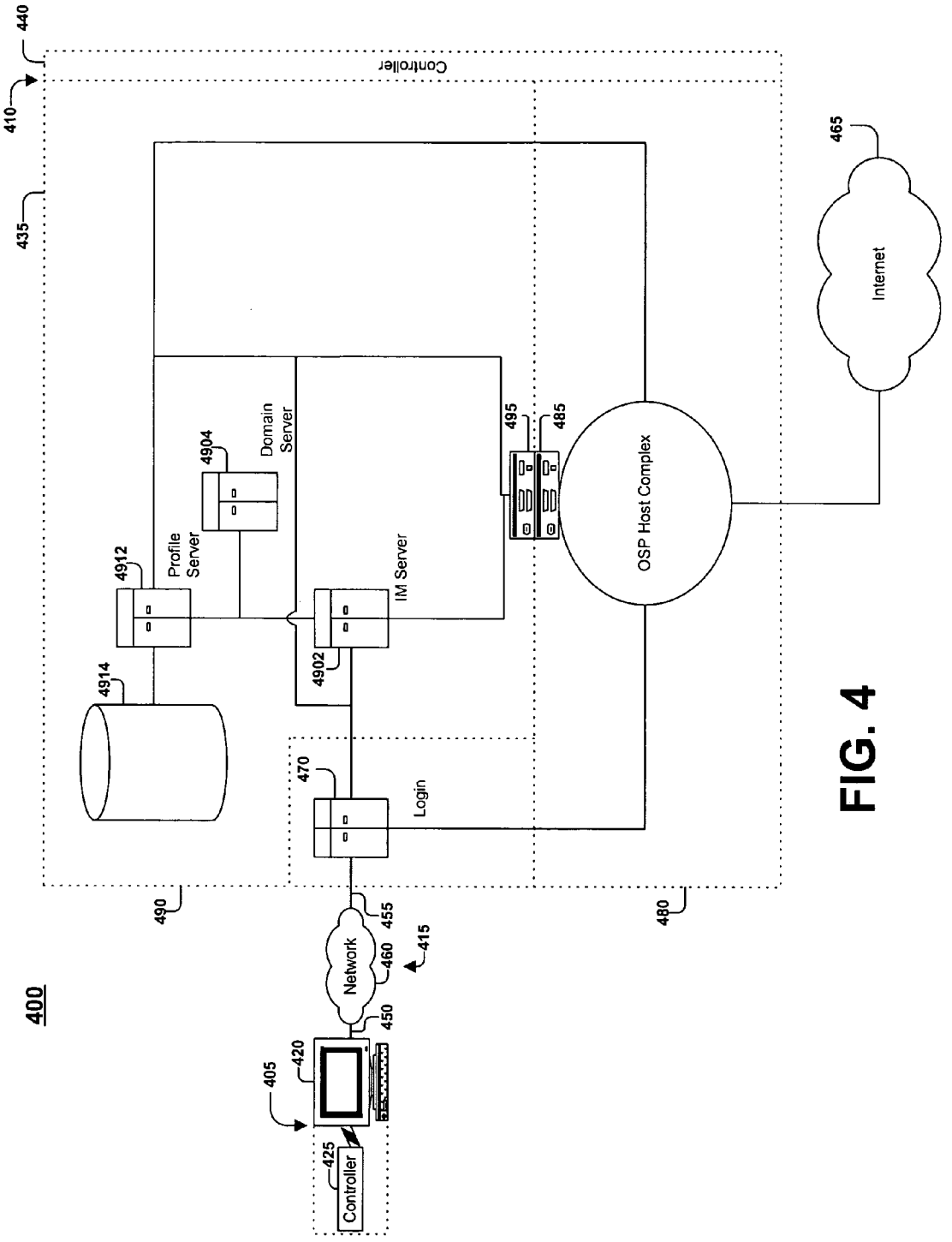

400
440
410
Controller
435
465
Internet
495
485
OSP Host Complex
4904
Domain Server
4912
Profile Server
IM Server
4902
4914
470
Login
490
480
455
415
Network
460
450
420
405
425
Controller

FIG. 4

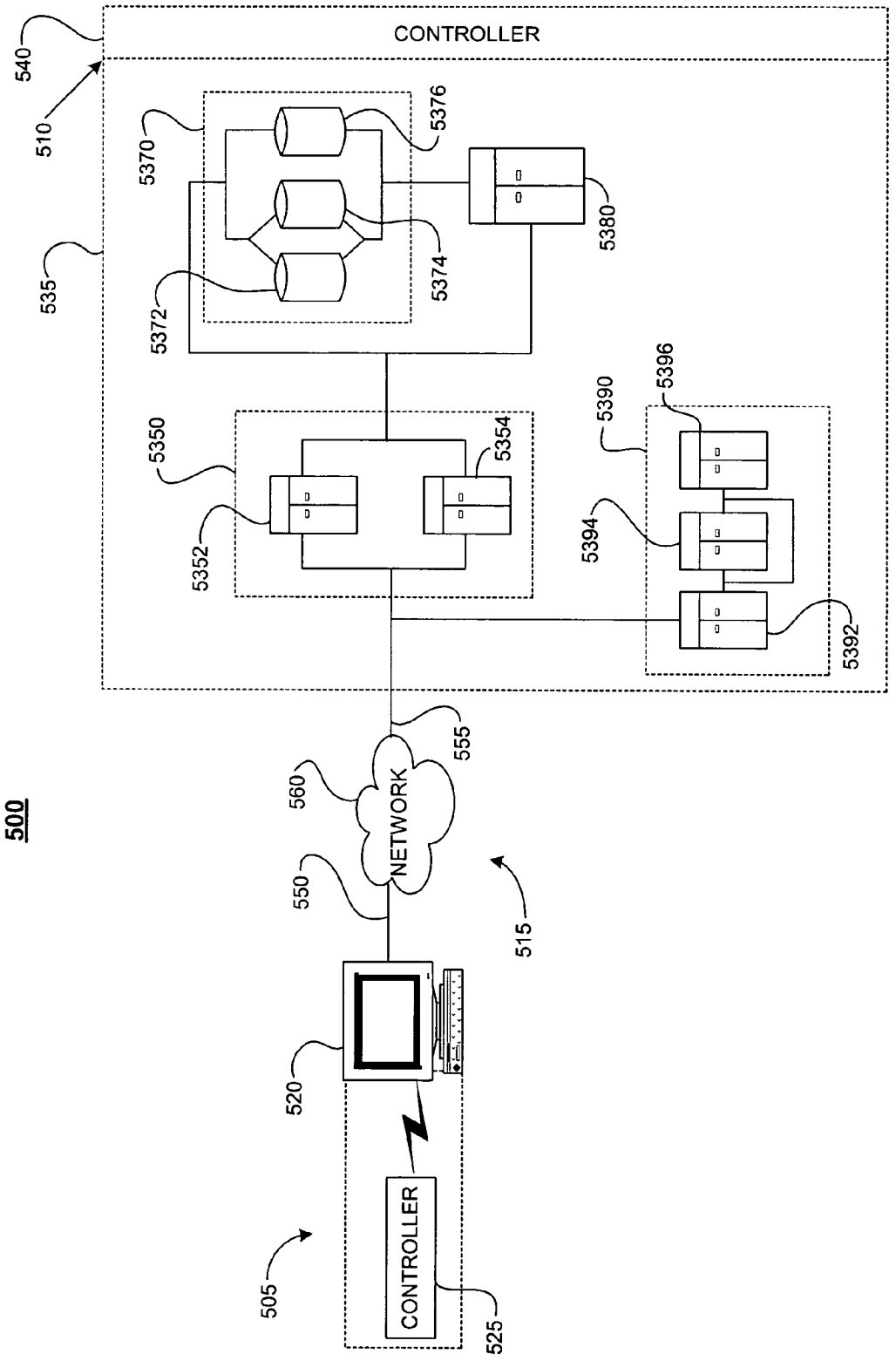

500
CONTROLLER
540
510
535
5370
5372
5374
5376
5380
5350
5352
5354
5390
5394
5396
5392
555
560
NETWORK
550
515
520
505
CONTROLLER
525

FIG. 5

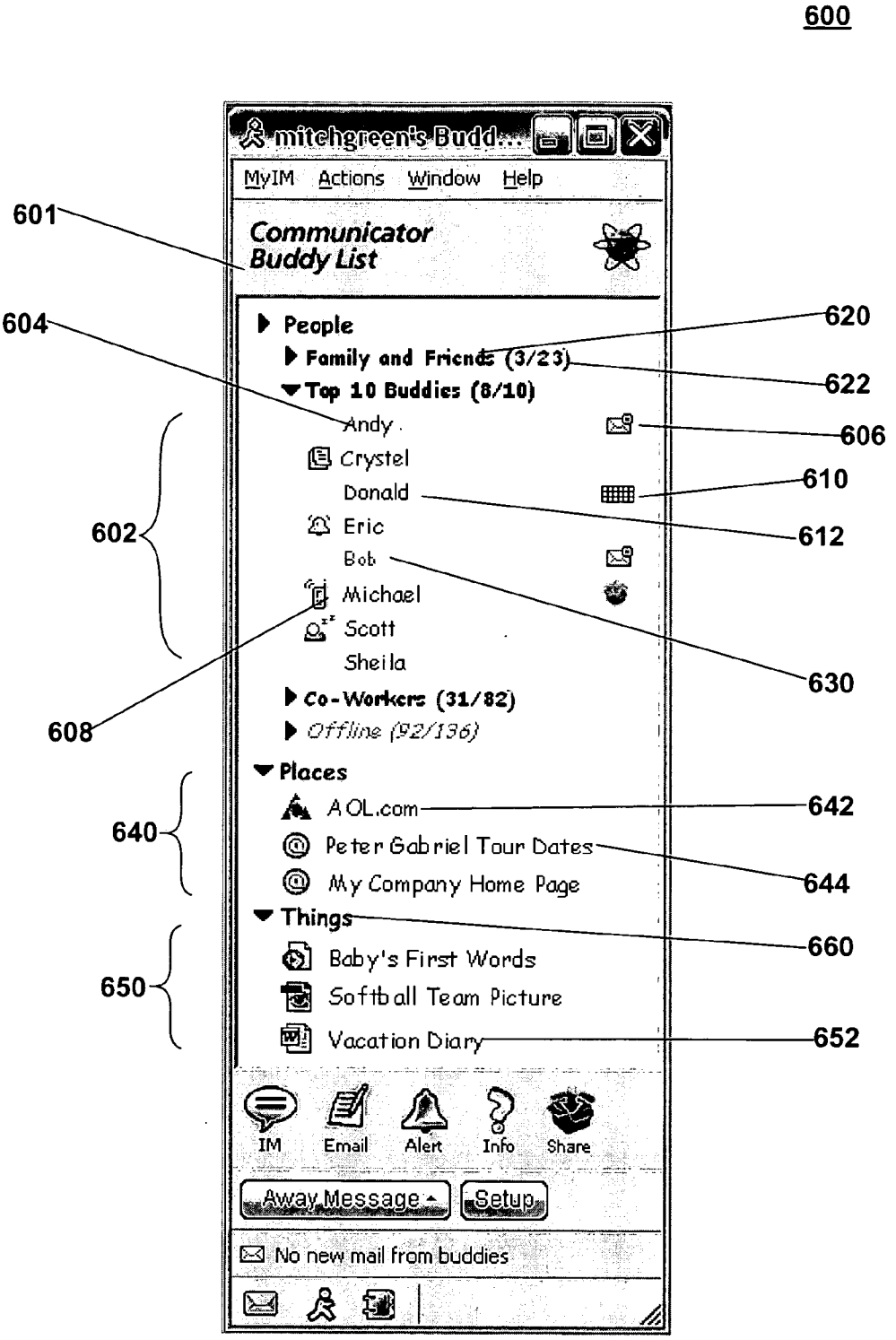

600
mitchgreen's Budd...
MyIM Actions Window Help
Communicator Buddy List
601
People
Family and Friends (3/23)
Top 10 Buddies (8/10)
Andy
Crystel
Donald
Eric
Bob
Michael
Scott
Sheila
Co-Workers (31/82)
Offline (92/136)
Places
AOL.com
Peter Gabriel Tour Dates
My Company Home Page
Things
Baby's First Words
Softball Team Picture
Vacation Diary
IM
Email
Alert
Info
Share
Away Message
Setup
No new mail from buddies
604
620
622
606
610
612
602
608
630
640
642
644
650
660
652

