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(54) SYSTEM AND METHOD OF WIRELESS INSTANT MESSAGING

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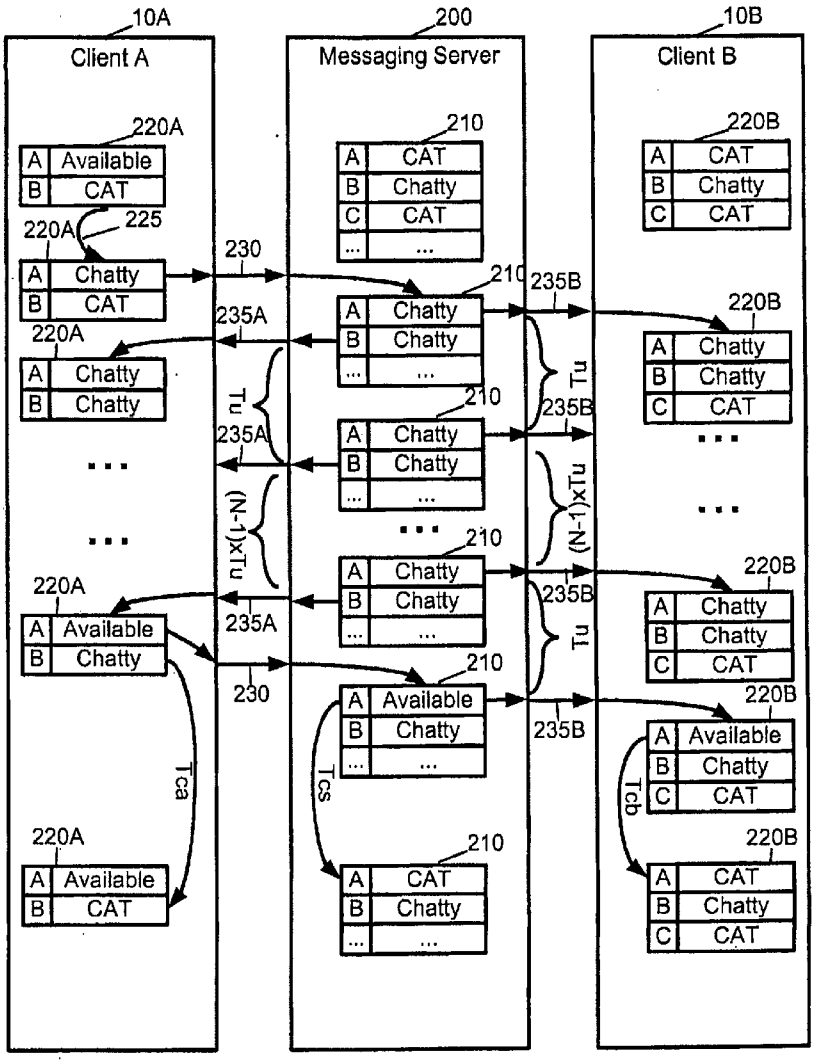
(57) **ABSTRACT**

A method of operating a server includes receiving a single message, from a messaging client, addressed to a group. The group is resolved to user identifiers that identify both wireless device clients and Internet clients. A message is sent to each of the wireless device clients and each of the Internet clients.



