

# **EXHIBIT F**



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**Wormald et al.**

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(54) **SYSTEM AND METHOD FOR SWITCHING BETWEEN AN INSTANT MESSAGING CONVERSATION AND A GAME IN PROGRESS**

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**G06F 3/00** (2006.01)

(52) **U.S. Cl.**  
USPC ..... **715/751**; 715/733; 715/753; 715/758; 715/767; 715/794; 715/795; 715/796; 463/40; 463/41; 463/42; 709/204; 709/205; 709/206

(58) **Field of Classification Search**  
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See application file for complete search history.

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*Primary Examiner* — Patrick Riegler

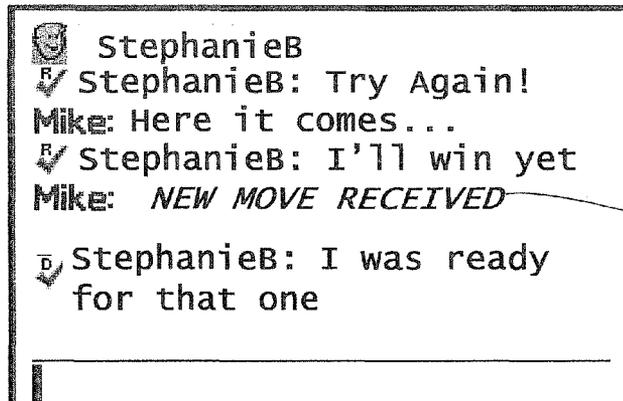
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(57) **ABSTRACT**

A system and method are provided for enabling a game to be played on an electronic device, comprising: enabling a game application on the electronic device to utilize a contact list for an instant messaging application, during a game in progress with a particular contact in the contact list, preparing game messages to be sent to the particular contact by including game progress data, communicating at least one game message during the game in progress with the particular contact using an instant messaging system used by the instant messaging application; displaying at least one instant message in an instant messaging conversation user interface; and displaying a game in progress user interface associated with the game play, after detecting a selection in the instant messaging conversation user interface to switch to the game in progress.

**24 Claims, 10 Drawing Sheets**

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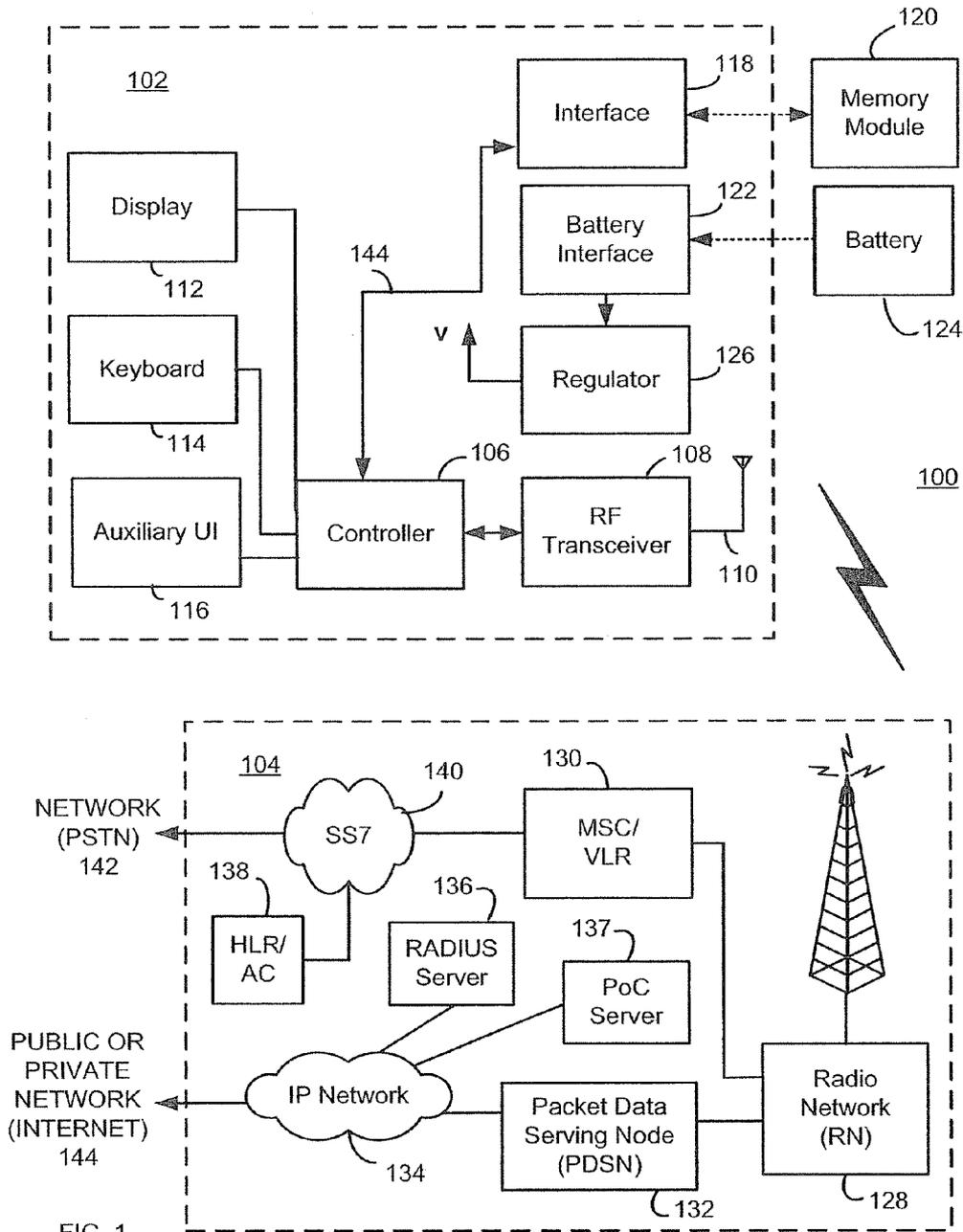
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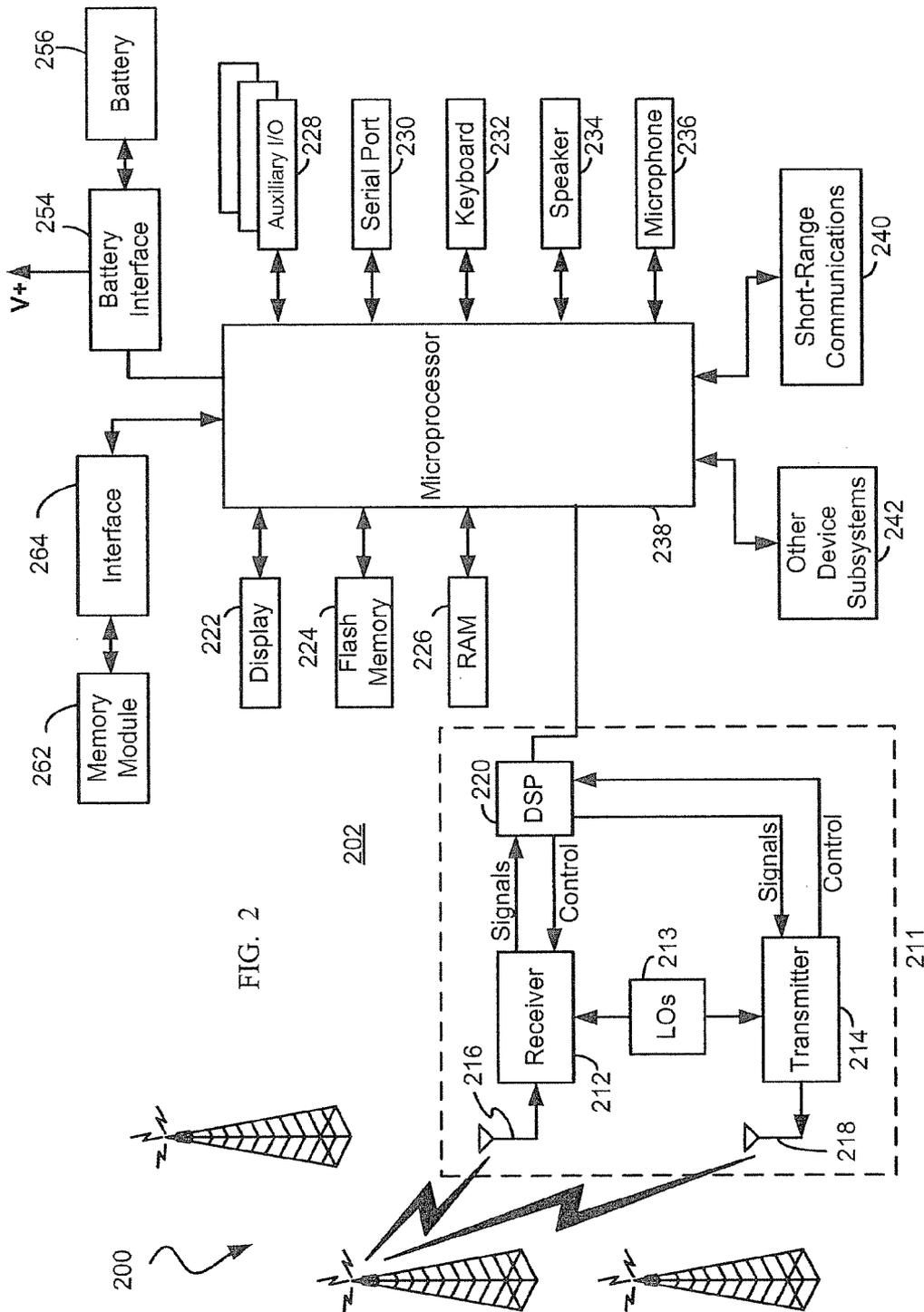