FIG. 6

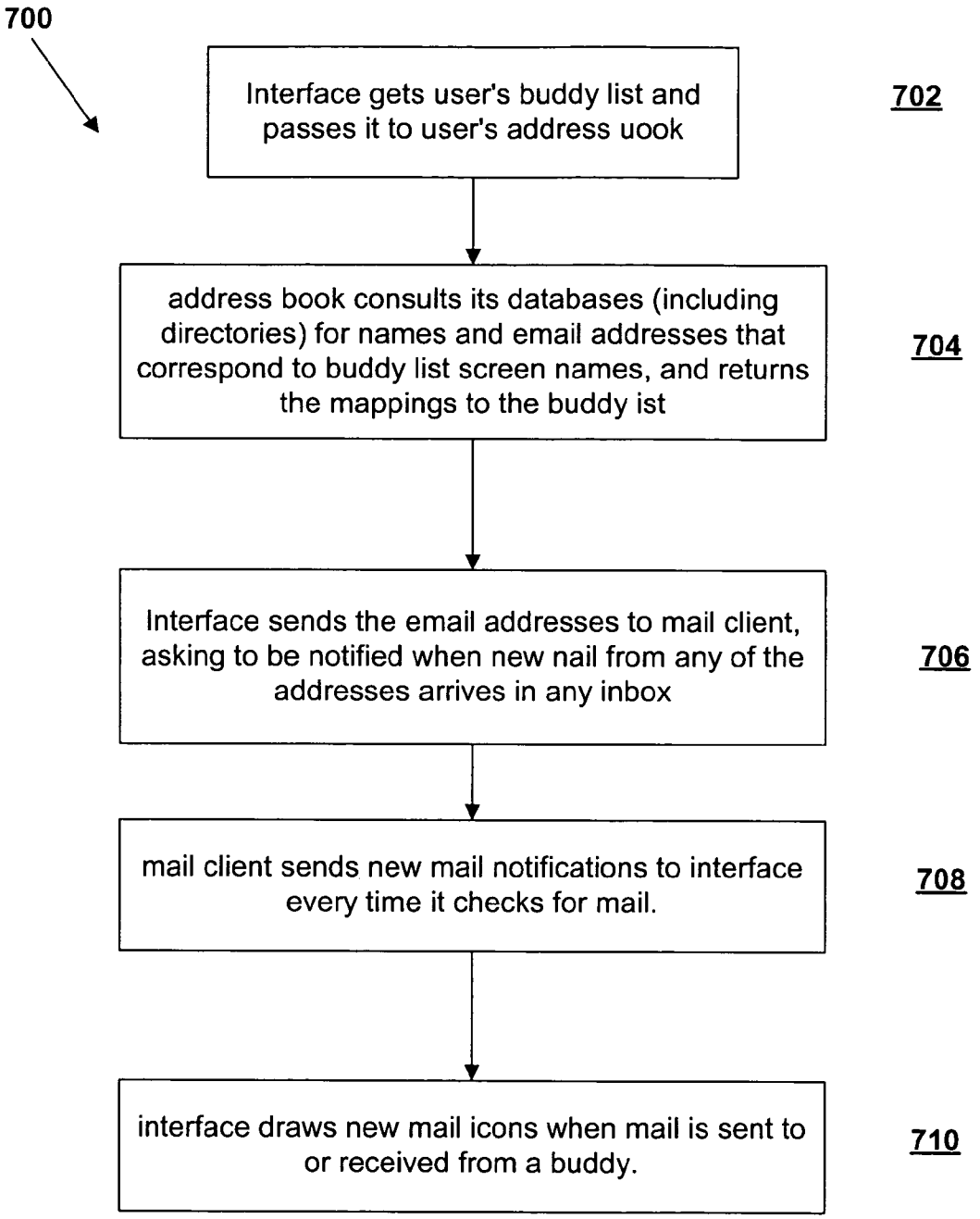

700
Interface gets user's buddy list and passes it to user's address uook
702
address book consults its databases (including directories) for names and email addresses that correspond to buddy list screen names, and returns the mappings to the buddy ist
704
Interface sends the email addresses to mail client, asking to be notified when new nail from any of the addresses arrives in any inbox
706
mail client sends new mail notifications to interface every time it checks for mail.
708
interface draws new mail icons when mail is sent to or received from a buddy.
710