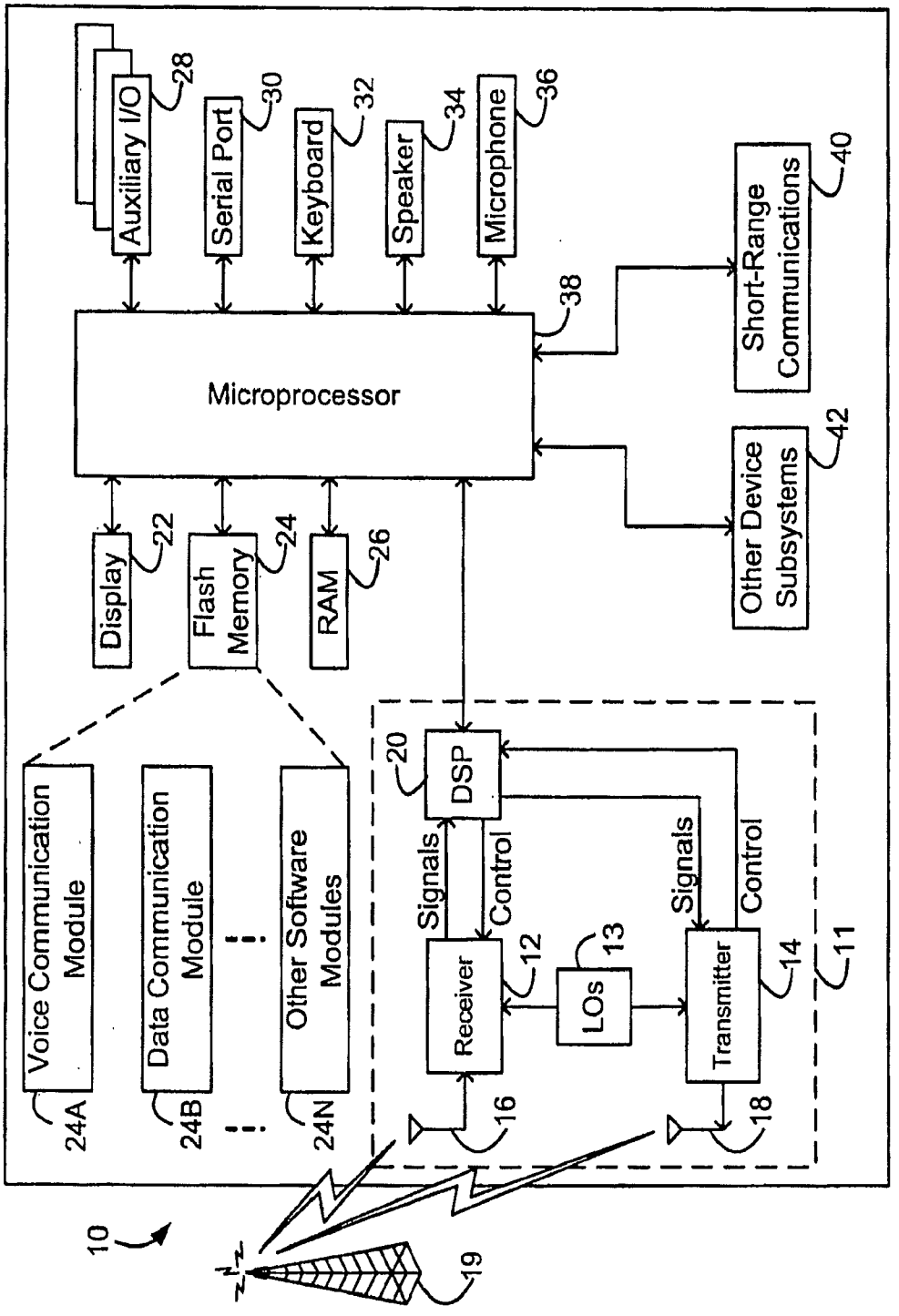

10
19
11
Auxiliary I/O
28
Serial Port
30
Keyboard
32
Speaker
34
Microphone
36
38
Short-Range Communications
40
Microprocessor
Other Device Subsystems
42
Display
22
Flash Memory
24
RAM
26
Voice Communication Module
24A
Data Communication Module
24B
Other Software Modules
24N
DSP
20
Signals
Control
Receiver
12
LOs
13
Transmitter
14
16
18