FIG. 2

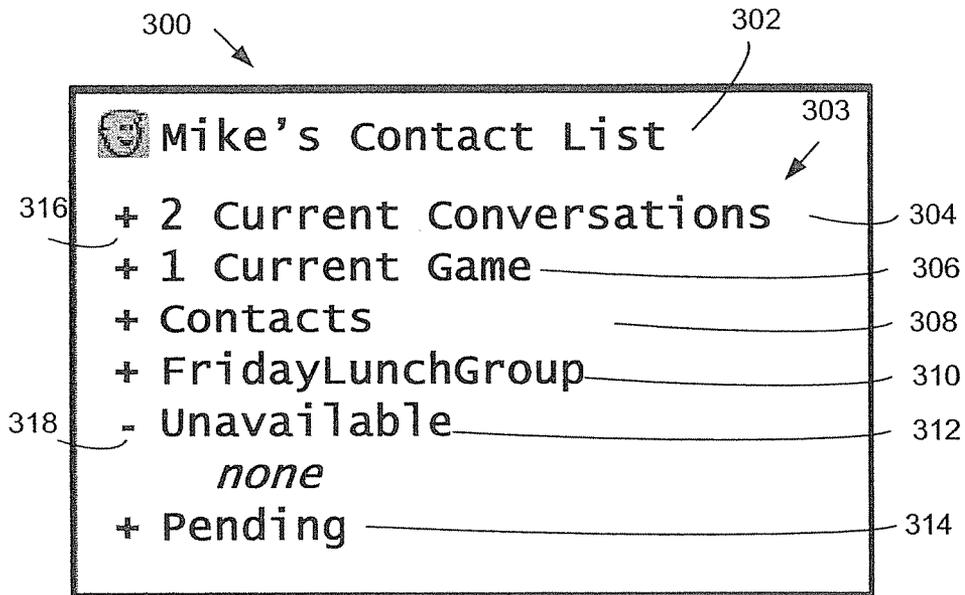


FIG. 3

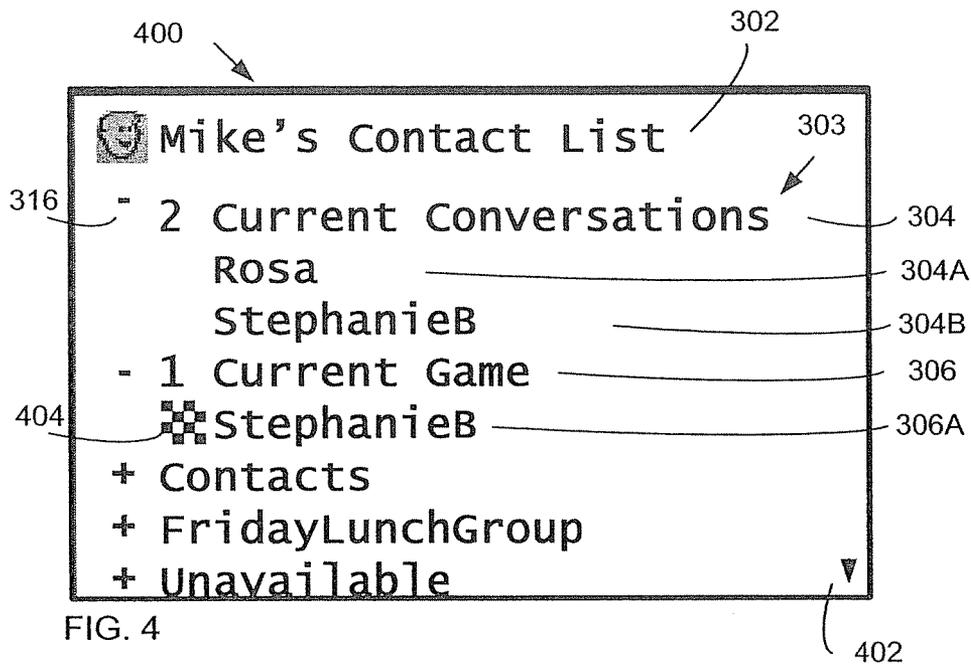
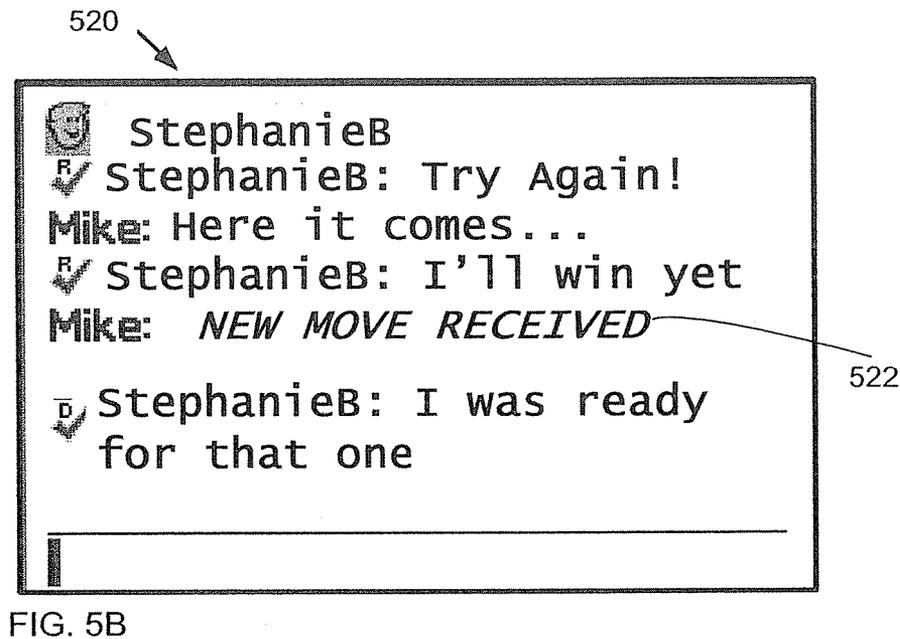
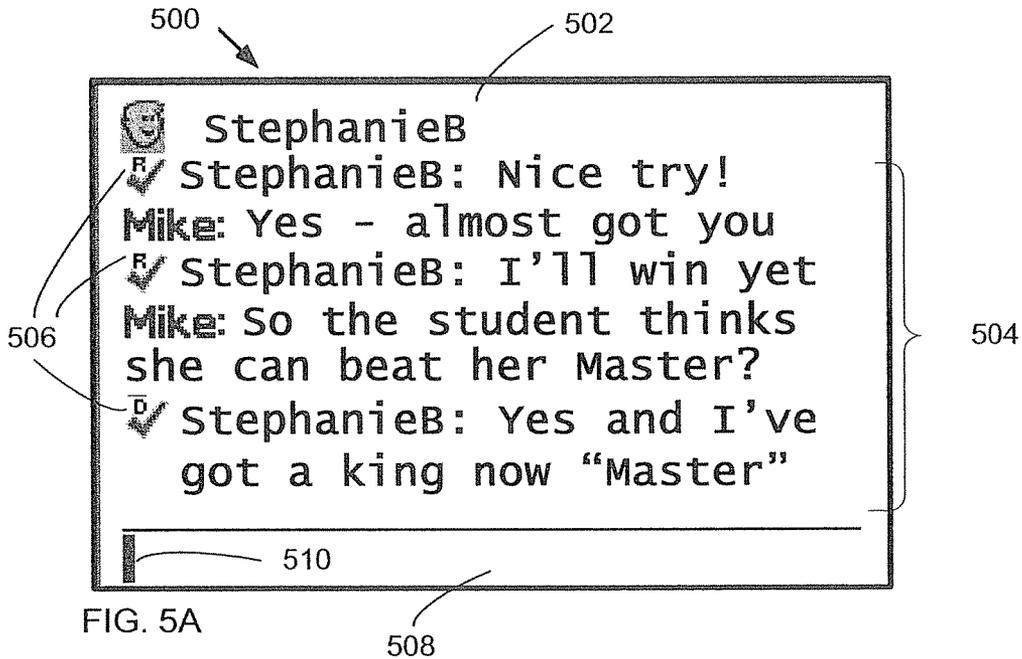