FIG. 7

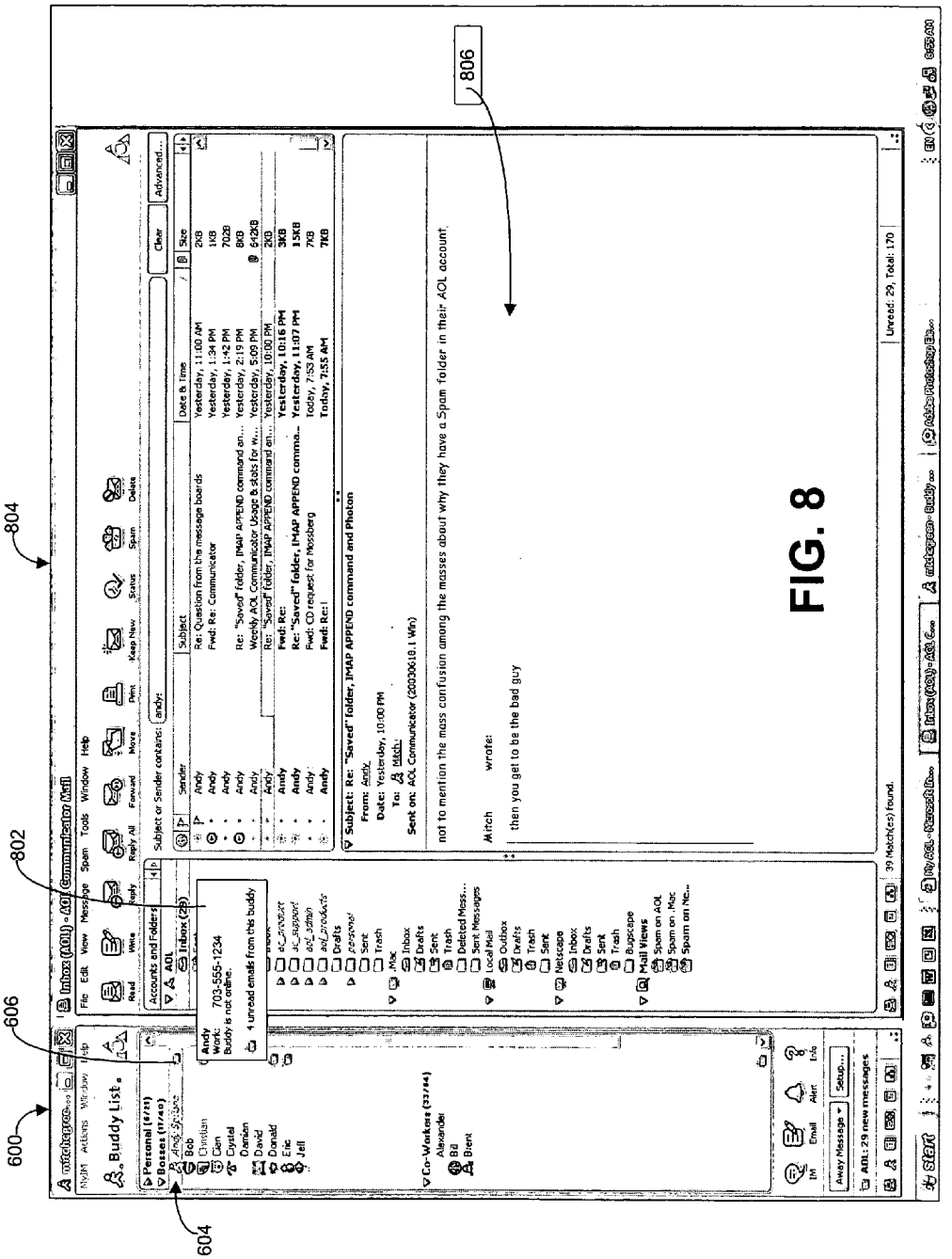


FIG. 8

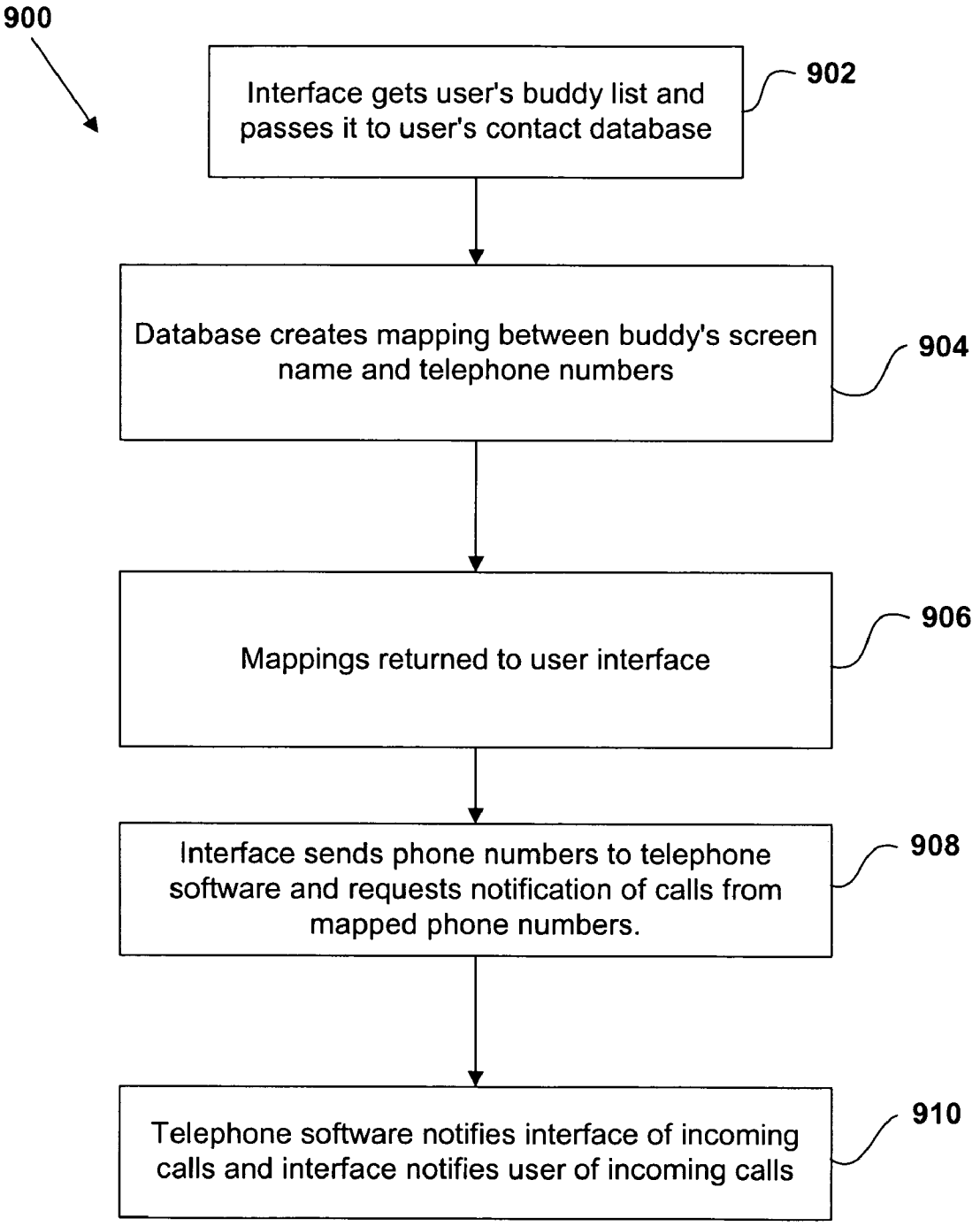

900
Interface gets user's buddy list and passes it to user's contact database
902
Database creates mapping between buddy's screen name and telephone numbers
904
Mappings returned to user interface
906
Interface sends phone numbers to telephone software and requests notification of calls from mapped phone numbers.
908
Telephone software notifies interface of incoming calls and interface notifies user of incoming calls
910

FIG. 9

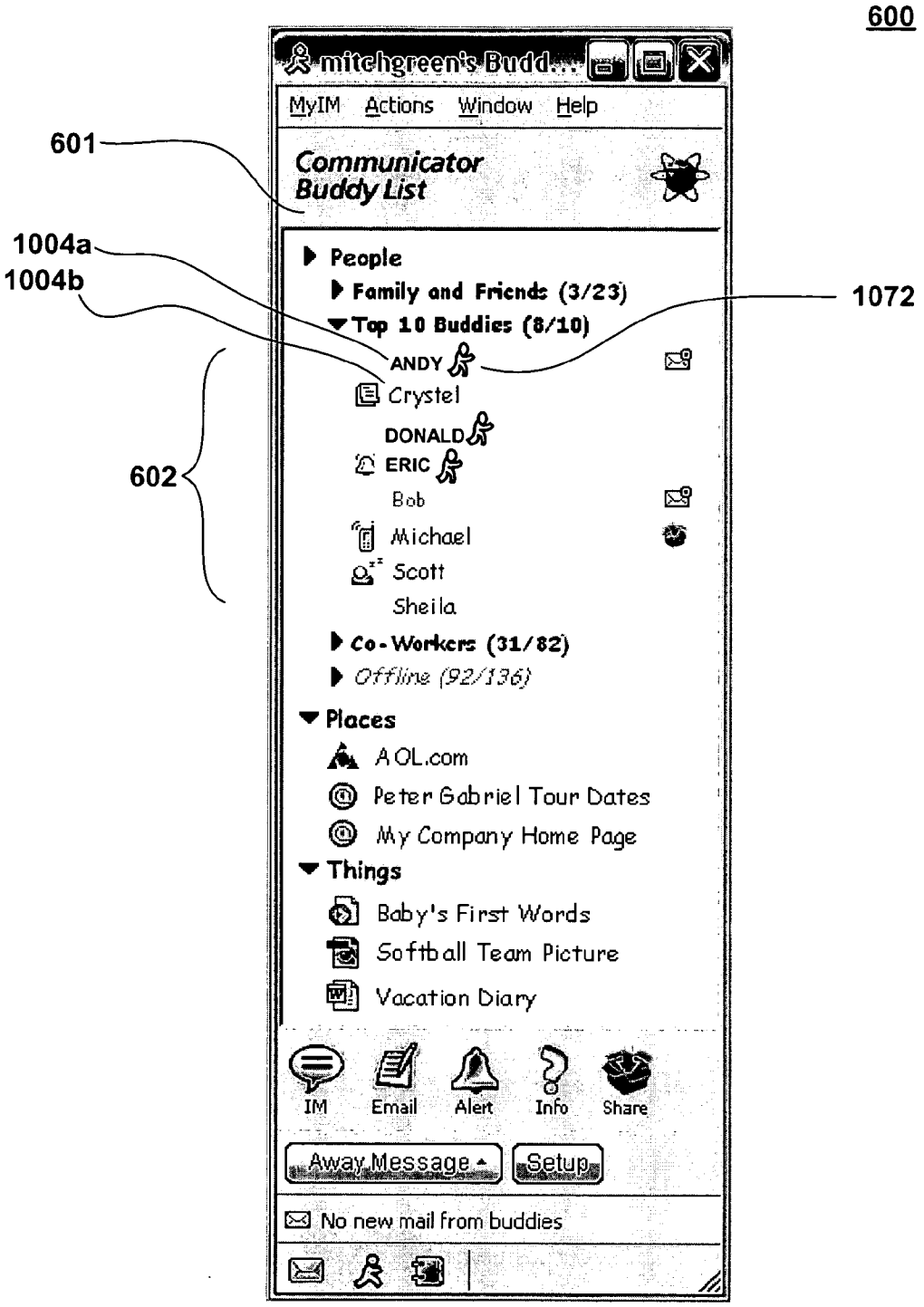

600
601
1004a
1004b
1072
602
mitchgreen's Budd...
MyIM Actions Window Help
Communicator Buddy List
People
Family and Friends (3/23)
Top 10 Buddies (8/10)
ANDY
Crystel
DONALD
ERIC
Bob
Michael
Scott
Sheila
Co-Workers (31/82)
Offline (92/136)
Places
AOL.com
Peter Gabriel Tour Dates
My Company Home Page
Things
Baby's First Words
Softball Team Picture
Vacation Diary
IM
Email
Alert
Info
Share
Away Message
Setup
No new mail from buddies

FIG. 10

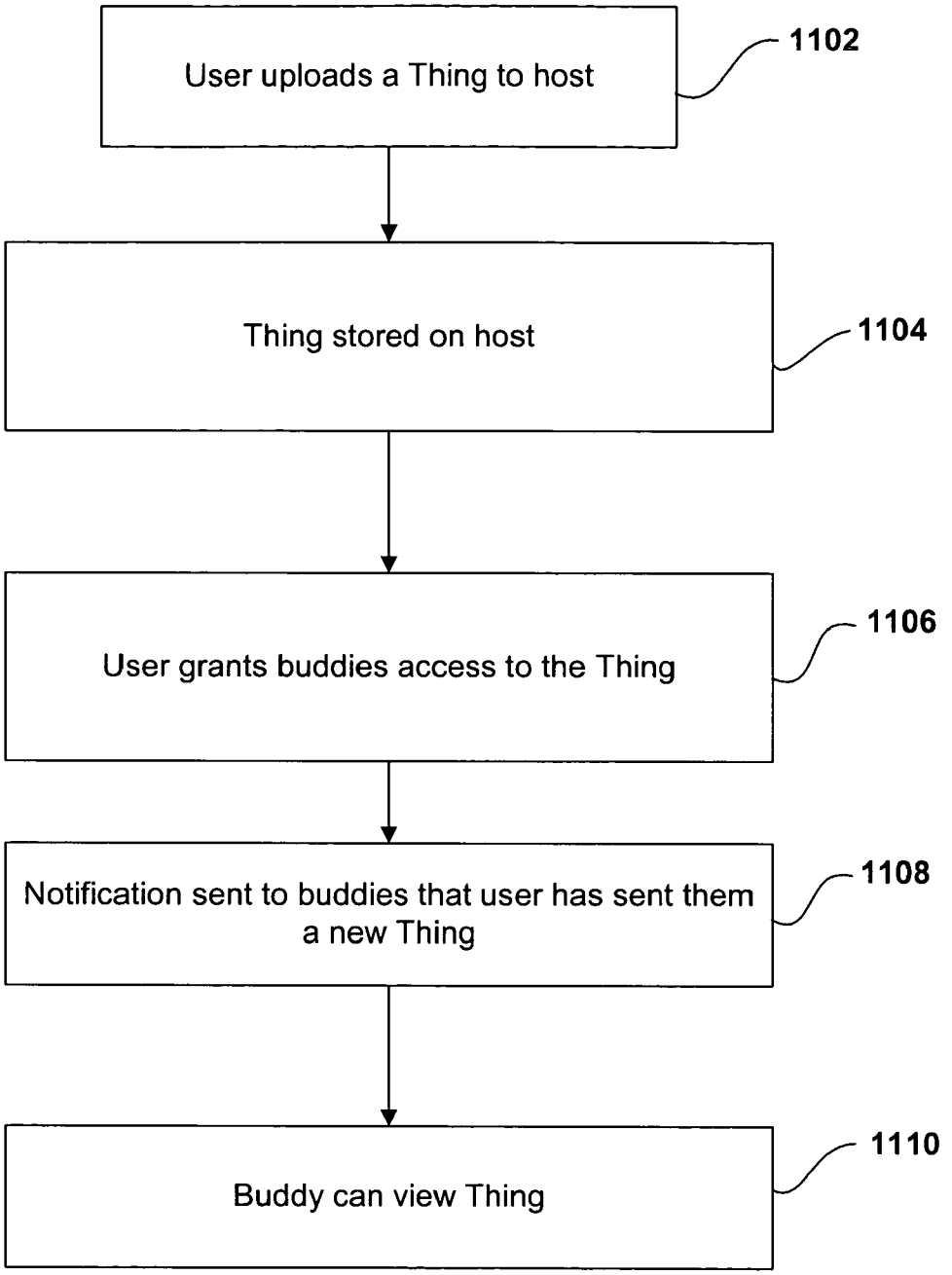

User uploads a Thing to host
1102
Thing stored on host
1104
User grants buddies access to the Thing
1106
Notification sent to buddies that user has sent them a new Thing
1108
Buddy can view Thing
1110

FIG. 11

DISPLAY OF A CONNECTION SPEED OF AN ON-LINE USER

CLAIM OF PRIORITY

[0001] This application is a continuation-in-part application of U.S. patent application Ser. No. 10/715,205, filed on Nov. 18, 2003, which claimed priority to U.S. patent application Ser. No. 60/426,815, filed on Nov. 18, 2002, and to U.S. patent application Ser. No. 60/479,918, filed on Jun. 20, 2003. The entire contents of all above-mentioned applications are hereby incorporated by reference.