FIG. 1

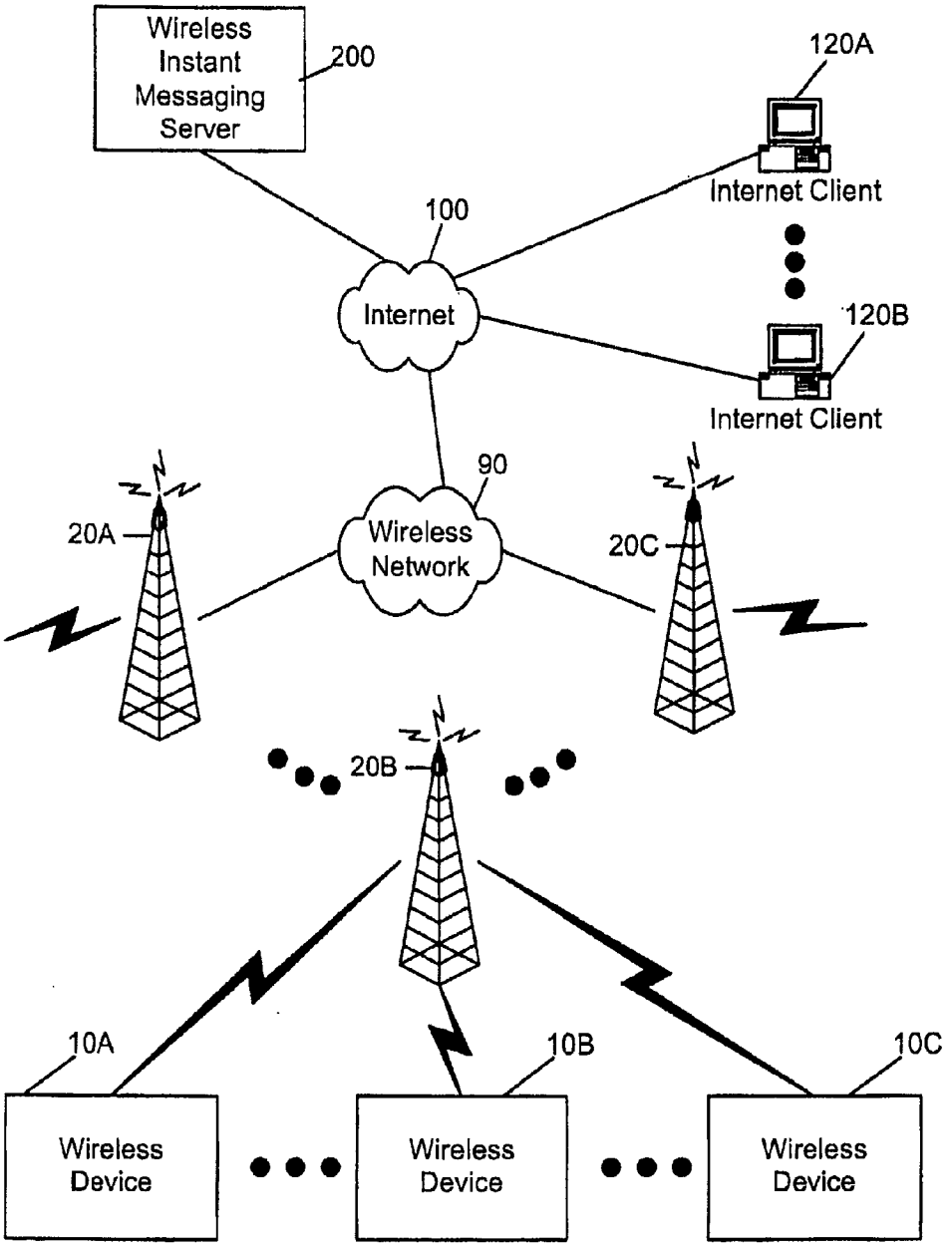

Wireless Instant Messaging Server
200
120A
Internet Client
100
Internet
120B
Internet Client
90
20A
Wireless Network
20C
20B
10A
10B
10C
Wireless Device
Wireless Device
Wireless Device