FIG. 4



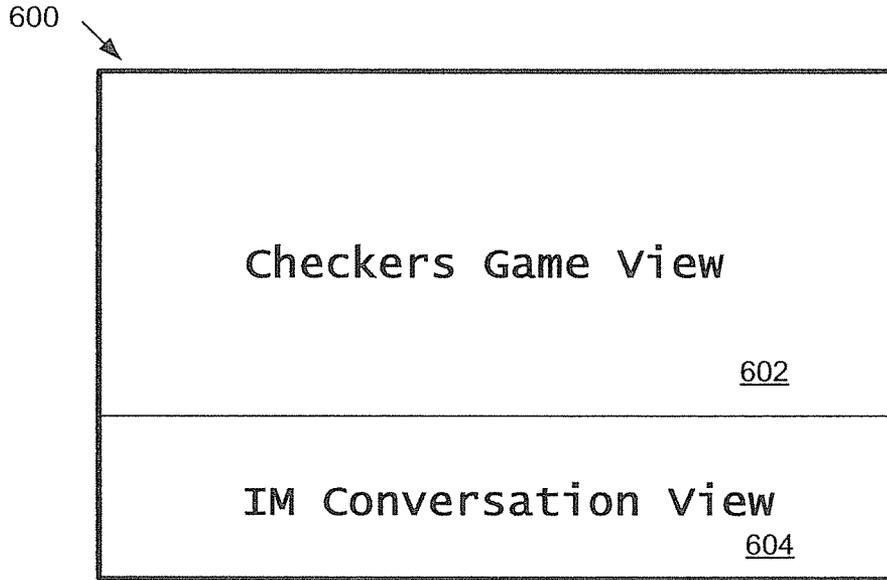


FIG. 6A

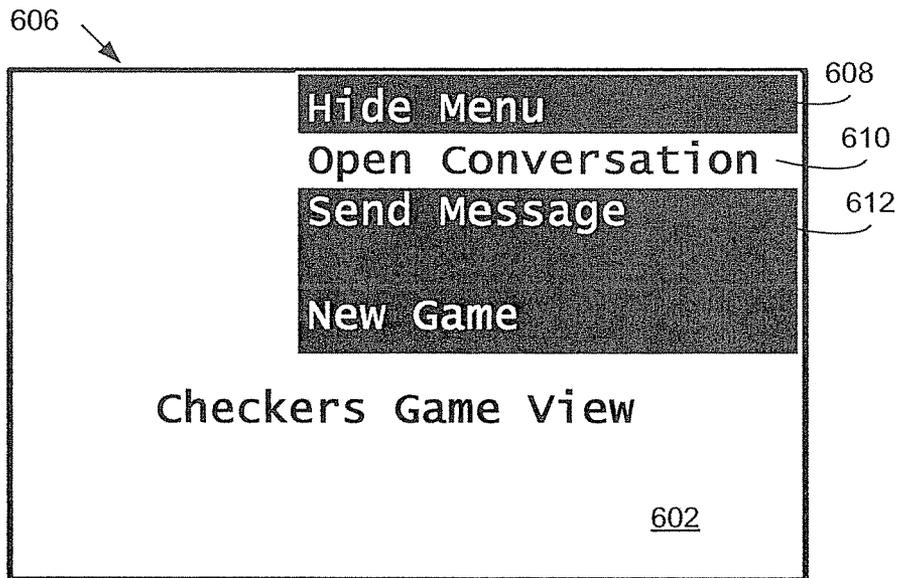


FIG. 6B

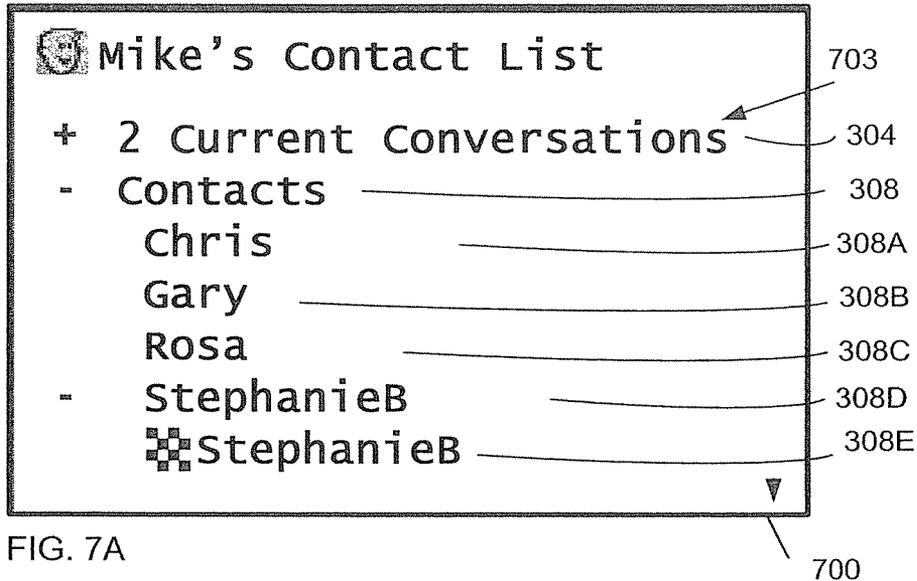


FIG. 7A

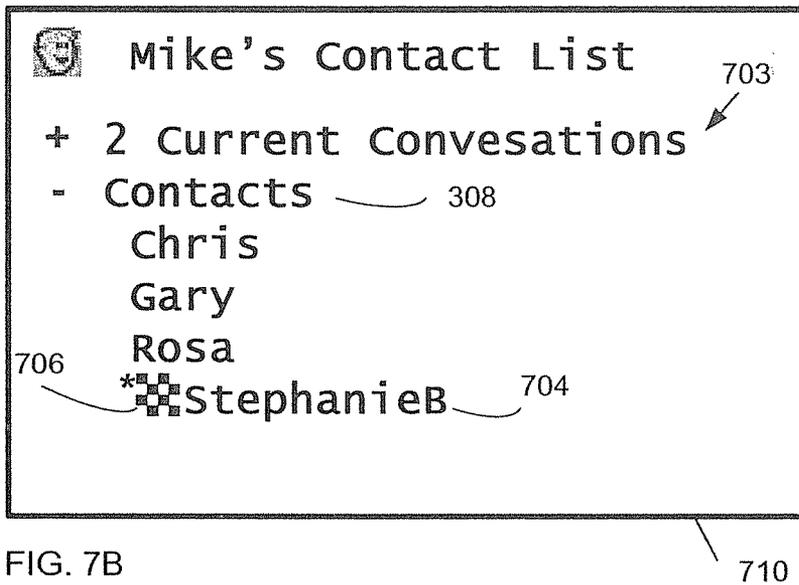


FIG. 7B



FIG. 8A 800

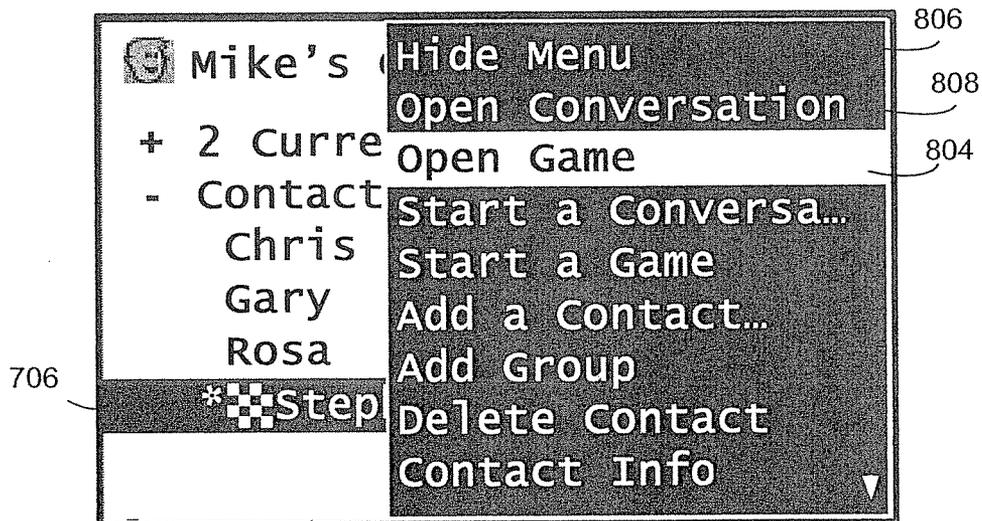
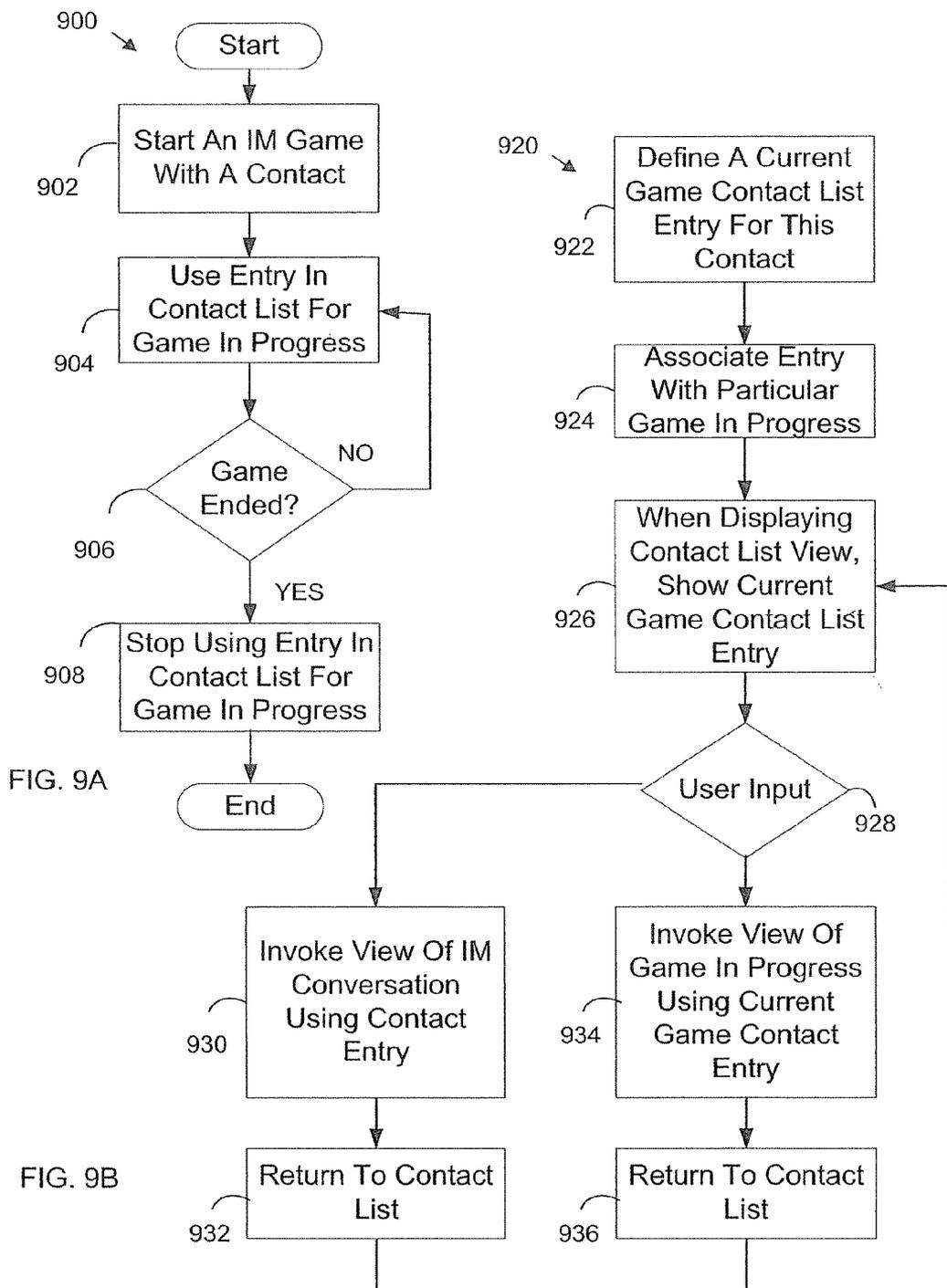
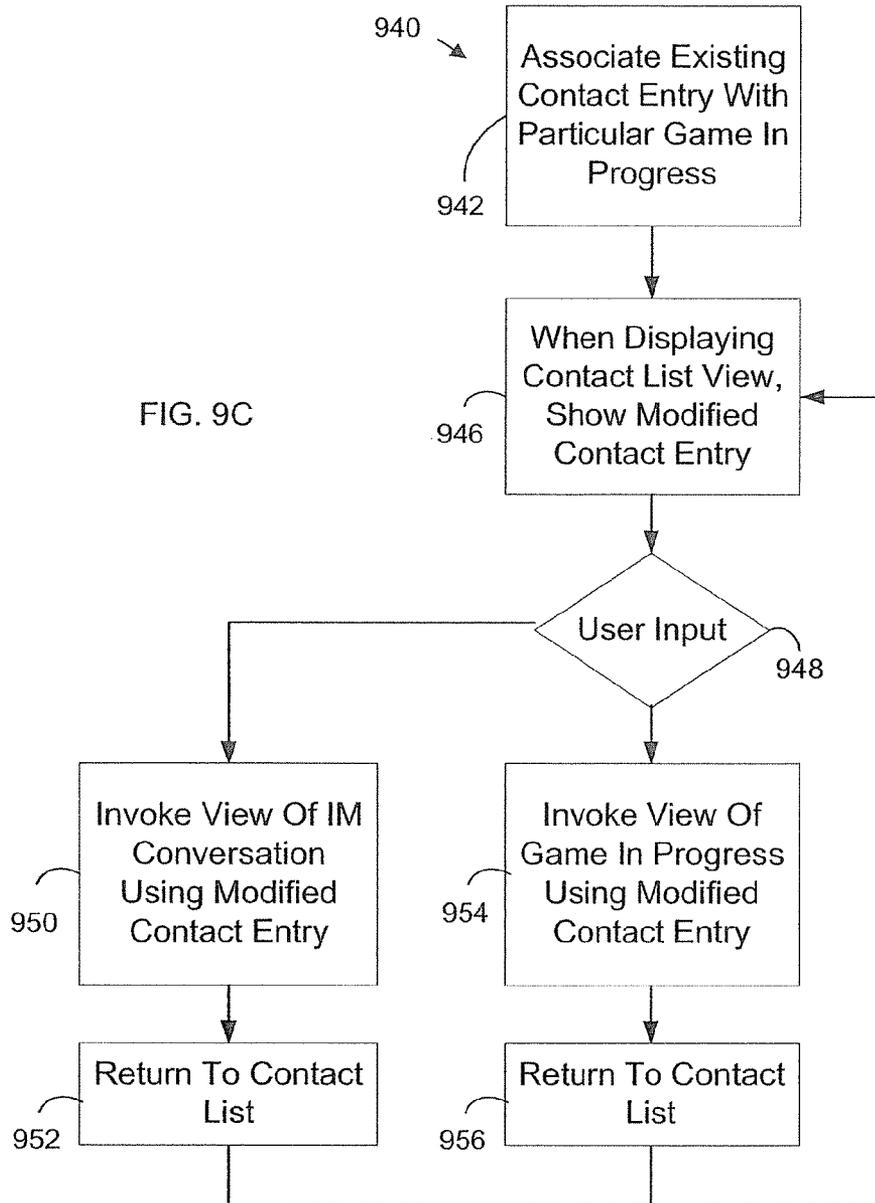


FIG. 8B 810





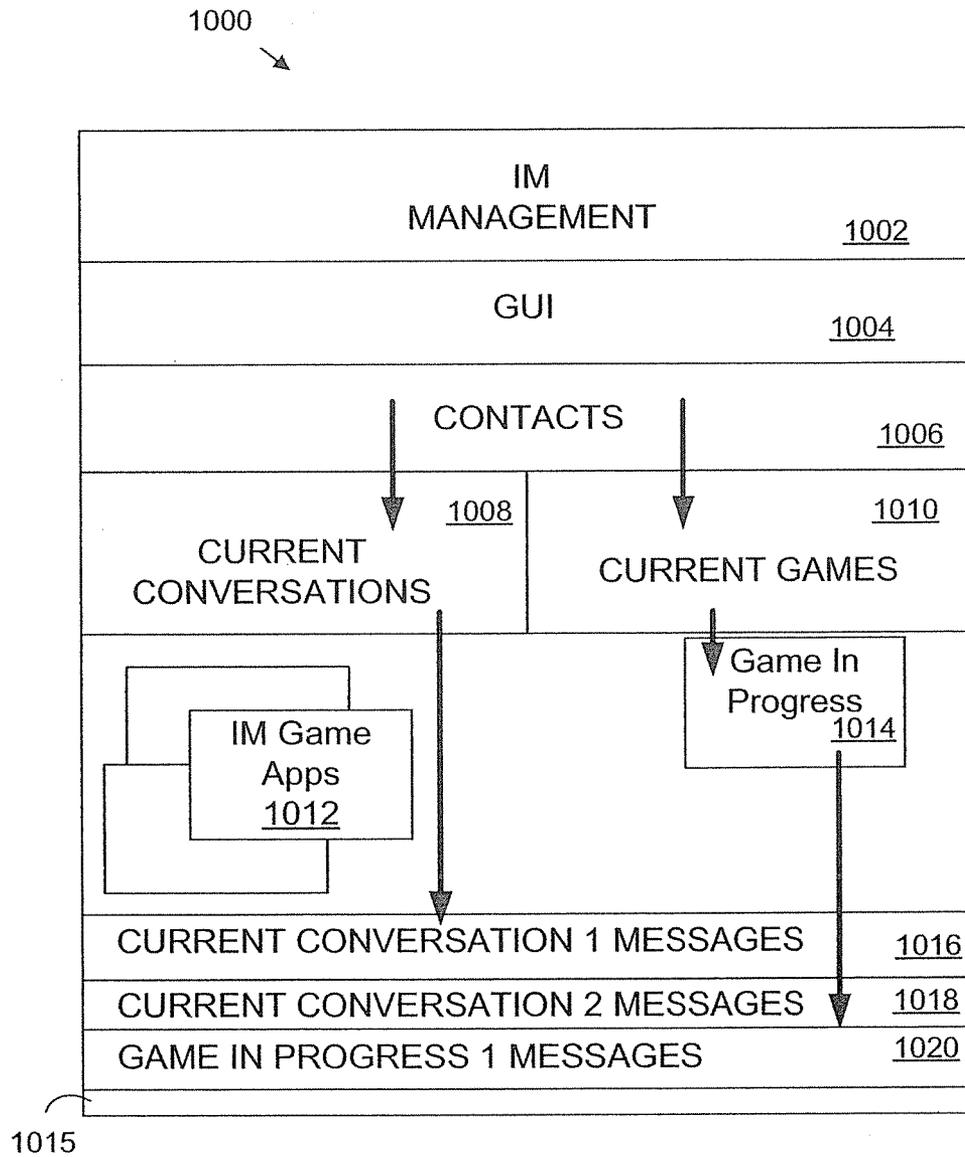


FIG. 10

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**SYSTEM AND METHOD FOR SWITCHING  
BETWEEN AN INSTANT MESSAGING  
CONVERSATION AND A GAME IN  
PROGRESS**

CROSS-REFERENCE TO RELATED  
APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 11/537,047 filed on Sep. 29, 2006, now U.S. Pat. No. 7,861,175, hereby incorporated by reference.

FIELD OF THE INVENTION

The present application relates to a user interface for a messaging application and more particularly for a method and apparatus for using an IM contact list entry as a game in progress designate.

BACKGROUND OF THE INVENTION

Communication devices such as personal computers, wireless mobile telephones, personal data assistants, etc. often provide data communication abilities to users. One currently popular form of such communication is Instant Messaging (IM) facilitated by an application having a graphical user interface (GUI) whereby two or more users of different communication devices can engage in a conversational data communication exchange.

To permit IM message exchanges, a user may invite another to agree to receive IM messages and be included in the user's list of IM contacts (sometimes called an IM friend or buddy in view of the agreement to be a potential IM message recipient). The availability of the user or particular contacts for conversations may be maintained in accordance with respective presence information. To begin an IM conversation, a user selects a buddy represented by a contact list entry of a list of contacts and inputs a message. Additional contacts may be invited to engage in a group message, as desired. While IM messaging was originally directed to text, newer protocols support file transports and voice over data communications.