TECHNICAL FIELD

[0002] This disclosure generally relates to electronic communications, and more particularly to the display of a connection speed of an on-line user.

BACKGROUND

[0003] Online service providers offer services to enhance their subscribers' online experience. The service provider may provide a subscriber with access to information about news, weather, financial, sports, and entertainment services. Furthermore, the service provider may provide the subscriber with the ability to communicate with other subscribers through a wide variety of different services, such as, for example, e-mail, instant messaging, audio communication services (include telephone networks), video communications (e.g., streaming video services), common calendar services permitting the subscribers to schedule meetings with each other, and automatic communication services that alert one subscriber about the status of another subscriber. Currently, disparate pieces of information relating to a subscriber reside in different applications and services.

SUMMARY

[0004] In a general aspect, a computer-implemented method includes providing a computer service to a user and displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list. Information about the data transfer rate of at least one of the other users is accessed and establishing a threshold data transfer rate is established. The accessed data transfer rate is compared with the threshold data transfer rate, and a graphic associated with one of the other users is displayed in the list, which classifies on-line communications available to the other listed user based on results of the comparison between the accessed data transfer rate and the threshold data transfer rate.

[0005] In another general aspect, a system for displaying a graphical user interface to a user of a computer service, can include a memory adapted for storing a threshold data transfer rate and a processor that is adapted for providing the computer service to a user, displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list, accessing information about the data transfer rate of at least one of the other users, comparing the accessed data transfer rate with the threshold data transfer rate, and displaying a graphic associated with one of the other users in the list classifying on-line communications available to the other listed user based on results of the comparison between the accessed data transfer rate and the threshold data transfer rate.

[0006] In a further general aspect, a system for displaying a graphical user interface to a user of a computer service can include a means for storing a threshold data transfer rate, a means for providing the computer service to a user, a means for displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list, a means for accessing information about the data transfer rate of at least one of the other users, a means for comparing the accessed data transfer rate with the threshold data transfer rate, and a means for displaying a graphic associated with one of the other users in the list classifying on-line communications available to the other listed user based on results of the comparison between the accessed data transfer rate and the threshold data transfer rate.

[0007] In another general aspect, a graphical user interface provided to a user of a computer service can include a list of identifiers for other users of the computer service selected by the user for inclusion in the list and an graphic associated with one of the other listed users indicating that the other listed user is capable of on-line communications with the user at a rate that is above a threshold rate.

[0008] Implementations can include one or more of the following features. For example, the user can be a sender of data to the other user, and the graphic can indicate that the other user is capable of receiving the data through a desired communication mode. The graphic can be displayed only if the results of the comparison indicate that the accessed data transfer rate exceeds the threshold data transfer rate. The computer service can include an instant messaging computer service.

[0009] The graphic can be an icon. The graphic can be a distinctive font. The graphic can indicate that the other user is connected to the computer service through a broadband communications link. The graphic can indicate that the other user is connected to the computer service through a link other than an analog communications link. The graphic can indicate a type of communications link used by the other user to connect to the computer service. The graphic can indicate a characteristic transfer rate of a communications link used by the other user to connect to the computer service.

[0010] A command can be received from the user to initiate a particular mode of communication with the other user based on the comparison.

[0011] The processor can be further adapted for displaying the graphic only if the results of the comparison indicate that the accessed data transfer rate exceeds the threshold data transfer rate. The processor can be further adapted for receiving a command from the user to initiate a particular mode of communication with the other user based on the comparison.

[0012] The details of one or more implementations are set forth in the accompanying drawings and the description below. Other features will be apparent from the description and drawings, and from the claims.

DESCRIPTION OF DRAWINGS

[0013] **FIG. 1** is a block diagram of a communications system.

[0014] **FIGS. 2-5** are block diagrams of expansions of aspects the block diagram of **FIG. 1**.

[0015] FIGS. **6** is an illustration of a graphical user interface that may be provided by a system, such as the system of **FIG. 1**.

[0016] FIGS. **7** is a flow chart of a process that may be implemented by a system, such as the system of **FIG. 1**.

[0017] FIGS. **8** is an illustration of a graphical user interface that may be provided by a system, such as the system of **FIG. 1**.

[0018] FIGS. **9** is a flow chart of a process that may be implemented by a system, such as the system of **FIG. 1**.

[0019] FIGS. **10** is an illustration of a graphical user interface that may be provided by a system, such as the system of **FIG. 1**.

[0020] FIGS. **11** is a flow chart of a process that may be implemented by a system, such as the system of **FIG. 1**.

DETAILED DESCRIPTION

[0021] Users of networked online communications applications may communicate and exchange information with other users of the communications application(s). When a user has the capability of communicating with a vast multitude of other users with the communications application(s), the user may select a subset of the other users that are particularly important to the users and identify such users as "buddies." A list of a user's buddies may be stored in a buddy list that is displayed graphically to the user when using the communications application(s), and a graphical user interface (GUI) may be defined that lists the user's buddies and enables the user to communicate with his/her buddies through the GUI-based application (e.g., instant messaging). The functionality of the GUI can be expanded from merely enabling communication with buddies through the GUI-based application to monitoring several other communications applications and reporting on events that have occurred, that are occurring, and/or that will occur in the other applications.

[0022] For illustrative purposes, **FIGS. 1-6** describe a communications system for implementing techniques for transferring electronic data. For brevity, several elements in the figures described below are represented as monolithic entities. However, as would be understood by one skilled in the art, these elements each may include numerous interconnected computers and components designed to perform a set of specified operations and/or dedicated to a particular geographical region.

[0023] Referring to **FIG. 1**, a communications system **100** is capable of delivering and exchanging data between a client system **105** and a host system **110** through a communications link **115**. The client system **105** typically includes one or more client devices **120** and/or client controllers **125**. For example, the client system **105** may include one or more general-purpose computers (e.g., personal computers), one or more special-purpose computers (e.g., devices specifically programmed to communicate with each other and/or the host system **110**), or a combination of one or more general-purpose computers and one or more special-purpose computers. The client system **105** may be arranged to operate within or in concert with one or more other systems, such as, for example, one or more LANs ("Local Area Networks") and/or one or more WANs ("Wide Area Networks").

[0024] The client device **120** is generally capable of executing instructions under the command of a client controller **125**. The client device **120** is connected to the client controller **125** by a wired or wireless data pathway **130** capable of delivering data.

[0025] The client device **120** and client controller **125** each typically includes one or more hardware components and/or software components. An example of a client device **120** is a general-purpose computer (e.g., a personal computer) capable of responding to and executing instructions in a defined manner. Other examples include a special-purpose computer, a workstation, a server, a hand-held computer, a mobile telephone, a personal digital assistant ("PDA"), a device, a component, other equipment or some combination thereof capable of responding to and executing instructions. An example of client controller **125** is a software application loaded on the client device **120** for commanding and directing communications enabled by the client device **120**. Other examples include a program, a piece of code, an instruction, a device, a computer, a computer system, or a combination thereof, for independently or collectively instructing the client device **120** to interact and operate as described herein. The client controller **125** may be embodied permanently or temporarily in any type of machine, component, equipment, storage medium, or propagated signal capable of providing instructions to the client device **120**.

[0026] The communications link **115** typically includes a delivery network **160** making a direct or indirect communication between the client system **105** and the host system **110**, irrespective of physical separation. Examples of a delivery network **160** include the Internet, the World Wide Web, WANs, LANs, analog or digital wired and wireless telephone networks (e.g., PSTN, ISDN, or xDSL), radio, television, cable, satellite, and/or any other delivery mechanism for carrying data. The communications link **115** may include communication pathways **150**, **155** that enable communications through the one or more delivery networks **160** described above. Each of the communication pathways **150**, **155** may include, for example, a wired, wireless, cable, or satellite communication pathway.

[0027] The communications link **115** facilitates communication between the client system **105** and the host system **110** at a rate that is generally limited to a maximum data transfer rate. The maximum data transfer rate is determined by, among other things, the hardware, software, and/or protocols used to transfer data between the client system **105** and the host system **110**. For typical "dial-up" communications links **115** that connect the client system **105** to the host system **110** through a telephone line (e.g., an analog V.90 connection or an Integrated Services Digital Network ("ISDN") connection), the transfer rate is generally below **100** kilobits per second. For faster "broadband" communications links **115** that connect the client system **105** and the host system **110** (e.g., a cable connection, a digital subscriber line ("DSL") connection, a T1 connection, or an

802.11b wireless connection), the transfer rate is generally higher than 100 kilobits per second, and is often higher than 1000 kilobits per second. Thus, the transfer rate for "broadband" communications links **115** is often more than ten times faster than the transfer rate of "dial-up" communications links **115**.

[**0028**] The host system **110** includes a host device **135** capable of executing instructions under the command and direction of a host controller **140**. The host device **135** is connected to the host controller **140** by a wired or wireless data pathway **145** capable of carrying and delivering data.

[**0029**] The host system **110** typically includes one or more host devices **135** and/or host controllers **140**. For example, the host system **110** may include one or more general-purpose computers (e.g., personal computers), one or more special-purpose computers (e.g., devices specifically programmed to communicate with each other and/or the client system **105**), or a combination of one or more general-purpose computers and one or more special-purpose computers. The host system **110** may be arranged to operate within or in concert with one or more other systems, such as, for example, one or more LANs ("Local Area Networks") and/or one or more WANs ("Wide Area Networks").

[**0030**] The host device **135** and host controller **140** each typically includes one or more hardware components and/or software components. An example of a host device **135** is a general-purpose computer (e.g., a personal computer) capable of responding to and executing instructions in a defined manner. Other examples include a special-purpose computer, a workstation, a server, a device, a component, other equipment or some combination thereof capable of responding to and executing instructions. An example of host controller **140** is a software application loaded on the host device **135** for commanding and directing communications enabled by the host device **135**. Other examples include a program, a piece of code, an instruction, a device, a computer, a computer system, or a combination thereof, for independently or collectively instructing the host device **135** to interact and operate as described herein. The host controller **140** may be embodied permanently or temporarily in any type of machine, component, equipment, storage medium, or propagated signal capable of providing instructions to the host device **135**.

[**0031**] **FIG. 2** illustrates a communication system **200** including a client system **205** communicating with a host system **210** through a communications link **215**. Client system **205** typically includes one or more client devices **220** and one or more client controllers **225** for controlling the client devices **220**. Host system **210** typically includes one or more host devices **235** and one or more host controllers **240** for controlling the host devices **235**. The communications link **215** may include communication pathways **250**, **255** enabling communications through the one or more delivery networks **260**.

[**0032**] Examples of each element within the communication system of **FIG. 2** are broadly described above with respect to **FIG. 1**. In particular, the host system **210** and communications link **215** typically have attributes comparable to those described with respect to host system **110** and communications link **115** of **FIG. 1**. Likewise, the client system **205** of **FIG. 2** typically has attributes comparable to and illustrates one possible embodiment of the client system **105** of **FIG. 1**.