FIG. 2

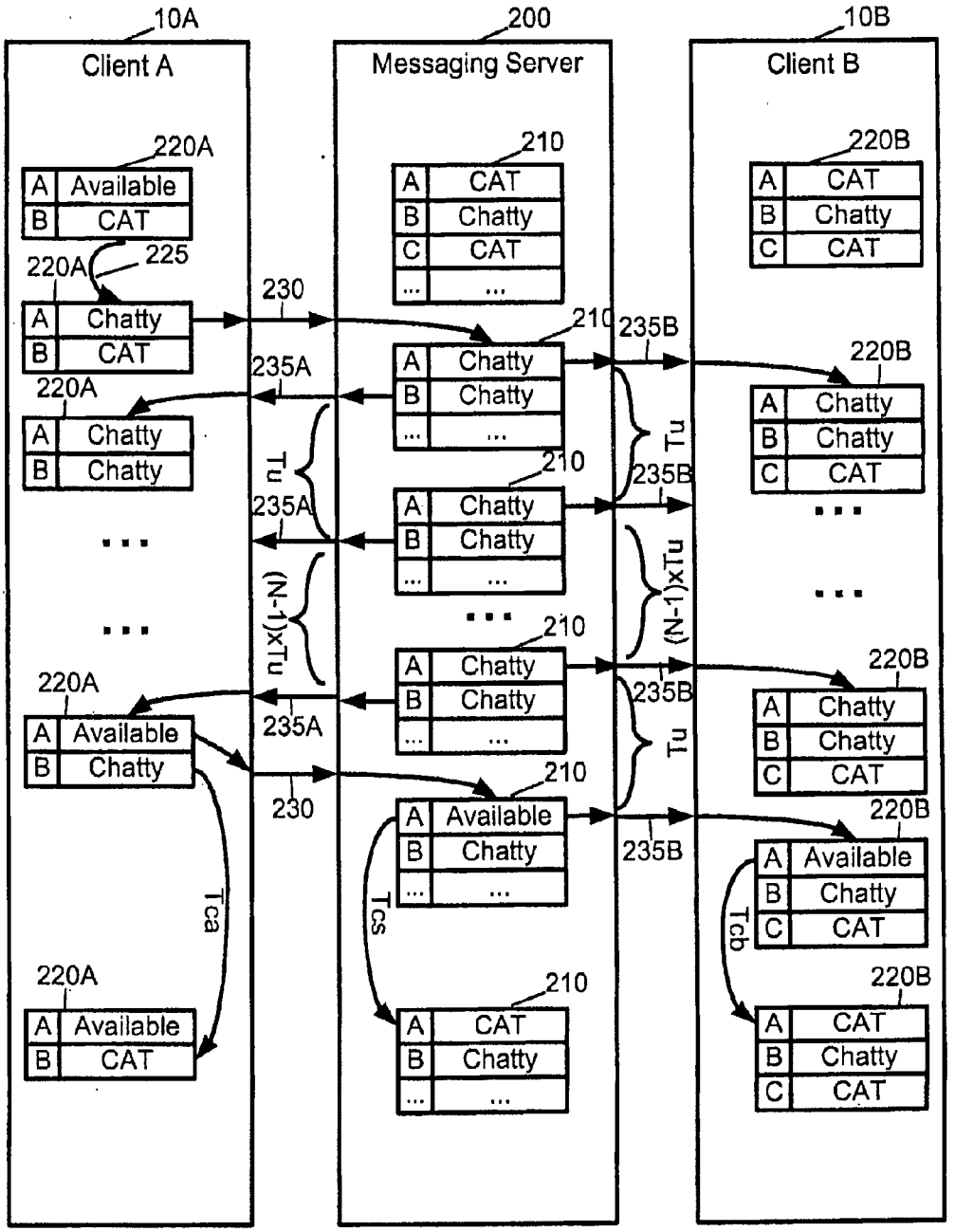

10A
Client A
200
Messaging Server
10B
Client B
220A
A Available
B CAT
225
A Chatty
B CAT
A Chatty
B Chatty
A Available
B Chatty
A Available
B CAT
210
A CAT
B Chatty
C CAT
A Chatty
B Chatty
A Available
B Chatty
A CAT
B Chatty
C CAT
220B
A CAT
B Chatty
C CAT
A Chatty
B Chatty
C CAT
A Chatty
B Chatty
C CAT
A Available
B Chatty
C CAT
A CAT
B Chatty
C CAT
230
235A
235B
Tu
(N-1)xTu
Tca
Tcs
Tcb