In addition to conducting conversations, an IM user may invite a buddy to engage in an on-line game where two (or more) players take turns during game play to compete against each other. Conventional board and card games such as checkers or poker may be adapted for IM game playing for example, among others. A game may be invoked via a game application interface or from within an IM application providing an interface to a game application.

A user may play more than one game at a time or play a game in a non-linear manner, leaving a game interface to perform other tasks such as email, calendar review, etc. Thus it is desirable to provide an interface to games in progress.

A solution to one or more of these needs is therefore desired.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the subject matter may be readily understood, embodiments are illustrated by way of examples in the accompanying drawings, in which:

FIG. 1 is a block diagram which illustrates pertinent components of an example wireless communication network and a mobile station which communicates within this network;

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FIG. 2 is a more detailed diagram of the mobile station which may communicate within the wireless communication network;

FIGS. 3 and 4 are representative GUI display views of an embodiment of an IM application showing an IM contact list entry to designate a game in progress;

FIGS. 5A and 5B are representative GUI display views of embodiments of an IM application showing an IM conversation between game players for an IM application adapted to use an IM contact list entry to designate a game in progress;

FIGS. 6A and 6B are representative GUI display views of embodiments of an IM game application showing IM conversation interfaces;

FIGS. 7A and 7B are representative GUI display views of further embodiments of an IM application adapted to use an IM contact list entry to designate a game in progress;

FIGS. 8A and 8B are representative GUI display views, in accordance with the respective embodiments of FIGS. 7A and 7B, showing menu interfaces;

FIGS. 9A to 9C are flow charts showing operations for using an IM contact list entry to designate a game in progress in a IM application in accordance with various embodiments; and

FIG. 10 is a block diagram of a portion of memory showing components of an IM application using an IM contact list entry to designate a game in progress in accordance with an embodiment.

DETAILED DESCRIPTION

Persons of ordinary skill in the art will appreciate that teachings herein are applicable to messages received via wired or wireless communication and though a wireless communication device and network including wireless communication capabilities are discussed in the examples, no limitations should be imposed. There is provided a method and apparatus for using a contact list entry of an IM contact list interface to designate an IM game in progress to facilitate switching between an IM conversation and an IM game.

FIG. 1 is a block diagram of a communication system 100 which includes a mobile station 102 which communicates through a wireless communication network 104. Mobile station 102 preferably includes a visual display 112, a keyboard 114, and perhaps one or more auxiliary user interfaces (UI) 116, each of which is coupled to a controller 106. Controller 106 is also coupled to radio frequency (RF) transceiver circuitry 108 and an antenna 110.

Typically, controller 106 is embodied as a central processing unit (CPU) which runs operating system software in a memory component (not shown). Controller 106 will normally control overall operation of mobile station 102, whereas signal processing operations associated with communication functions are typically performed in RF transceiver circuitry 108. Controller 106 interfaces with device display 112 to display received information, stored information, user inputs, and the like. Keyboard 114, which may be a telephone type keypad or full alphanumeric keyboard, is normally provided for entering data for storage in mobile station 102, information for transmission to network 104, a telephone number to place a telephone call, commands to be executed on mobile station 102, and possibly other or different user inputs.

Mobile station 102 sends communication signals to and receives communication signals from network 104 over a wireless link via antenna 110. RF transceiver circuitry 108 performs functions similar to those of a radio network (RN) 128, including for example modulation/demodulation and

possibly encoding/decoding and encryption/decryption. It is also contemplated that RF transceiver circuitry **108** may perform certain functions in addition to those performed by RN **128**. It will be apparent to those skilled in art that RF transceiver circuitry **108** will be adapted to particular wireless network or networks in which mobile station **102** is intended to operate.

Mobile station **102** includes a battery interface **122** for receiving one or more rechargeable batteries **124**. Battery **124** provides electrical power to electrical circuitry in mobile station **102**, and battery interface **122** provides for a mechanical and electrical connection for battery **124**. Battery interface **122** is coupled to a regulator **126** which regulates power to the device. When mobile station **102** is fully operational, an RF transmitter of RF transceiver circuitry **108** is typically turned on only when it is sending to network, and is otherwise turned off to conserve resources. Similarly, an RF receiver of RF transceiver circuitry **108** is typically periodically turned off to conserve power until it is needed to receive signals or information (if at all) during designated time periods.

Mobile station **102** operates using a memory module **120**, such as a Subscriber Identity Module (SIM) or a Removable User Identity Module (R-UIM), which is connected to or inserted in mobile station **102** at an interface **118**. As an alternative to a SIM or an R-UIM, mobile station **102** may operate based on configuration data programmed by a service provider into an internal memory which is a non-volatile memory. Mobile station **102** may consist of a single unit, such as a data communication device, a cellular telephone, a multiple-function communication device with data and voice communication capabilities, a personal digital assistant (PDA) enabled for wireless communication, or a computer incorporating an internal modem. Alternatively, mobile station **102** may be a multiple-module unit comprising a plurality of separate components, including but in no way limited to a computer or other device connected to a wireless modem. In particular, for example, in the mobile station block diagram of FIG. 1, RF transceiver circuitry **108** and antenna **110** may be implemented as a radio modem unit that may be inserted into a port on a laptop computer. In this case, the laptop computer would include display **112**, keyboard **114**, and one or more auxiliary UIs **116**, and controller **106** may remain within the radio modem unit that communicates with the computer's CPU or be embodied as the computer's CPU. It is also contemplated that a computer or other equipment not normally capable of wireless communication may be adapted to connect to and effectively assume control of RF transceiver circuitry **108** and antenna **110** of a single-unit device such as one of those described above. Such a mobile station **102** may have a more particular implementation as described later in relation to mobile station **202** of FIG. 2.

Mobile station **102** communicates in and through wireless communication network **104**. In the embodiment of FIG. 1, wireless network **104** is a Third Generation (3G) supported network based on Code Division Multiple Access (CDMA) technologies. In particular, wireless network **104** is a CDMA2000 network which includes fixed network components coupled as shown in FIG. 1. Wireless network **104** of the CDMA2000-type includes a Radio Network (RN) **128**, a Mobile Switching Center (MSC) **130**, a Signaling System 7 (SS7) network **140**, a Home Location Register/Authentication Center (HLR/AC) **138**, a Packet Data Serving Node (PDSN) **132**, an IP network **134**, and a Remote Authentication Dial-In User Service (RADIUS) server **136**. SS7 network **140** is communicatively coupled to a network **142** (such as a Public Switched Telephone Network or PSTN), whereas IP network is communicatively coupled to a network **144** (such

as the Internet). Persons of ordinary skill in the art will appreciate that other networks and associated topologies including GPRS, E-GPRS and UMTS radio networks, among many others, may be employed with the teachings herein.

During operation, mobile station **102** communicates with RN **128** which performs functions such as call-setup, call processing, and mobility management. RN **128** includes a plurality of base station transceiver systems that provide wireless network coverage for a particular coverage area commonly referred to as a "cell". A given base station transceiver system of RN **128**, such as the one shown in FIG. 1, transmits communication signals to and receives communication signals from mobile stations within its cell. The base station transceiver system normally performs such functions as modulation and possibly encoding and/or encryption of signals to be transmitted to the mobile station in accordance with particular, usually predetermined, communication protocols and parameters, under control of its controller. The base station transceiver system similarly demodulates and possibly decodes and decrypts, if necessary, any communication signals received from mobile station **102** within its cell. Communication protocols and parameters may vary between different networks. For example, one network may employ a different modulation scheme and operate at different frequencies than other networks. The underlying services may also differ based on its particular protocol revision.

The wireless link shown in communication system **100** of FIG. 1 represents one or more different channels, typically different radio frequency (RF) channels, and associated protocols used between wireless network **104** and mobile station **102**. An RF channel is a limited resource that must be conserved, typically due to limits in overall bandwidth and a limited battery power of mobile station **102**. Those skilled in art will appreciate that a wireless network in actual practice may include hundreds of cells depending upon desired overall expanse of network coverage. All pertinent components may be connected by multiple switches and routers (not shown), controlled by multiple network controllers.

For all mobile stations **102** registered with a network operator, permanent data (such as mobile station **102** user's profile) as well as temporary data (such as mobile station's **102** current location) are stored in a HLR/AC **138**. In case of a voice call to mobile station **102**, HLR/AC **138** is queried to determine the current location of mobile station **102**. A Visitor Location Register (VLR) of MSC **130** is responsible for a group of location areas and stores the data of those mobile stations that are currently in its area of responsibility. This includes parts of the permanent mobile station data that have been transmitted from HLR/AC **138** to the VLR for faster access. However, the VLR of MSC **130** may also assign and store local data, such as temporary identifications. Mobile station **102** is also authenticated on system access by HLR/AC **138**. In order to provide packet data services to mobile station **102** in a CDMA2000-based network, RN **128** communicates with PDSN **132**. PDSN **132** provides access to the Internet **144** (or intranets, Wireless Application Protocol (WAP) servers, etc.) through IP network **134**. PDSN **132** also provides foreign agent (FA) functionality in mobile IP networks as well as packet transport for virtual private networking. PDSN **132** has a range of IP addresses and performs IP address management, session maintenance, and optional caching. RADIUS server **136** is responsible for performing functions related to authentication, authorization, and accounting (AAA) of packet data services, and may be referred to as an AAA server.

Wireless communication network **104** also includes a Push-to-talk over Cellular (PoC) server **137** which may be

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coupled to IP network 134. PoC server 137 operates to facilitate PoC individual and group communication sessions between mobile stations within network 104. A conventional PoC communication session involves a session connection between end users of mobile stations, referred to as session “participants”, who communicate one at a time in a half-duplex manner much like conventional walkie-talkies or two-way radios.