[**0033**] The client device **220** typically includes a general purpose computer **270** having an internal or external storage **272** for storing data and programs such as an operating system **274** (e.g., DOS, Windows™, Windows 95™, Windows 98™, Windows 2000™, Windows XP™, Windows NT™, OS/2, or Linux) and one or more application programs. Examples of application programs include authoring applications **276** (e.g., word processing, database programs, spreadsheet programs, email program, calendar programs, or graphics programs) capable of generating and/or editing documents or other electronic content; client applications **278** (e.g., AOL client, CompuServe client, AIM client, AOL TV client, or ISP client) capable of communicating with other computer users, accessing various computer resources, and viewing, creating, or otherwise manipulating electronic content; and browser applications **280** (e.g., Netscape Navigator or Microsoft Internet Explorer) capable of rendering Internet content.

[**0034**] The general-purpose computer **270** also includes a central processing unit **282** (CPU) for executing instructions in response to commands from the client controller **225**. In one implementation, the client controller **225** includes one or more of the application programs installed on the internal or external storage **272** of the general-purpose computer **270**. In another implementation, the client controller **225** includes application programs externally stored in and performed by one or more device(s) external to the general-purpose computer **270**.

[**0035**] The general-purpose computer typically includes a communication device **284** for sending and receiving data. One example of the communication device **284** is a modem. Other examples include a transceiver, a set-top box, a communication card, a satellite dish, an antenna, wireless router, or another network adapter capable of transmitting and receiving data over the communications link **215** through a wired or wireless data pathway **250**. The general-purpose computer **270** also may include a TV ("television") tuner **286** for receiving television programming in the form of broadcast, satellite, and/or cable TV signals. As a result, the client device **220** can selectively and/or simultaneously display network content received by communications device **284** and television programming content received by the TV tuner **286**.

[**0036**] The general-purpose computer **270** typically includes an input/output interface **288** for wired or wireless connection to various peripheral devices **290**. Examples of peripheral devices **290** include, but are not limited to, a mouse **291**, a mobile phone **292**, a personal digital assistant **293** (PDA), a keyboard **294**, a display monitor **295** with or without a touch screen input, a TV remote control **296** for receiving information from and rendering information to subscribers, and an audiovisual input device **298**.

[**0037**] Although **FIG. 2** illustrates devices such as a mobile telephone **292**, a PDA **293**, and a TV remote control **296** as being peripheral with respect to the general-purpose computer **270**, in another implementation, such devices may themselves include the functionality of the general-purpose computer **270** and operate as the client device **220**. For example, the mobile phone **292** or the PDA **293** may include computing and networking capabilities and function as a client device **220** by accessing the delivery network **260** and communicating with the host system **210**. Furthermore, the

client system **205** may include one, some or all of the components and devices described above.

[**0038**] Referring to **FIG. 3**, a communications system **300** is capable of delivering and exchanging information between a client system **305** and a host system **310** through a communication link **315**. Client system **305** typically includes one or more client devices **320** and one or more client controllers **325** for controlling the client devices **320**. Host system **310** typically includes one or more host devices **335** and one or more host controllers **340** for controlling the host devices **335**. The communications link **315** may include communication pathways **350**, **355** enabling communications through the one or more delivery networks **360**.

[**0039**] Examples of each element within the communication system of **FIG. 3** are broadly described above with respect to **FIGS. 1 and 2**. In particular, the client system **305** and the communications link **315** typically have attributes comparable to those described with respect to client systems **105** and **205** and communications links **115** and **215** of **FIGS. 1 and 2**. Likewise, the host system **310** of **FIG. 3** may have attributes comparable to and illustrates one possible embodiment of the host systems **110** and **210** shown in **FIGS. 1 and 2**, respectively.

[**0040**] The host system **310** includes a host device **335** and a host controller **340**. The host controller **340** is generally capable of transmitting instructions to any or all of the elements of the host device **335**. For example, in one implementation, the host controller **340** includes one or more software applications loaded on the host device **335**. However, in other implementations, as described above, the host controller **340** may include any of several other programs, machines, and devices operating independently or collectively to control the host device **335**.

[**0041**] The host device **335** includes a login server **370** for enabling access by subscribers and routing communications between the client system **305** and other elements of the host device **335**. The host device **335** also includes various host complexes such as the depicted OSP ("Online Service Provider") host complex **380** and IM ("Instant Messaging") host complex **390**. To enable access to these host complexes by subscribers, the client system **305** includes communication software, such as, for example, an OSP client application and an IM client application. The OSP and IM communication software applications are designed to facilitate the subscriber's interactions with the respective services and, in particular, may provide access to all the services available within the respective host complexes.

[**0042**] Typically, communications using an IM application involve an instantaneous or nearly instantaneous communication between two users, where each user is able to transmit, receive and display communicated information. Additionally, IM communications may involve the display and perception of online presence information regarding other selected users ("buddies"). Examples of IM communications exist over AIM (America Online Instant Messenger), AOL (America Online) Buddy List and Instant Messages, Yahoo Messenger, MSN Messenger, and ICQ, among others. Although discussed below primarily with respect to IM applications, other implementations are contemplated for providing similar functionality in platforms and online applications such as chat, e-mail, and streaming media applications.

[**0043**] Typically, the OSP host complex **380** supports different services, such as email, discussion groups, chat, news services, file storage, and Internet access. The OSP host complex **380** is generally designed with an architecture that enables the machines within the OSP host complex **380** to communicate with each other and employs certain protocols (i.e., standards, formats, conventions, rules, and structures) to transfer data. The OSP host complex **380** ordinarily employs one or more OSP protocols and custom dialing engines to enable access by selected client applications. The OSP host complex **380** may define one or more specific protocols for each service based on a common, underlying proprietary protocol.

[**0044**] The IM host complex **390** is generally independent of the OSP host complex **380**, and supports instant messaging services irrespective of a subscriber's network or Internet access. Thus, the IM host complex **390** allows subscribers to send and receive instant messages, whether or not they have access to any particular ISP. The IM host complex **390** may support associated services, such as administrative matters, advertising, directory services, chat, and interest groups related to the instant messaging. The IM host complex **390** has an architecture that enables all of the machines within the IM host complex to communicate with each other. To transfer data, the IM host complex **390** employs one or more standard or exclusive IM protocols.

[**0045**] The host device **335** may include one or more gateways that connect and therefore link complexes, such as the OSP host complex gateway **385** and the IM host complex gateway **395**. The OSP host complex gateway **385** and the IM host complex **395** gateway may directly or indirectly link the OSP host complex **380** with the IM host complex **390** through a wired or wireless host communication pathway **375**. Ordinarily, when used to facilitate a link between complexes, the OSP host complex gateway **385** and the IM host complex gateway **395** are privy to information regarding the protocol type anticipated by a destination complex, which enables any necessary protocol conversion to be performed incident to the transfer of data from one complex to another. For instance, the OSP host complex **380** and IM host complex **390** generally use different protocols such that transferring data between the complexes requires protocol conversion by or at the request of the OSP host complex gateway **385** and/or the IM host complex gateway **395**.

[**0046**] As shown, the client system **305** may access the Internet **365** through the host system **310**.

[**0047**] The client system **305** can exchange data with the host system **310** over the communications link **315** at a maximum rate that is limited by the hardware and software of the client system **305**, the host system **310**, and the communications link **315**. This rate of data exchange can be known as the user's connection speed, and the connection speed can be determined by a variety of methods. For example, the connection speed can be detected directly by sending data bits from the client system **305** to a daemon on the host system **310** that records the amount of data transmitted in a time period or by sending bits of data from the host system **310** to a daemon on the client system **305**, which that reports back to the host system the amount of data received in a time period. A user's IP address can be mapped to known IP addresses that are known to access the host system **310** through a particular type of connection, for

example, a broadband connect or dial-up connection, and the type of connection can be mapped to a connection speed. The type of connection used by the client system **305** to connect to the host system **310**, and hence the user's connection speed, can be determined by analyzing the protocols used to transfer information between the systems. For example, an access server on the host system **310** can determine what protocols are being used and return a highly accurate determination as to whether the user is connecting over TCP to the host server **310**. The host system **310** can send a cookie to the client system **305** that requests the client system to send back and indication of its connection speed to the host system **310** or the host system can store information about a user's connection speed in user profile that provides a record of the speed of the connection used by the user to connect to the host system **310**. One or more of the above methods, or other methods of determining a connection speed, could be used to determine a user's connection speed.

[**0048**] After the user's connection speed is determined, it is stored in the state information for the user in a memory on the host and can be used while the user is logged on to the host system **310**. In addition, the connection speed of the user can be written to a cookie or a user profile that can be used to predetermine the user's connection speed when the user connects to the host system **310** in the future and if the system **310** is not able to determine the user's connection speed in real time.

[**0049**] Referring to **FIG. 4**, a communications system **400** is capable of delivering and exchanging information between a client system **405** and a host system **410** through a communication link **415**. Client system **405** typically includes one or more client devices **420** and one or more client controllers **425** for controlling the client devices **420**. Host system **410** typically includes one or more host devices **435** and one or more host controllers **440** for controlling the host devices **435**. The communications link **415** may include communication pathways **450** and **455** that enable communications through the one or more delivery networks **460**. As shown, the client system **405** may access the Internet **465** through the host system **410**.

[**0050**] Examples of each element within the communication system of **FIG. 4** are broadly described above with respect to **FIGS. 1-3**. In particular, the client system **405** and the communications link **415** typically have attributes comparable to those described with respect to client systems **105**, **205**, and **305** and communications links **115**, **215**, and **315** of **FIGS. 1-3**. Likewise, the host system **410** of **FIG. 4** may have attributes comparable to, and illustrates one possible implementation of, the host systems **110**, **210** and **310**, shown in **FIGS. 1-3**, respectively. However, **FIG. 4** describes an aspect of the host system **410**, focusing primarily on one particular implementation of IM host complex **490**. For purposes of communicating with the IM host complex **490**, the delivery network **460** is generally a telephone network.

[**0051**] The client system **405** includes a client device **420** and a client controller **425**. The client controller **425** is generally capable of establishing a connection to the host system **410**, including the OSP host complex **480**, the IM host complex **490** and/or the Internet **465**. In one implementation, the client controller **425** includes an IM application for communicating with servers in the IM host complex **490** using exclusive IM protocols. The client controller **425** also may include applications, such as an OSP client application and/or an Internet browser application for communicating with the OSP host complex **480** and the Internet **465**, respectively.

[**0052**] The host system **410** includes a host device **435** and a host controller **440**. The host controller **440** is generally capable of transmitting instructions to any or all of the elements of the host device **435**. For example, in one implementation, the host controller **440** includes one or more software applications loaded on one or more elements of the host device **435**. However, in other implementations, as described above, the host controller **440** may include any of several other programs, machines, and devices operating independently or collectively to control the host device **435**.