FIG. 3

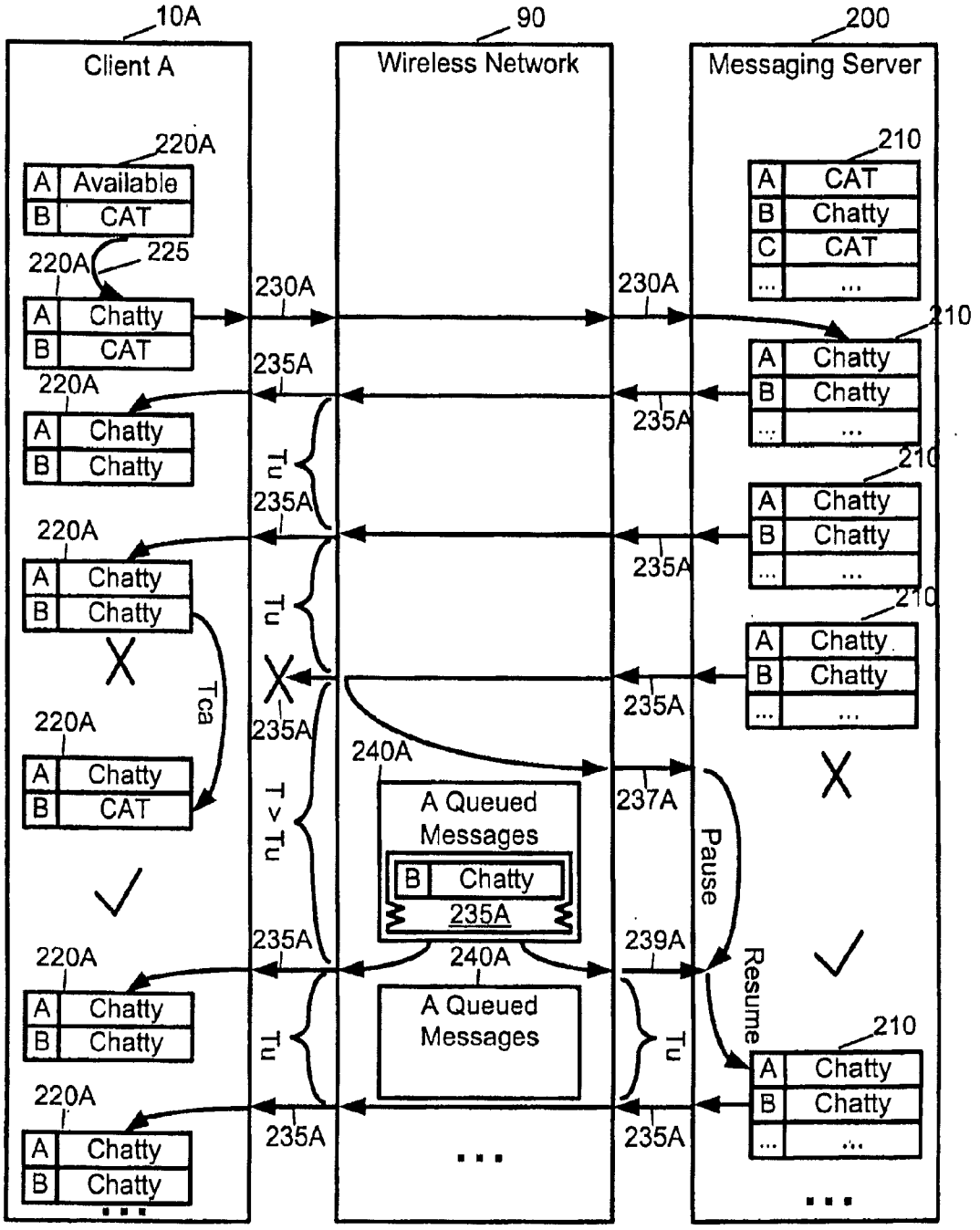

10A
Client A
90
Wireless Network
200
Messaging Server
220A
A Available
B CAT
225
A Chatty
B CAT
230A
210
A CAT
B Chatty
C CAT
235A
Tu
Tca
T<Tu
240A
A Queued Messages
B Chatty
235A
237A
Pause
239A
Resume