Those skilled in art will appreciate that wireless network 104 may be connected to other systems, possibly including other networks, not explicitly shown in FIG. 1. A network will normally be transmitting at very least some sort of paging and system information on an ongoing basis, even if there is no actual packet data exchanged. Although the network consists of many parts, these parts all work together to result in certain behaviours at the wireless link.

FIG. 2 is a detailed block diagram of a preferred mobile station 202. Mobile station 202 is preferably a two-way communication device having at least voice and advanced data communication capabilities, including the capability to communicate with other computer systems. Depending on the functionality provided by mobile station 202, it may be referred to as a data messaging device, a two-way pager, a cellular telephone with data messaging capabilities, a wireless Internet appliance, or a data communication device (with or without telephony capabilities). Mobile station 202 may communicate with any one of a plurality of base station transceiver systems 200 within its geographic coverage area.

Mobile station 202 will normally incorporate a communication subsystem 211, which includes a receiver 212, a transmitter 214, and associated components, such as one or more (preferably embedded or internal) antenna elements 216 and 218, local oscillators (LOs) 213, and a processing module such as a digital signal processor (DSP) 220. Communication subsystem 211 is analogous to RF transceiver circuitry 108 and antenna 110 shown in FIG. 1. As will be apparent to those skilled in field of communications, particular design of communication subsystem 211 depends on the communication network in which mobile station 202 is intended to operate.

Mobile station 202 may send and receive communication signals over the network after required network registration or activation procedures have been completed. Signals received by antenna 216 through the network are input to receiver 212, which may perform such common receiver functions as signal amplification, frequency down conversion, filtering, channel selection, and like, and in example shown in FIG. 2, analog-to-digital (A/D) conversion. A/D conversion of a received signal allows more complex communication functions such as demodulation and decoding to be performed in DSP 220. In a similar manner, signals to be transmitted are processed, including modulation and encoding, for example, by DSP 220. These DSP-processed signals are input to transmitter 214 for digital-to-analog (D/A) conversion, frequency up conversion, filtering, amplification and transmission over communication network via antenna 218. DSP 220 not only processes communication signals, but also provides for receiver and transmitter control. For example, the gains applied to communication signals in receiver 212 and transmitter 214 may be adaptively controlled through automatic gain control algorithms implemented in DSP 220.

Network access is associated with a subscriber or user of mobile station 202, and therefore mobile station 202 requires a memory module 262, such as a Subscriber Identity Module or “SIM” card or a Removable User Identity Module (R-UIM), to be inserted in or connected to an interface 264 of mobile station 202 in order to operate in the network. Alternatively, memory module 262 may be a non-volatile memory

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which is programmed with configuration data by a service provider so that mobile station 202 may operate in the network. Since mobile station 202 is a mobile battery-powered device, it also includes a battery interface 254 for receiving one or more rechargeable batteries 256. Such a battery 256 provides electrical power to most if not all electrical circuitry in mobile station 202, and battery interface 254 provides for a mechanical and electrical connection for it. The battery interface 254 is coupled to a regulator (not shown in FIG. 2) which provides power V+ to all of the circuitry.

Mobile station 202 includes a microprocessor 238 (which is one implementation of controller 106 of FIG. 1) which controls overall operation of mobile station 202. This control includes network selection techniques of the present application. Communication functions, including at least data and voice communications, are performed through communication subsystem 211. Microprocessor 238 also interacts with additional device subsystems such as a display 222, a flash memory 224, a random access memory (RAM) 226, auxiliary input/output (I/O) subsystems 228, a serial port 230, a keyboard 232, a speaker 234, a microphone 236, a short-range communications subsystem 240, and any other device subsystems generally designated at 242. Some of the subsystems shown in FIG. 2 perform communication-related functions, whereas other subsystems may provide “resident” or on-device functions. Notably, some subsystems, such as keyboard 232 and display 222, for example, may be used for both communication-related functions, such as entering a text message for transmission over a communication network, and device-resident functions such as a calculator or task list. Operating system software used by microprocessor 238 is preferably stored in a persistent store such as flash memory 224, which may alternatively be a read-only memory (ROM) or similar storage element (not shown). Those skilled in the art will appreciate that the operating system, specific device applications, or parts thereof, may be temporarily loaded into a volatile store such as RAM 226.

Microprocessor 238, in addition to its operating system functions, preferably enables execution of software applications on mobile station 202. A predetermined set of applications which control basic device operations, including at least data and voice communication applications, will normally be installed on mobile station 202 during its manufacture. A preferred application that may be loaded onto mobile station 202 may be a personal information manager (PIM) application having the ability to organize and manage data items relating to user such as, but not limited to, e-mail, calendar events, voice mails, appointments, and task items. Naturally, one or more memory stores are available on mobile station 202 and SIM 262 to facilitate storage of PIM data items and other information.

The PIM application preferably has the ability to send and receive data items via the wireless network. In a preferred embodiment, PIM data items are seamlessly integrated, synchronized, and updated via the wireless network, with the mobile station user’s corresponding data items stored and/or associated with a host computer system thereby creating a mirrored host computer on mobile station 202 with respect to such items. This is especially advantageous where the host computer system is the mobile station user’s office computer system. Additional applications may also be loaded onto mobile station 202 through network, an auxiliary I/O subsystem 228, serial port 230, short-range communications subsystem 240, or any other suitable subsystem 242, and installed by a user in RAM 226 or preferably a non-volatile store (not shown) for execution by microprocessor 238. Such flexibility in application installation increases the functional-

ity of mobile station 202 and may provide enhanced on-device functions, communication-related functions, or both. For example, secure communication applications may enable electronic commerce functions and other such financial transactions to be performed using mobile station 202.

In a data communication mode, a received signal such as a text message, an e-mail message, or web page download will be processed by communication subsystem 211 and input to microprocessor 238. Microprocessor 238 will preferably further process the signal for output to display 222 or alternatively to auxiliary I/O device 228. A user of mobile station 202 may also compose data items, such as e-mail messages, for example, using keyboard 232 in conjunction with display 222 and possibly auxiliary I/O device 228. Keyboard 232 is preferably a complete alphanumeric keyboard and/or telephone-type keypad. These composed items may be transmitted over a communication network through communication subsystem 211.

For voice communications, the overall operation of mobile station 202 is substantially similar, except that the received signals would be output to speaker 234 and signals for transmission would be generated by microphone 236. Alternative voice or audio I/O subsystems, such as a voice message recording subsystem, may also be implemented on mobile station 202. Although voice or audio signal output is preferably accomplished primarily through speaker 234, display 222 may also be used to provide an indication of the identity of a calling party, duration of a voice call, or other voice call related information, as some examples.

Serial port 230 in FIG. 2 is normally implemented in a personal digital assistant (PDA)-type communication device for which synchronization with a user's desktop computer is a desirable, albeit optional, component. Serial port 230 enables a user to set preferences through an external device or software application and extends the capabilities of mobile station 202 by providing for information or software downloads to mobile station 202 other than through a wireless communication network. The alternate download path may, for example, be used to load an encryption key onto mobile station 202 through a direct and thus reliable and trusted connection to thereby provide secure device communication.

Short-range communications subsystem 240 of FIG. 2 is an additional optional component which provides for communication between mobile station 202 and different systems or devices, which need not necessarily be similar devices. For example, subsystem 240 may include an infrared device and associated circuits and components, or a Bluetooth™ communication module to provide for communication with similarly-enabled systems and devices. Bluetooth™ is a registered trademark of Bluetooth SIG, Inc.

Mobile station 202 may be adapted to provide instant messaging (IM) communications via programming instructions and data stored or otherwise available to the device 202. Instant messaging provides a conversational dialog typically involving the exchange of text messages between a user of device 202 and at least one other user of another device (not shown) adapted for IM communication. As persons of ordinary skill in the art will appreciate, an IM system or "presence and instant messaging system" allows users to subscribe to each other and be notified of changes in state (e.g. availability for instant message communication) and for users to send each other short instant messages. IM is discussed in further detail in "RFC 2778—A Model for Presence and Instant Messaging", maintained by the Internet Society and available at <http://www.faqs.org/rfcs/rfc2778.html>. As such, adapted mobile station 202 provides a user agent for IM communication in an IM system.

FIG. 10 illustrates components 1000, typically comprising instructions and data that may be stored to flash memory 224 and/or RAM 226, for adapting station 202. Components 1000 comprise, broadly, IM management 1002, graphical user interface (GUI) 1004, contacts list 1006, contact list entries for current conversations 1008, contact list entries for current games 1010, IM game applications 1012, a game in progress 1014 and an IM Messages buffer 1015 comprising messages for current conversation 1 and 2 (1016 and 1018) and game in progress 1020. IM management component 1002 provides presence and IM communication functions for the user (e.g. a user having the name "Mike") of the mobile station 202. IM Messages may be communicated for text-based conversations with buddies or for other uses such as IM game applications 1012.

GUI 1004 provides support for a contact list-oriented interface for controlling aspects of the presence and IM functions using list of contacts 1006. Additional contact list entries include entries for current conversations 1006 and current games (i.e. a designate for a game in progress (1014) with another contact). Other contact list entries may include group entries for organizing individual contacts, and pending or unavailable contacts in accordance with presence information (not shown in FIG. 10).