[**0053**] The host system **410** includes a login server **470** capable of enabling communications with and authorizing access by client systems **405** to various elements of the host system **410**, including an OSP host complex **480** and an IM host complex **490**. The login server **470** may implement one or more authorization procedures to enable simultaneous access to the OSP host complex **480** and the IM host complex **490**. The OSP host complex **480** and the IM host complex **490** are connected through one or more OSP host complex gateways **485** and one or more IM host complex gateways **495**. Each OSP host complex gateway **485** and IM host complex gateway **495** may perform any protocol conversions necessary to enable communication between the OSP host complex **480**, the IM host complex **490**, and the Internet **465**.

[**0054**] To access the IM host complex **490** to begin an instant messaging session, the client system **405** establishes a connection to the login server **470**. The login server **470** typically determines whether the particular subscriber is authorized to access the IM host complex **490** by verifying a subscriber identification and password.

[**0055**] Once a connection to the IM server **4902** has been established, the client system **405** may directly or indirectly transmit data to and access content from the IM server **4902** and one or more associated domain servers **4904**. The IM server **4902** supports the fundamental instant messaging services, and the domain servers **4904** may support associated services, such as, for example, administrative matters, directory services, chat and interest groups. In general, the purpose of the domain servers **4904** is to lighten the load placed on the IM server **4902** by assuming responsibility for some of the services within the IM host complex **490**. By accessing the IM server **4902** and/or the domain server **4904**, a subscriber can use the IM client application to view whether other subscribers of particular importance to the subscriber ("buddies") are online. A subscriber may elect to exchange instant messages with other subscribers, participate in group chat rooms, trade files such as pictures, video files, audio files, invitations or documents, find other subscribers with similar interests, get customized news and stock quotes, and search the Web. The subscriber may elect to engage in textual, audio, graphical, or video communications with other subscribers. However, certain communications with other subscribers may require that relatively large amounts of data be transferred between the subscribers (e.g., real-time audio- or video-conferencing, the exchange

of large audio, video, or graphical, or image files). So that such relatively large amounts of data can be transferred between the subscribers without a delay time that is frustratingly long for the subscribers, such data-intensive communications may be practical or desirable for subscribers only when they are connected to the host system **410** by a broadband or accelerated communications link **415**. Thus, as described in further detail below with reference to **FIG. 6B**, the host system **410** may provide subscribers with information about the data transfer rate of the communications links **415** used by the subscriber's buddies to connect to the host system **410**. The subscriber can then decide with which buddies to initiate data-intensive communications, such as, for example, video conferencing, the transfer of large audio, video, or graphics files.

[**0056**] In the implementation of **FIG. 4**, the IM server **4902** is directly or indirectly connected to a routing gateway **4906**. The routing gateway **4906** facilitates the connection between the IM server **4902** and one or more alert multiplexors **4908**, for example, by serving as a link minimization tool or hub to connect several IM servers to several alert multiplexors. In general, an alert multiplexor **4908** maintains a record of alerts and subscribers registered to receive the alerts.

[**0057**] Once the client system **405** is connected to the alert multiplexor **4908**, a subscriber can register for and/or receive one or more types of alerts. The connection pathway between the client system **405** and the alert multiplexor **4908** is determined by employing another hashing technique at the IM server **4902** to identify the particular alert multiplexor **4908** to be used for the subscriber's session. Once the particular multiplexor **4908** has been identified, the IM server **4902** provides the client system **405** with the IP address of the particular alert multiplexor **4908** and gives the client system **405** an encrypted key (i.e., a cookie). The client system **405** then uses the IP address to connect to the particular alert multiplexor **4908** through the communication link **415** and obtains access to the alert multiplexor **4908** using the encrypted key.

[**0058**] The alert multiplexor **4908** is connected to an alert gate **4910** that, like the IM host complex gateway **495**, is capable of performing the necessary protocol conversions to form a bridge to the OSP host complex **480**. The alert gate **4910** is the interface between the IM host complex **490** and the physical servers, such as servers in the OSP host complex **480**, where state changes are occurring. In general, the information regarding state changes will be gathered and used by the IM host complex **490**. However, the alert multiplexor **4908** also may communicate with the OSP host complex **480** through the IM gateway **495**, for example, to provide the servers and subscribers of the OSP host complex **480** with certain information gathered from the alert gate **4910**.

[**0059**] The alert gate **4910** can detect an alert feed corresponding to a particular type of alert. The alert gate **4910** may include a piece of code (alert receive code) capable of interacting with another piece of code (alert broadcast code) on the physical server where a state change occurs. In general, the alert receive code installed on the alert gate **4910** instructs the alert broadcast code installed on the physical server to send an alert feed to the alert gate **4910** upon the occurrence of a particular state change. Upon detecting an alert feed, the alert gate **4910** contacts the alert multiplexor **4908**, which in turn, informs the client system **405** of the detected alert feed.

[**0060**] In the implementation of **FIG. 4**, the IM host complex **490** also includes a subscriber profile server **4912** connected to a database **4914** for storing subscriber profile data. The subscriber profile server **4912** may be used to enter, retrieve, edit, manipulate, or otherwise process subscriber profile data. In one implementation, a subscriber's profile data includes, for example, the subscriber's list of buddies, alert preferences, designated stocks, identified interests, and geographic location. Each buddy in the subscriber's list of buddies ("buddy list") is uniquely identified from all other subscribers (e.g., by an alphanumeric character string, which maybe known as a "screen name"). The subscriber may enter, edit and/or delete profile data using an installed IM client application on the client system **405** to interact with the subscriber profile server **4912**. The other subscribers in a subscriber's buddy list generally are selected by or for the user because they have a particular significance or importance to the subscriber. For example, the subscriber may correspond frequently with buddies in the subscriber's buddy list.

[**0061**] Because the subscriber's data is stored in the IM host complex **490**, the subscriber does not have to reenter or update the data in the event that the subscriber accesses the IM host complex **490** using a new or different client system **405**. Accordingly, when a subscriber accesses the IM host complex **490**, the IM server **4902** can instruct the subscriber profile server **4912** to retrieve the subscriber's profile data from the database **4914** and to provide, for example, the subscriber's buddy list to the IM server **4902** and the subscriber's alert preferences to the alert multiplexor **4908**. The subscriber profile server **4912** also may communicate with other servers in the OSP host complex **490** to share subscriber profile data with other services. Alternatively, user profile data may be saved locally on the client device **405**.

[**0062**] Referring to **FIG. 5**, a communications system **500** is capable of delivering and exchanging information between a client system **505** and a host system **510** through a communication link **515**. Client system **505** typically includes one or more client devices **520** and one or more client controllers **525** for controlling the client devices **520**. Host system **510** typically includes one or more host devices **535** and one or more host controllers **540** for controlling the host devices **535**. The communication link may include communication pathways **550** and **555** that enable communications through the one or more delivery networks **560**. The network **560** may be any known or described delivery network including, but not limited to, a telephone network and/or the Internet.

[**0063**] Examples of each element within the communication system of **FIG. 5** are broadly described above with respect to **FIGS. 1-4**. In particular, the client system **505** and the communications link **515** typically have attributes comparable to those described with respect to client systems **105**, **205**, **305**, and **405** and communications links **115**, **215**, **315**, and **415** of **FIGS. 1-4**. Likewise, the host system **510** of **FIG. 5** may have attributes comparable to and illustrates one possible embodiment of the host systems **110**, **210**, **310**, and **410** shown in **FIGS. 1-4**, respectively. However, **FIG. 5**

describes an aspect of the host system **510**, focusing primarily on one particular implementation of the host device **535**.

[**0064**] The client system **505** includes a client device **520** and a client controller **525**. The client controller **525** is generally capable of establishing a connection to the host system **510** through the delivery network **515**. In one implementation, the client controller **525** includes one or more applications, such as an IM application, an OSP application, and/or an Internet browser application.

[**0065**] The host system **510** includes a host device **535** and a host controller **540**. The host controller **540** is generally capable of transmitting instructions to any or all of the elements of the host device **535**. For example, in one implementation, the host controller **540** includes one or more software applications loaded on one or more elements of the host device **535**. However, in other implementations, as described above, the host controller **540** may include any of several other programs, machines, and devices operating independently or collectively to control the host device **535**.

[**0066**] The host device **535** includes a mail gateway **5350** having a send mail server **5352** and a read mail server **5354**. The send mail server **5352** is configured to perform functions relating to transmitting electronic data. The read mail server **5354** is configured to perform functions relating to receiving and accessing electronic data. The mail gateway **5350** is in communication with one or more processing servers **5360**.

[**0067**] The mail gateway **5350** also is in communication with the storage area **5370** that includes electronic content and attachment database storage. The storage area **5370** includes a system of folders that store electronic data for subscribers of the host system **510**.

[**0068**] The host device **535** includes an IM host complex **5390**. The IM server **5390** typically has attributes comparable to some or all elements of IM host complexes **390490** of **FIGS. 3 and 4**. The IM host complex **5390** includes an e-buddy server **5392** in communication with the client system **505**, the read mail server **5352**, a look-up server **5394**, and an IM server **5396**. The IM server **5396** is capable of supporting instant messaging services, the look-up server **5394** is capable of finding subscriber account information (e.g., screen name) from a given e-mail address, and the e-buddy server is **5392** is capable of configuring IM communication between the intended recipient of an e-mail message and the sender and/or other recipients of the e-mail message.

[**0069**] **FIG. 6** illustrates one particular scenario in which the OSP host complex **380** and the IM host complex **390** communicate through one or more OSP host complex gateways **385** and one or more IM host complex gateways **395**. In particular, **FIG. 6** illustrates one example of a user interface ("UI") **600** that may be presented to a user. In general, the UI **600** is rendered on the user's client system **105** using software stored on the client system. The software for rendering the UI **600** may be downloaded from the host system **110**.

[**0070**] As shown, the UI includes a window **601** that displays a list (a "buddy list") **602** identifying one or more of the user's buddies, for example, by the screen name **604** of the buddy. A user may add buddies to his buddy list because they are particularly important to the user (e.g., the user may frequently communicate with a buddy by email, instant messaging, chat, telephone, or other methods). Buddies also can be specially selected for the user (e.g., by a supervisor of the user), because the buddies are deemed to be particularly important to the user (e.g., it is predicted that a user will communicate frequently with a buddy because the user and the buddy have been assigned to work together on a project).

[**0071**] Several different communications between a user and a buddy are possible through the UI **600**. For example, a user can initiate an IM dialog with a buddy by selecting the buddy's screen name **604** from the buddy list **602** (e.g., by clicking or otherwise selecting the screen name with a mouse). Selecting the buddy's name establishes a connection from the user's client system **505** through the IM server **5902** and/or the domain name server **5904** to the buddy's client system **505**, so that the user and the buddy can, for example, exchange instant messages, participate in group chat rooms.

[**0072**] A user may also exchange email with a buddy through the UI **600**. For example, a user may scroll over the screen name of a buddy and right click or otherwise select on the buddy's screen name to open an application to send email to the buddy. To use UI **600**, which lists the user's buddies by screen name, to send email to a buddy's email addresses (or to receive email from one or more of those addresses), a mapping between the screen name and the email address occurs.