FIG. 4

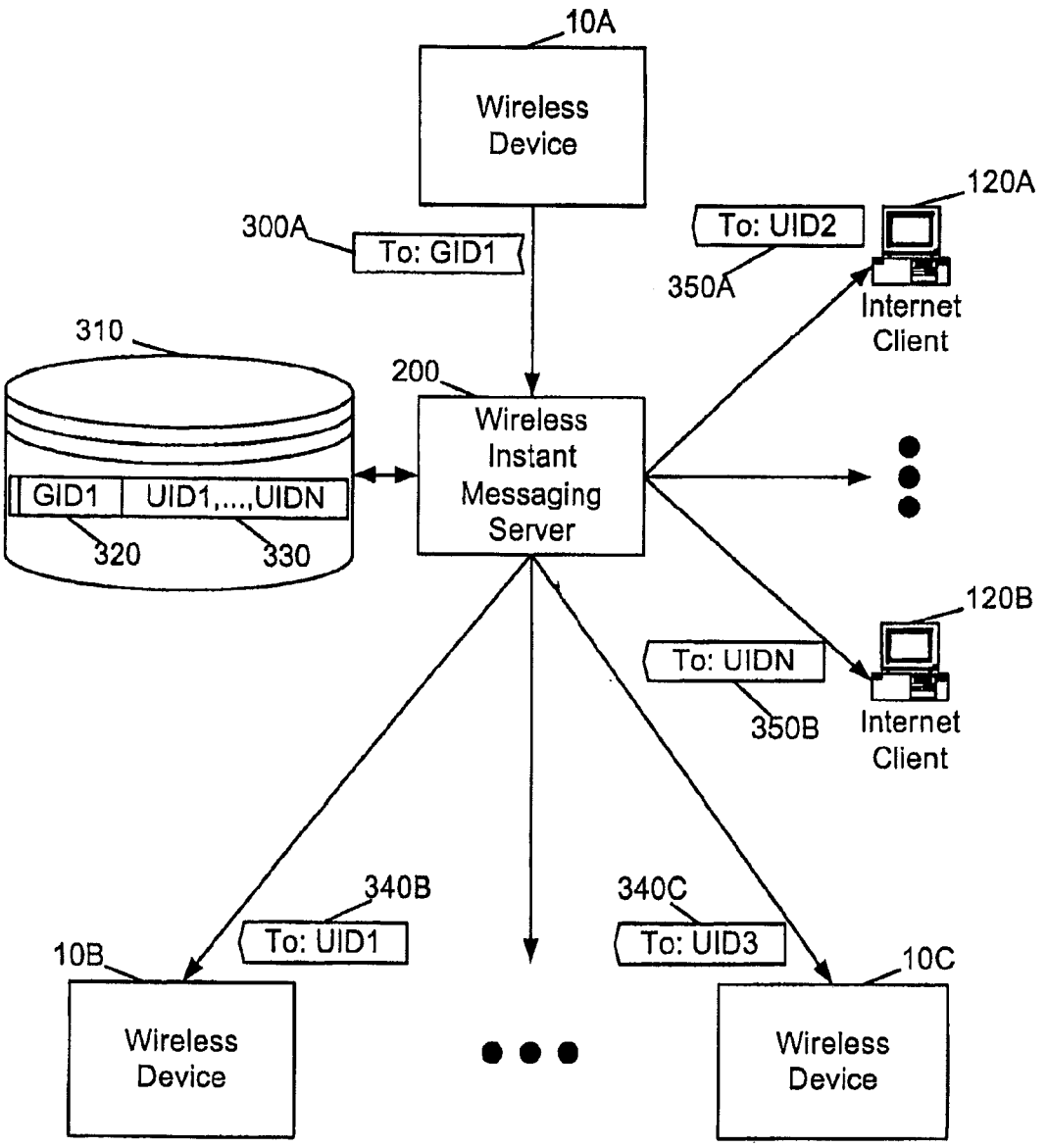

10A
Wireless Device
300A
To: GID1
120A
To: UID2
350A
Internet Client
310
200
Wireless Instant Messaging Server
GID1
UID1,...,UIDN
320
330
120B
To: UIDN
350B
Internet Client
340B
To: UID1
340C
To: UID3
10B
10C
Wireless Device
Wireless Device

FIG. 5

SYSTEM AND METHOD OF WIRELESS INSTANT MESSAGING

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This is a continuation of U.S. patent application Ser. No. 12/765935, filed Apr. 23, 2010, which is a continuation of U.S. patent application Ser. No. 12/108649, filed Apr. 24, 2008 (now U.S. Pat. No. 7,835,759), which is a continuation of U.S. patent application Ser. No. 10/667544, filed Sep. 22, 2003 (now U.S. Pat. No. 7,379,732), which claims the benefit of U.S. Provisional Application No. 60/412818, filed Sep. 24, 2002, all the above applications hereby incorporated herein by reference.

TECHNICAL FIELD This invention relates generally to the field of instant messaging. More particularly, the invention provides a system and method of instant messaging to and from wireless devices.

BACKGROUND

[0002] Known Instant Messaging (IM) techniques typically send short messages and maintain presence information. One technique for maintaining presence information is the "buddy list." In a "buddy list," users keep a list of correspondents that they regularly communicate with. Correspondents in a "buddy list" typically poll each other for presence information, such as correspondent active, disconnected, etc. The users can glance through the "buddy list" to see if anyone is available to communicate with.

[0003] One known IM technique that uses a "buddy list" is ICQ. In ICQ, each correspondent in the "buddy list" sends a message to the user if the correspondent's presence information changes, e.g., if a correspondent disconnects or reconnects to a network. The traditional IM presence information in ICQ is defined using states such as "connected," "chatty," "away," "extended away," "occupied," "do not disturb (DND)," "invisible," and "offline."

[0004] Traditional IM techniques may use frequent network traffic communications that may exceed typical wireless network capacity. This occurs because in traditional IM techniques, such as ICQ, presence information is transmitted between stations even in situations where the stations are not presently communicating with one another. This continuous transmission of presence information, regardless of the state of the stations, can result in increased network traffic and a reduction in station battery life, particularly when the station is a wireless mobile communication device.

[0005] Furthermore, traditional IM techniques may assume that the users are not always activated and always connected to the network—which may not always be the case with certain wireless network users that maintain constant connectivity.

SUMMARY

[0006] A system and method of instant messaging is provided. A plurality of messaging clients capable of transmitting instant messages to one another are each configured to share presence information with one another via a network. A determination is made, with respect to each of the messaging clients, as to whether the messaging client is in a state in which it is receptive to receiving presence information from the other messaging clients, and if so, then the presence information is provided to the messaging client. The presence information may be provided directly between the messaging clients, or it may be provided through one or more centralized proxy servers that store and propagate the presence information. A special state is provided, referred to herein as the unknown state, which when entered by a particular messaging client will cause the system to cease further transmissions of presence information to that client. Upon changing to a communicative state, the system resumes providing presence information to the messaging client.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. **1** is a block diagram of a dual-mode mobile communication device.