IM Game applications 1012 provide specific turn-based game play for the user and one or more contacts. Some may be played alone against a notional user such as a computer. Game applications may be implemented in the Java™ language and receive support from a Java-oriented operating system on device 202. A particular game in progress may be represented by associated game-in-progress data 1014 for the game and associated game-in-progress messages 1020. An IM game application (e.g. one of 1012) may include a manner to invoke the application, initiating a GUI for the game and any necessary data, etc. for beginning a game. Game playing may be conducted and paused, as desired, such as by exiting the GUI for the game in favor of another GUI such as the GUI 1004. Game-in-progress data 1014 may be maintained to resume the game upon a re-invocation of the GUI for the game. Persons of ordinary skill in the art will appreciate that some game applications may support only one game in progress at any one time (i.e. not support multiple instances of game play of the same game). However, some may permit two or more games in progress.

In accordance with the present matter, a contact list entry may be defined to designate a game in progress. As such, the entry may be used by GUI 1004 to switch to GUI for a game application 1012 using game-in-progress data 1014 or to switch contexts such as from a IM message conversation context to a game in progress.

As will be understood to those of ordinary skill in the art, it is sometimes difficult to make bright-line distinctions between components such as, IM management and GUI components 1002 and 1004 or game-in-progress data 1014, gap application 1012 and game-in-progress messages 1020. As well, it is understood that the components 1000 interface with other components (not shown) on or for mobile station 202 such as operating system, communication sub-system, PIM components, etc.

FIG. 3 illustrates a representative view 300 of an IM screen provided by a GUI 1004 for an IM application 1002. The view 300 includes a title portion 302 showing "Mike's Contact List" and presents a contact list 303 interface comprising list entries, in particular, contact-list entries for current conversations 304, current games 306, individual contacts 308, a group of contacts 310, unavailable contacts 312 and pending contacts 314. It will be understood that view 300 provides a

hierarchical list in a form which permits expansion and contraction of list items via elements 316 (“+”) and 318 (“-”). Contacts may comprise individual user contacts 308 or group contacts 310 (e.g. FridayLunchGroup) for assisting with the organization of contacts within the IM application. Contacts may also be grouped by presence information. Contact group 312 comprises a list of those contacts which are presently unavailable for IM communications, while group 314 shows a list of those contacts who are pending the resolution of an invitation to join Mike’s list of contacts in accordance with the subscription aspects of IM.

View 300 of Mike’s Contacts may be traversed by a user by moving a focus about the view to interact with various elements of the GUI such as the expansion elements or individual items of the list. The focus may be indicated in various ways such as by reverse video mode, etc. Traversal or other navigation may be facilitated by input devices such as arrow keys, trackwheel, trackball, pointing device, etc. Once a particular element is selected by a user of the mobile station 202, particular command options may be invoked. Options may be presented via one or more menus or invoked through pre-defined keystrokes etc. common in the art.

FIG. 3 shows entry 304 of contact list 303 for designating current conversations that the user is conducting. In the present example, there are two current conversations with contacts “Rosa” and “StephanieB” shown in FIG. 4. In accordance with this embodiment, there is also shown contact list entry 306 for designating current games in progress that the user is conducting with a contact. In the present example, there is one current game in progress with contact “StephanieB” shown in FIG. 4.

FIG. 4 illustrates a representative IM view 400 of contact list 303 in which the entries current conversations 304 and current games 306 are expanded to show individual list elements 304A-304B and 306A respectively for designating specific current conversations or games in progress. Navigational element 402 indicates that additional contact list entries or items appear off screen below. The entries in the contact list 303 may be navigated such as by moving the focus up and down the screen (not shown). Appropriate entries may be expanded or collapsed. Specific contacts may be selected and invoked to initiate an associated GUI.

Current conversation 304A designates a conversation with the contact “Rosa” while 304B designates a conversation with the contact “StephanieB”. These respective contact-list elements 304A and 304B may be selected and activated (whether by a menu interface or by clicking an enter key for example) to invoke a view (e.g. 500 of FIG. 5) of GUI 1004 for conducting a conversation.

Current game list element 306A designates a current game in progress with a contact, namely “StephanieB”, one of the contacts with whom the user is also in a current conversation. A person of ordinary skill in the art will appreciate that in many instances it will not be necessary or desired to have a current conversation and a game in progress active simultaneously with the same contact. A IM game may be conducted without conducting an associated IM text-based conversation with the contact.

This respective contact-list element 306A may be selected and activated (whether by a menu interface or by clicking an enter key for example) to invoke a view (e.g. 600 of FIG. 6) of a GUI for the respective IM game application 1012 for conducting the game in progress 1014.

View 400 further comprises an optional graphic element 404 for providing a visual metaphor for the game in progress, in this case a game of checkers.

FIG. 5A illustrates a representative IM view 500 of a current conversation with contact “StephanieB” and comprises a title portion 502 for indicating the contact and a message-history portion 504 for showing an exchange of messages and optional delivery and reply status 506 for the messages. A message-composition portion 508 with a cursor 510 is also provided with which to compose IM messages to the contact.

FIG. 5B illustrates a second representative IM view 520 of a current conversation interface with contact “StephanieB”. As a new move is received from the contact in the associated game in progress, a notification of the new move 522 is presented in the conversation screen (e.g. portion 504) in a manner similar to how a new message is presented. The user may then select and open or switch (not shown) to the game in progress from the conversation interface 520.

FIG. 6A shows a representative view 600 for a checkers game. In the present embodiment, a portion 602 of view 600 provides an IM game application interface to the game in progress, for example, visualizing the results of the game moves. Optionally, view 600 may comprise a portion 604 providing an interface to an IM conversation between the players. The portion 604 may be provided by IM GUI 1004. The portion 604 may comprise a field for entering IM messages, viewing IM messages (e.g. in a short list) or both. Alternatively (not shown), rather than dividing view 600 into distinct parts, IM conversation view portion 604 may be rendered over top of view 600 (e.g. to display new messages of an associated IM conversation for a limited period of time over game view 602).

FIG. 6B illustrates a view 606 of a menu invocation manner for invoking a switch to an IM GUI to conduct a conversation with or send a message to an opposing player (or players). In the embodiment of view 606, an IM Conversation View portion 604 is not provided. A focus may be moved in menu 608 to select a command such as 610 to switch to a conversation screen (e.g. FIG. 5) or 612 to invoke a message input interface (not shown).

FIG. 7A shows a view 700 illustrating a further embodiment of a contact-list 703 for presenting contact list elements as designates of games in progress. In the present embodiment, a separate contact list element for grouping contacts for games currently in progress (e.g. element 306) is not provided. Rather, contacts designating games in progress are presented in the user’s contacts element 308. Thus contact list 703 interface shows contacts element 308 expanded to present representative contacts 308A-308E. Similarly to contact element 306A of FIG. 4, contact element 308E of FIG. 7 designates a current game in progress with a contact, namely “StephanieB”. This respective contact-list element 308E may be selected and activated (whether by a menu interface or by clicking an enter key for example) to invoke a view (e.g. 600 of FIG. 6) of a GUI for the respective IM game application 1012 for conducting the game in progress 1014. It is noted that aspects of the embodiment of FIG. 3 and FIG. 4 and the embodiment of FIG. 7 may be implemented such that a contact element designating a game in progress may be defined for presentation in a separate group of such contacts (element 306) and in the group of contacts (308) or otherwise (not shown), such as individually within the contact list.

FIG. 7B illustrates a view 710 of contact list 703 depicting contacts 308 in an embodiment where a single individual contact element (e.g. 704) may represent a contact element for both IM conversation and IM game purposes rather than use separate elements (e.g. 308D and 308E of FIG. 7A). To indicate that an new or unread move exists in the associated game, graphical element 404 is amended (706). Other manners of indicating new moves may be employed such as by

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displaying a graphical element in title portion **302** or display contact **308** with the additional description “unread move”, etc. Such an indication of new moves may also be used with the embodiment of FIG. 3-5.

FIG. 8A illustrates a view **800** of a menu invocation manner for invoking a switch to a game GUI from the contact list GUI **1004** using the contact list of FIG. 7A as an example. A focus may be moved to a contact designating a game such as **308E** and a menu **802** invoked to select a menu option **804** to open the game in progress **1014** (i.e. view **600**) designated by the contact-list element **308E**. FIG. 8B illustrates a view **810** of a menu invocation manner for invoking a switch to a game GUI from the contact list GUI **1004** using the contact list of FIG. 7B as an example. A focus may be moved to a contact designating a game and conversation such as **704** and a menu **806** invoked to select a menu option **804** to open the game in progress **1014** (i.e. view **600**) designated by the contact-list element **704** or a menu option **806** to open the conversation in progress associated with the contact-list element **704**, among other choices.

Other menu options (not shown) may include “open conversation” such as when a selected contact has an associated current conversation.

FIGS. 9A and 9B illustrate operations **900** and **920** of IM management **1002** for using an IM contact element as a designate for a game in progress, for example, to enable a convenient interface to switch between an IM conversation and an IM game.

Operations **900** provide a general overview of the use of a contact list element to designate a game in progress. In the example of FIG. 9A, the operations **900** represent steps for a first user to initiate a game with a second user. Persons of ordinary skill in the art will appreciate that similar operations (not shown) may be performed for the second user who participates in the game initiated by the first user.

At step **902**, a first user starts an IM game with a contact (i.e. the second user). The contact may be requested to download the IM game from a source (not shown). In accordance with presence information and subscription mechanisms, the contact may respond to the invitation. Similarly the user of device **202** (i.e. the first user) may accept an invitation.

At step **904**, a contact list element, sometimes referenced as a buddy field or entry, is used to designate the game in progress. The entry may then be used in a GUI for managing and communicating with contacts to invoke a GUI for the associated game in progress. In one embodiment, such a contact list element may be defined for grouping as a current games contact. In one embodiment, such a contact list element may be defined for presentation with individual contacts useful for invoking conversations. As illustrated in FIGS. 4, 7A and 8A, the contact element (**306A** or **308E**) designating the game may be illustrated separately and additionally to an existing contact element (e.g. **308D**) for invoking a conversation with the second user. As illustrated in FIGS. 7B and 8B, an existing contact list entry (e.g. element **308D**) may be used and associated with the game and a modified contact element **704** used to illustrate the game in progress and provide an interface to the game and a conversation from the contact list **703**.