[**0073**] For example, referring to **FIG. 7**, such a process **700** begins when the application running UI **600** receives one or more screen names in a user's buddy list and passes the screen names to the application that stores the user's email address book (step **702**). Within the address book, a correspondence between a screen name and an email address is then sought (step **704**). For example, a correspondence may be found between a buddy's screen name of "Andy" and the email address andy@aol.com. Such a correspondence may be made automatically by software, or the user may be prompted to confirm a suggested correspondence between a screen name and an email address. Databases in addition to an email address book may also be consulted when searching for a correspondence between a buddy's screen name and email address. For example, an electronic Rolodex™ or a database of contacts that stores information about a buddy including the buddy's name, address, telephone numbers, screen name, and email addresses may be consulted to find one or more email addresses that correspond to a user's screen name. Once the email addresses corresponding to the buddies screen names are located, the mappings between screen names and email addresses are returned to the buddy list application and to the UI **600** (step **706**). The application running the UI **600** communicates the email addresses to the user's email client and requests to be notified by the email client when a new email is sent to or received from any of the email addresses (step **708**). Then, whenever the email client sends or receives an email, it notifies the application running the UI **600** of this fact, such that the UI **600** is updated to present an appropriate mail icon next to the name of the buddy to whom or from whom mail has been sent (step **710**).

[**0074**] Referring again to **FIG. 6**, when the application running the UI **600** receives a notification that an email

message has been received from a buddy, a mail icon **606** is displayed in the window **601** next to the buddy's screen name **604** to indicate that email has been received from the buddy. The mail icon can be, for example, an image of the back (return address) side of an envelope. When the user scrolls over the mail icon **606** with a mouse, information about the email received from the buddy (e.g., the number of unread emails received from the buddy, the date and time the email was send and the subject of the email) is displayed to the user. Similarly, when mail is sent to the buddy, the icon may be an image of the front (recipient's address) side of an envelope. The mail icon **606** can be displayed until all mail received from the buddy and all mail sent to the buddy has been read.

[**0075**] Referring to **FIG. 8**, when the user moves the cursor over a mail icon **606** associated with the screen name **604** of a buddy in the UI **600**, information about the buddy and the mail sent by the buddy is displayed by one or more supplemental interfaces **802** (e.g., a window or dialog, a tooltip, or a fly-out panel known as a quick access panel ("QAP")). Such information may include the buddy's real name, telephone number, whether the buddy is online and how many unread messages the user has received from the buddy. By double clicking on (or otherwise selecting) the mail icon **606**, the user can open or activate an email application UI **804** listing all emails received from and/or sent to the buddy associated with the mail icon **606**. When the email application UI **804** is activated, it can automatically display the oldest unread message sent from the buddy to the user in a window **806**.

[**0076**] Referring again to **FIG. 6**, a user may communicate by telephone with a buddy through the UI **600**. For example, a user may scroll over the screen name of a buddy and right click or otherwise select the buddy's screen name to open an application to dial a phone number associated with the buddy. To use UI **600**, which lists the user's buddies by screen name, to telephone a buddy, a mapping between the screen name and the phone number occurs.

[**0077**] For example, referring to **FIG. 9**, such a process **900** begins when the application running UI **600** receives the screen names in a user's buddy list and passes the list of screen names to a database application that stores the contact information for the user's buddies (step **902**). The database application creates a correspondence between a buddy's screen name and one or more phone numbers associated with the buddy (step **904**). Such a correspondence may be made automatically by software, or the user may be prompted to confirm a suggested correspondence between a screen name and one or more phone numbers of the buddy. Once the phone number(s) corresponding to the buddies' screen names are located, the mappings between screen names and phone number(s) are returned to the buddy list application and to the UI **600** (step **906**). The software running the UI **600** then communicates the phone number(s) to the user's telephone software, and requests to be notified by the telephone software when a voicemail is received from any of the phone numbers (step **908**). Then, whenever a phone call or voicemail is received from one of the listed phone numbers, the telephone software notifies UI **600** of this fact, and UI **600** presents a new telephone call icon next to the name of the buddy from whom the voicemail has been received (step **910**).

[**0078**] Referring again to **FIG. 6**, when the UI **600** receives a notification that a phone call or a voicemail has been received from a buddy, a telephone icon **608** may be displayed in the window **601** next to the buddy's screen name **604** to indicate that a phone call or voicemail has been received from the buddy. The telephone icon can be, for example, an image of a telephone. Alternatively, when the UI **600** receives a notification that a phone call has been received from a buddy, an email icon **606** may be displayed in the window **601** next to the buddy's screen name **604** to indicate that a phone call has been received from the buddy. When the user scrolls over the telephone icon **608** or the email icon **606** with a mouse, information about the telephone calls received from the buddy is displayed to the user (e.g., the number of phone calls received from the buddy, the date and time at which the phone calls were received, whether voicemail messages were left by the buddy, and how many voicemail messages were left by the buddy). By double clicking or otherwise selecting the telephone icon **608**, the user can open an audio streaming application to play a recording of the voicemail message(s) left by the buddy or a text reading application to read a transcription of, or other information about, the voicemail message(s). Similarly, by double clicking, or otherwise selecting, the email icon **606**, the user can open an email application for information about the call, including, for example, the name of the caller, the phone number from which the call originated, the time of the call, and a transcript of the call.

[**0079**] Alternatively, or additionally, a telephone icon **608** can be used to indicate that a buddy is currently accessing the host system **110** through a mobile computing device, such as, for example, a mobile phone or a mobile PDA. When the user scrolls over or otherwise selects the alternative or additional telephone icon **608**, appropriate information about the buddy is displayed to the user. For example, information about the buddy's telephone number or location can be displayed to the user when scrolling over the icon **608**. If telephone icon **608** were used to indicate that a buddy is connected to the host system **110** through a mobile computing device, then the appearance of email icon **606** would take on different images to indicate that the user had received an email message or a telephone message from the buddy.

[**0080**] As an alternative to the client-side voicemail notification process described above, the voicemail notification process may be implemented on the host side of the communications system **100**. For example, a first user can subscribe to a voicemail service provided by the host, and the first user's address book can include a second user's screen name and phone number. The second user can record a voicemail message for the first user on the host system. The host system then notifies the first user of the voicemail message by sending the first user an email message with a subject line containing information about the call (e.g., the name and phone number of the caller and the time of the call) and a sound recording of the voicemail message as an attachment to the body of the email message. When the email message arrives at the mail client on the host system, the mail client parses the subject line for the phone number of the caller and passes the phone number to the address book of the first user. The address seeks a matching phone number among its records, and if a match exists, the address book application notifies the instant messaging application and instructs the UI **600** to place an email icon **606** and or

a phone icon **608** next to the second user's screen name in the UI **600**. When the first user selects the email icon **606** or the phone icon **608**, an email application is activated to display the email message about the voice mail to the first user.

[**0081**] A user and/or a buddy may schedule calendar events for each other through the UI **600**. For example, a user may scroll over the screen name of a buddy and right click or otherwise selecting the buddy's screen name to open a calendar scheduling application to schedule a calendar event (e.g., a meeting) for the buddy. To use UI **600**, which lists the user's buddies by screen name, to schedule a calendar event for the buddy, a mapping between the buddy's screen name and buddy's name occurs. This mapping is similar to the mapping between the buddy's screen name and email address described above with reference to **FIG. 7** and to the mapping between the buddy's screen name and telephone numbers described above with reference to **FIG. 9**. This mapping is accomplished though automatic or semi-automatic communications between the software running the UI **600** and the software running a common calendar accessible to both the user and the user's buddies. Then, whenever a calendar event involving the user and the buddy is scheduled, the calendar software notifies the UI **600** of this fact.

[**0082**] When the UI **600** receives a notification that a calendar event has been proposed or scheduled between the user and a buddy, a calendar icon **610** is displayed in the window **601** next to the screen name **612** of the buddy with whom the calendar event has been proposed or scheduled. The calendar icon **610** can be, for example, an image of a calendar page. The presence of the calendar icon **610** can indicate that the user has been invited to participate in a calendar event (e.g., a meeting or a teleconference), and the user can accept or decline the invitation. When the user scrolls over the calendar icon **610** with a mouse, information about the calendar events related to the buddy is displayed to the user (e.g., the number of calendar events concerning the buddy, the date and time of a calendar event, who scheduled the calendar event, and who has confirmed attendance at the calendar event). By double clicking or otherwise selecting the calendar icon **610** the user can open a common calendar application, with which to view calendar events concerning the user and the buddy. Within the common calendar application, the user can accept or decline the invitation to participate in the proposed or scheduled calendar event.

[**0083**] Alternatively, or additionally, calendar icon **610** can be used to indicate the existence of pending calendar events that have been scheduled between the user and a buddy. For example, when the user has accepted a calendar event or scheduled a calendar event for himself with a buddy, calendar icon **610** can be displayed next to the buddy's username. One or more distinct calendar icons **610** can be displayed next to a buddy's username whenever the user has a calendar event pending with the buddy, when a calendar event is scheduled within a certain time period, only when a time-proximate calendar event is scheduled (e.g., on the day the user views the UI **600**), or using another criterion.

[**0084**] The window **601** that displays the buddy list **602** can group the buddies in categories according to how they are known to the user (e.g., "Family and Friends,""Top 10 Buddies,""Co-Workers," and "Offline" buddies). A tally of the total number of buddies in a category and the number of on-line buddies can be kept next to a heading identifying the category. For example, in the category of "Family and Friends"**620**, a tally **622** identifies that three of the **23** total buddies in the category are currently on-line. The screen name of buddy may also identify whether the buddy is on-line of off-line. For example, the screen name of buddy listed in normal italic weight font **604** indicates that the buddy is on-line, whereas the screen name of buddy listed in light weight font **630** indicates that the buddy is off-line.

[**0085**] When the user moves the cursor over the screen name **604** of a buddy, information about the buddy is displayed by one or more supplemental interfaces, such as, for example, a window or dialog, a tooltip, or a QAP, similar to the supplemental interface shown in **FIG. 8**. The supplemental information for displaying information about the buddy may include information that the user has collected about the buddy, information reflecting the user's past relationship with the selected buddy, and status information reflecting aspects of the user's current and future relationship with the buddy. The information collected about the buddy may include the buddy's full name, phone numbers, screen name, and other data about the buddy extracted from the user's address book. If the user's address book does not have an address book entry for the buddy, the supplemental interface provides a way to add one. The status information about the buddy may include various views of email messages received from the buddy (e.g., unread messages, all received messages, or total mail count), calendar events, alerts, on-line presence state, chat presence, buddy icons, and links to additional buddy information).

[**0086**] Referring to **FIG. 10**, UI **600** may indicate to the subscriber that one or more of the user's buddies are connected to the host system **110** through a broadband, high-speed data connection. That a buddy is connected to the host system **110** by a broadband connection may be indicated by displaying the particular buddy's name in a distinctive font. For example, the screen names **1004***a* of buddies connected through a broadband connection (e.g., "ANDY,""DONALD," and "ERIC," as indicated in **FIG. 10**) may be displayed in all capital letters, or in a particular color, while the screen names **1004***b* of buddies not connected through a broadband connection (e.g., "Crystel-,""Bob,""Michael,""Scott," and "Sheila," as indicated in **FIG. 10**) may be displayed in lowercase letters of in a different color than the broadband-connected buddies. Additionally or alternatively, a distinctive icon **1072** indicating that a buddy is connected through a broadband connection may be displayed in close proximity to the buddy's screen name **1004***a*.