Upon the end of the game in progress (step **906**), the use of the contact list element as a game-in-progress designate may be stopped (step **908**). For example, element **308E** may be removed from contact list **703** in the embodiment of FIGS. 7A and 8A, or elements **306** and **306A** removed from the list **303** of FIG. 4 or an association with a game removed from a contact element and a modified contact element (e.g. **704**)

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replaced with a standard contact element (e.g. **308D**) in the embodiment of FIGS. 7B and 8B.

FIG. 9B illustrates operations **920** providing a simplified embodiment for conducting step **904** whereby a contact-list entry is created for grouping under a current-games contact group in a contact-list interface such as is shown in FIG. 3 and FIG. 4. To use a contact-list entry to designate a game in progress, a contact-list entry is defined (step **922**) and associated with the contact with whom the game in progress is being played. Contact information may be determined from this contact’s existing contact entry. The contact-list entry is also associated with the particular game in progress (e.g. via a pointer or table etc.) to facilitate the invocation of a GUI for the game. The contact entry may also include an association with a graphic for displaying with the contact entry designating the game.

When displaying the contact-list (i.e. when GUI **1004** is used by the user), the current game contact-list entry is shown in the current-game group of contacts in response to various user input (for example, navigation of the contact list interface and expansion of the current-games group element in that interface). The user may use the contact-list interface to invoke and conduct IM conversations (or continue to conduct an existing IM conversation) with the same contact with whom the user is playing the game or with another contact or contacts. The user may select and invoke the entry designating the game in progress. Other IM operations may also be performed (not shown).

Thus in response to certain pre-requisite user input such as menu driven commands or pre-determined keystrokes, etc. (step **928**) operations **920** may branch to perform respective operations. In the simplified view, there are shown steps **930** and **932** for invoking a view of an IM conversation using a contact entry (e.g. an entry of a current conversation group) and returning to the contact list interface view at step **926** and steps **934** and **936** for invoking a view of the game in progress using an entry of the current-games group and returning to the contact list interface view at step **926**. Persons of ordinary skill in the art will appreciate that further operations may be performed. Moreover, should an IM game end, operations **920** stop to continue via step **906**.

Operations **940**, similarly to operations **920**, may be conducted for other embodiments such as that illustrated in FIG. 7B. Rather than define a current-game contact list entry, an existing contact entry for the opposing player (**308D**) may be used, associating that entry with the game in progress (step **942**). When displaying the contact list view, a separate current-game contact entry (**306**) need not be used and the game-in-progress designate (e.g. **308D** as replaced with **704**) may be displayed with other contacts in contact list **308** (Step **946**). In response to user input (step **948**), the game in progress may be invoked at step **950** using the designate **704** or a conversation with the opposing player invoked (step **954**) using the same designate **704**. Operations return to the contact list (i.e. toward step **946**) at respective steps **952** and **956**.

Various storage schemes (e.g. linked lists) and memory allocation schemes for IM conversations **1016** **1018** and game messages **1020** may be employed. Particular game messages may be linked to game-in-progress data **1014** and to a specific contact entry **1010** for designating a game in progress via pointers or other known techniques for associating one structure with another. Game progress may also be encapsulated into a binary IM message with an identifier to associate the binary data with the game application (not shown).

While discussed with reference to a handheld mobile device such as a smart PDA or smart phone, IM applications may be implemented on other computing devices such as

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personal computers (laptops, desktops), workstations and the like configured for network communications. IM applications and IM games are commercially available (e.g. AIM™ from AOL, Yahoo! Messenger™, MSN Messenger™, etc.) for many platforms such as PCs with various Windows®. or Windows compatible operating systems with sufficient memory and video capabilities. Additional software requirements may include an Internet browser and plug-ins and support for Java (e.g. JVM or plug-in support) as well as an available Internet connection.

The above-described embodiments are intended to be examples only. Those of skill in the art may effect alterations, modifications and variations to the particular embodiments without departing from the scope of the application. The subject matter described herein in the recited claims intends to cover and embrace all suitable changes in technology.

The invention claimed is:

1. A method of enabling a game to be played on an electronic device, the method comprising:

enabling a game application on the electronic device to utilize a contact list for an instant messaging application for playing games with contacts in the contact list by identifying game play in the contact list;

during a game in progress with a particular contact in the contact list, preparing game messages to be sent to the particular contact by including game progress data in an instant messaging message and an identifier to associate the data with the game application;

communicating at least one game message during the game in progress with the particular contact using an instant messaging system used by the instant messaging application;

displaying at least one instant message in an instant messaging conversation user interface associated with the particular contact indicative of game progress, the instant messaging conversation user interface enabling additional instant messages to be sent to the particular contact in addition to instant messages indicating game play; and

displaying a game in progress user interface associated with the game play, after detecting a selection in the instant messaging conversation user interface to switch to the game in progress.

2. The method according to claim 1, further comprising maintaining the game progress data based on the game messages.

3. The method according to claim 2, further comprising updating the game progress data upon communicating a game message.

4. The method according to claim 1, further comprising associating a contact list entry in the contact list with a game in progress associated with the game messages.

5. The method according to claim 4, further comprising displaying the game in progress user interface upon detecting selection of the contact list entry associated with the game in progress.

6. The method according to claim 5, further comprising maintaining the game progress data upon switching away from the game in progress user interface to enable the game in progress to be resumed upon a re-invocation of the game in progress user interface.

7. The method according to claim 6, further comprising, upon the game in progress ending, removing the game in progress association with the contact list entry.

8. The method according to claim 4, further comprising displaying a notification of a new move received for the game in progress in a new game message.

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9. A non-transitory computer readable storage medium comprising computer executable instructions for enabling a game to be played on an electronic device, the computer readable medium comprising instructions for:

enabling a game application on the electronic device to utilize a contact list for an instant messaging application for playing games with contacts in the contact list by identifying game play in the contact list;

during a game in progress with a particular contact in the contact list, preparing game messages to be sent to the particular contact by including game progress data in an instant messaging message and an identifier to associate the data with the game application;

communicating at least one game message during the game in progress with the particular contact using an instant messaging system used by the instant messaging application;

displaying at least one instant message in an instant messaging conversation user interface associated with the particular contact indicative of game progress, the instant messaging conversation user interface enabling additional instant messages to be sent to the particular contact in addition to instant messages indicating game play; and

displaying a game in progress user interface associated with the game play, after detecting a selection in the instant messaging conversation user interface to switch to the game in progress.

10. The non-transitory computer readable storage medium according to claim 9, further comprising instructions for maintaining the game progress data based on the game messages.

11. The non-transitory computer readable storage medium according to claim 10, the computer readable storage medium further comprising instructions for updating the game progress data upon communicating a game message.

12. The non-transitory computer readable storage medium according to claim 9, further comprising instructions for associating a contact list entry in the contact list with a game in progress associated with the game messages.

13. The non-transitory computer readable storage medium according to claim 12, further comprising instructions for displaying the game in progress user interface upon detecting selection of the contact list entry associated with the game in progress.

14. The non-transitory computer readable storage medium according to claim 13, further comprising instructions for maintaining the game progress data upon switching away from the game in progress user interface to enable the game in progress to be resumed upon a re-invocation of the game in progress user interface.

15. The non-transitory computer readable storage medium according to claim 14, further comprising instructions for, upon the game in progress ending, removing the game in progress association with the contact list entry.

16. The non-transitory computer readable storage medium according to claim 12, further comprising instructions for displaying a notification of a new move received for the game in progress in a new game message.

17. An electronic device comprising a processor, display, an instant messaging application, and a memory, the memory storing computer executable instructions for enabling a game to be played on the electronic device, the computer executable instructions comprising instructions for:

enabling a game application on the electronic device to utilize a contact list for an instant messaging application

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for playing games with contacts in the contact list by identifying game play in the contact list;  
 during a game in progress with a particular contact in the contact list, preparing game messages to be sent to the particular contact by including game progress data in an instant messaging message and an identifier to associate the data with the game application;  
 communicating at least one game message during the game in progress with the particular contact using an instant messaging system used by the instant messaging application;  
 displaying at least one instant message in an instant messaging conversation user interface associated with the particular contact indicative of game progress, the instant messaging conversation user interface enabling additional instant messages to be sent to the particular contact in addition to instant messages indicating game play; and  
 displaying a game in progress user interface associated with the game play, after detecting a selection in the instant messaging conversation user interface to switch to the game in progress.

18. The electronic device according to claim 17, further comprising instructions for maintaining the game progress data based on the game messages.

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19. The electronic device according to claim 18, the memory further comprising instructions for updating the game progress data upon communicating a game message.

20. The electronic device according to claim 17, further comprising instructions for associating a contact list entry in the contact list with a game in progress associated with the game messages.

21. The electronic device according to claim 20, further comprising instructions for displaying the game in progress user interface upon detecting selection of the contact list entry associated with the game in progress.

22. The electronic device according to claim 21, further comprising instructions for maintaining the game progress data upon switching away from the game in progress user interface to enable the game in progress to be resumed upon a re-invocation of the game in progress user interface.

23. The electronic device according to claim 22, further comprising instructions for, upon the game in progress ending, removing the game in progress association with the contact list entry.

24. The electronic device according to claim 20, further comprising instructions for displaying a notification of a new move received for the game in progress in a new game message.

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