[**0087**] More generally, such indications of the buddies' connection type may be used to indicate the connection speed or maximum data transfer rate of the buddies. For example, icons **1072**, and distinguishing fonts **1004***a*, **1004***b* for buddy screen names can be used to indicate whether buddies are capable of communicating with the subscriber through data transfers that occurs faster than a particular data transfer rate. The particular data transfer rate may be defined by the subscriber, by the host system **110**, or by the client system **105**. The particular type of communications link **115** used by a buddy to connect to the host system **110**

or the typical or maximum transfer rate of the communication link **115** used by the buddy can be displayed to the subscriber through UI **600**. For example, the subscriber may scroll over (or otherwise select) a buddy's screen name and information about the connection type or connection speed may pop up and be displayed to the subscriber in UI **600**.

[**0088**] Information about the connection type of a subscriber's buddy aids the subscriber in deciding with which buddies to engage in particular communications, or more precisely, which buddies are capable of receiving different types of messages or media. Consequently, the indication of connection type or speed may be useful to a potential sender seeking to determine who shall receive content available to the sender for distribution. In one example, the subscriber may use the information in deciding among buddies with whom to initiate a video conference; the subscriber may choose to initiate the video conference with a broadband-connected buddy but not with a dial-up connected buddy. The subscriber may choose to share large graphics or video files (e.g., a video or a photo album of a family vacation) with a buddy if the subscriber knows that the buddy is connected to the host system **110** through a communications link **115** that is capable of transferring the files at a fast enough rate that will not detract from subscriber's or buddy's experience. Thus, the subscriber may choose to send data to or receive data from a buddy through a particular mode of communication depending on the information about the buddy's connection type, or the subscriber may decide whether to send data to a buddy based on the buddy's connection type.

[**0089**] Whether a buddy is connected to the host system **110** by a communications link **115** that transfers data at a rate above a threshold transfer rate depends, of course, on the communication link **115** used by the buddy and not on the buddy himself. Because the buddy can connect to the host system **110** through a variety of different communication links **115** (e.g., though a T1 line from home, through a dial-up connection from home, or through a low speed wireless connection when using a mobile PDA), the subscriber needs to be appraised of changes in his buddies' connection types.

[**0090**] Referring again to **FIG. 6**, the window **601** of the UI **600** includes a list **602** of the user's buddies, a list of some of the user's favorite places **640**, and a list of the user's favorite things **650**. Some features of the buddy list **602** have been described above.

[**0091**] The favorite places list **640** includes a list of the user's favorite links **642** to other information. Although favorite links **642** commonly are webpage URLs accessible through a browser application, favorite links **642** can be any kind of uniform resource identifier for identifying and retrieving content from a network through any network protocol (e.g. ftp, Gopher, telnet, https). By move the cursor over and clicking or otherwise selecting a link **642**, the user may open a supplemental interface to display the information. The information may be displayed in a traditional web browser but may also be displayed in a window or dialog, a tooltip, or a QAP. Thus, the favorite places list **640** of UI **600** provides a place to store the user's favorite links to additional information within a window **601** that includes the screen names of the user's buddies.

[**0092**] The favorite things list **650** indicates a list of selected resources that the user stores on the host system **110**, such as, for example, text files, image files, audio files, and a calendar of appointments. Referring to **FIG. 11**, to make use of things stored on the host system **110**, the user first uploads a thing from the client system **105** to the host system **110** (step **1102**). The user may upload a thing by using tools within the UI **600**. For example, a user may right click (or otherwise select) the "things" label within window **601** to open a supplemental interface for selecting a thing stored on the client system **105**, and may use the supplemental interface to initiate a transfer of the thing from the client system **105** to the host system **110**.

[**0093**] Once uploaded to the host system **110**, the thing is stored on a storage medium of the host system where it is accessible to the user (step **1104**), and thereafter, the thing **652** is accessible to the user within the favorite things list **640** within window **601** of UI **600**, which makes the thing accessible to the user from any client system **105** with which the user may access the host system **110**.

[**0094**] After a thing is uploaded and stored on the host system, the user can grant access to the thing to one or more of the user's buddies (step **1106**). A user may right click (or otherwise select) the thing **652** as represented in window **601** of UI **600** to open a supplemental interface in which the user can enter the screen names of buddies that are allowed to access the thing **652**. When a user grants a buddy access to a thing **652**, a notification may be sent to the buddy that the user has granted access to the thing (step **1108**). The notification may be presented to the buddy in the form of an icon representing a "new thing" or as an email icon **606** to the right of the user's screen name in the buddy's buddy list. The buddy can then click or otherwise select the new thing icon to open the thing (step **1110**), or the user can click or otherwise select the email icon **606** to open an email containing the new thing as an attachment or containing a link to the new thing. When the user moves a cursor over the thing in the UI **600**, a list of the buddies who have been granted access to the thing can be presented to the user. The list may include a date when the thing was shared with each buddy in the list, may specify the type of access that the user granted to the each buddy, and may specify when the thing was modified and by whom. Similarly, when the user moves a cursor over the screen name **604** of a buddy in the UI **600**, a list of the things that have been shared with the buddy can be presented to the user. The list may include a date when each thing in the list was shared with the buddy and may specify the type of access the buddy was granted to each thing.

[**0095**] The list of buddies with whom a thing has been shared and/or the list of things that have been shared with a buddy can be presented in a supplemental interface.

[**0096**] The user can control the degree of access a buddy has to the thing. For example, the user may grant "read only" access to the thing, permitted the buddy to open and view the thing but not to modify the thing, or the user can grant "modify" access to the thing to permit the buddy to open, modify, and restore the modified version of the thing on the host system **110**. If the buddy makes a modification to the thing **652** and stores it again on the host system **110**, a "new thing" notification is sent to all the buddies that have access to the thing to inform them that the thing has been modified. The host system **110** can store only the updated, modified thing **652**, or can store all versions of modified things, so that

buddies and the original user can track the evolution of a thing. The buddies with access in the list can be shown in the UI **600** in different ways depending on the degree of access they have. For example, buddies with modify access may be shown in bold font, while buddies with read access may be shown in regular font.

[**0097**] The general aspects described above relate to instant messaging and e-mail as well as other forms of communication such as, for example, telephonic communication (e.g., mobile phones, and pagers). Other implementations are within the scope of the following claims.

What is claimed is:

1. A computer-implemented method comprising:

providing a computer service to a user;

displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list;

accessing information about the data transfer rate of at least one of the other users;

establishing a threshold data transfer rate;

comparing the accessed data transfer rate with the threshold data transfer rate; and

displaying a graphic associated with one of the other users in the list classifying on-line communications available to the other listed user based on results of the comparison between the accessed data transfer rate and the threshold data transfer rate.

2. The method of claim 1, wherein the user is a sender of data to the other user and wherein the graphic indicates that the other user is capable of receiving the data through a desired communication mode.

3. The method of claim 1, further comprising displaying the graphic only if the results of the comparison indicate that the accessed data transfer rate exceeds the threshold data transfer rate.

4. The method of claim 1, wherein the computer service includes an instant messaging computer service.

5. The method of claim 1, wherein the graphic is an icon.

6. The method of claim 1, wherein the graphic is a distinctive font.

7. The method of claim 1, wherein the graphic indicates that the other user is connected to the computer service through a broadband communications link.

8. The method of claim 1, wherein the graphic indicates that the other user is connected to the computer service through a link other than an analog communications link.

9. The method of claim 1, wherein the graphic indicates a type of communications link used by the other user to connect to the computer service.

10. The method of claim 1, wherein the graphic indicates a characteristic transfer rate of a communications link used by the other user to connect to the computer service.

11. The method of claim 1, further comprising receiving a command from the user to initiate a particular mode of communication with the other user based on the comparison.

12. A system for displaying a graphical user interface to a user of a computer service, the system comprising:

a memory adapted for storing a threshold data transfer rate; and

a processor adapted for:

providing the computer service to a user;

displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list;

accessing information about the data transfer rate of at least one of the other users;

comparing the accessed data transfer rate with the threshold data transfer rate; and

displaying a graphic associated with one of the other users in the list classifying on-line communications available to the other listed user based on results of the comparison between the accessed data transfer rate and the threshold data transfer rate.

13. The system of claim 12, wherein the user is a sender of data to the other user and wherein the graphic indicates that the other user is capable of receiving the data through a desired communication mode.

14. The system of claim 12, wherein the processor is further adapted for displaying the graphic only if the results of the comparison indicate that the accessed data transfer rate exceeds the threshold data transfer rate.

15. The system of claim 12, wherein the computer service includes an instant messaging computer service.

16. The system of claim 12, wherein the graphic is an icon.

17. The system of claim 12, wherein the graphic is a distinctive font.

18. The system of claim 12, wherein the graphic indicates that the other user is connected to the computer service through a broadband communications link.

19. The system of claim 12, wherein the graphic indicates that the other user is connected to the computer service through a link other than an analog communications link.

20. The system of claim 12, wherein the graphic indicates a type of communications link used by the other user to connect to the computer service.

21. The system of claim 12, wherein the graphic indicates a characteristic transfer rate of a communications link used by the other user to connect to the computer service.

22. The system of claim 12, wherein the processor is further adapted for receiving a command from the user to initiate a particular mode of communication with the other user based on the comparison.

23. A system for displaying a graphical user interface to a user of a computer service, the system comprising:

a means for storing a threshold data transfer rate;

a means for providing the computer service to a user;

a means for displaying to the user of the computer service a list of identifiers for other users of the computer service selected by the user for inclusion in the list;

a means for accessing information about the data transfer rate of at least one of the other users;

a means for comparing the accessed data transfer rate with the threshold data transfer rate; and

a means for displaying a graphic associated with one of the other users in the list classifying on-line communications available to the other listed user based on

results of the comparison between the accessed data transfer rate and the threshold data transfer rate.

24. A graphical user interface provided to a user of a computer service, the graphical user interface comprising:

a list of identifiers for other users of the computer service selected by the user for inclusion in the list; and

an graphic associated with one of the other listed users indicating that the other listed user is capable of on-line communications with the user at a rate that is above a threshold rate.

25. The graphical user interface of claim 24, wherein the user is a sender of data to the other user and wherein the graphic indicates that the other user is capable of receiving the data through a desired communication mode.

26. The graphical user interface of claim 24, wherein the computer service includes an instant messaging computer service and the list reflects presence information for each of the other users selected by the user as significant to the user.

27. The graphical user interface of claim 24, wherein the graphic is an icon.

28. The graphical user interface of claim 24, wherein the graphic is a distinctive font.

29. The graphical user interface of claim 24, wherein the graphic indicates that the other user is connected to the computer service through a broadband communications link.

30. The graphical user interface of claim 24, wherein the graphic indicates that the other user is not connected to the computer service through an analog communications link.

31. The graphical user interface of claim 24, wherein the graphic indicates a type of communications link used by the other user to connect to the computer service.

32. The graphical user interface of claim 24, wherein the graphic indicates a characteristic transfer rate of a communications link used by the other user to connect to the computer service.

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