[0008] FIG. **2** is a block diagram of an exemplary wireless instant messaging system in accordance with the present invention.

[0009] FIG. **3** is an interaction diagram illustrating steps of a first embodiment of a method of wireless instant messaging in accordance with the present invention.

[0010] FIG. **4** is an interaction diagram illustrating steps of a second embodiment of a method of wireless instant messaging in accordance with the present invention.

[0011] FIG. **5** is an interaction diagram illustrating steps of a third embodiment of a method of wireless instant messaging in accordance with the present invention.

DETAILED DESCRIPTION

[0012] Turning now to the drawing figures, FIG. **1** is a block diagram of a dual-mode mobile communication device **10**. The dual-mode device **10** includes a transceiver **11**, a microprocessor **38**, a display **22**, Flash memory **24**, RAM memory **26**, auxiliary input/output (I/O) devices **28**, a serial port **30**, a keyboard **32**, a speaker **34**, a microphone **36**, a short-range wireless communications sub-system **40**, and may also include other device sub-systems **42**. The transceiver **11** preferably includes transmit and receive antennas **16**, **18**, a receiver **12**, a transmitter **14**, one or more local oscillators **13**, and a digital signal processor **20**. Within the Flash memory **24**, the device **10** preferably includes a plurality of software modules **24**A-**24**N that can be executed by the microprocessor **38** (and/or the DSP **20**), including a voice communication module **24**A, a data communication module **24**B, and a plurality of other operational modules **24**N for carrying out a plurality of other functions.

[0013] The mobile communication device **10** is preferably a two-way communication device having voice and data communication capabilities. Thus, for example, the device may communicate over a voice network, such as any of the many known analog or digital cellular networks, and may also communicate over a data network. The voice and data networks are depicted in FIG. **1** by the communication tower **19**. These voice and data networks may be separate communication networks using separate infrastructure, such as base stations, network controllers, etc., or they may be integrated into a single wireless network.

[0014] The communication subsystem **11** is used to communicate with the voice and data network **19**, and includes the receiver **12**, the transmitter **14**, the one or more local oscillators **13** and may also include the DSP **20**. The DSP **20** is used to send and receive signals to and from the transmitter **14** and receiver **12**, and is also utilized to receive control information

from the transmitter **14** and to provide control information to the receiver **12**. If the voice and data communications occur at a single frequency, or closely spaced set of frequencies, then a single local oscillator **13** may be used in conjunction with the transmitter **14** and receiver **12**. Alternatively, if different frequencies are utilized for voice communications versus data communications, then a plurality of local oscillators **13** can be used to generate a plurality of frequencies corresponding to the voice and data networks **19**. Although two antennas **16**, **18** are depicted in FIG. **1**, the mobile device **10** could be used with a single antenna structure. Information, which includes both voice and data information, is communicated to and from the communication module **11** via a link between the DSP **20** and the microprocessor **38**.

[0015] The detailed design of the communication subsystem **11**, such as frequency band, component selection, power level, etc., will be dependent upon the communication network **19** in which the device is intended to operate. For example, a device **10** intended to operate in a North American market may include a communication subsystem **11** designed to operate with the Mobitex™ or DataTAC™ mobile data communication networks and also designed to operated with any of a variety of voice communication networks, such as AMPS, TDMA, CDMA, PCS, etc., whereas a device **10** intended for use in Europe may be configured to operate with the General Packet Radio Service (GPRS) data communication network and the GSM voice communication network. Other types of data and voice networks, both separate and integrated, may also be utilized with the mobile device **10**.

[0016] Depending upon the type of network **19** (or networks), the access requirements for the dual-mode mobile device **10** may also vary. For example, in the Mobitex and DataTAC data networks, mobile devices are registered on the network using a unique identification number associated with each device. In GPRS data networks, however, network access is associated with a subscriber or user of a device **10**. A GPRS device typically requires a subscriber identity module ("SIM"), which is required in order to operate the device **10** on the GPRS network. Local or non-network communication functions (if any) may be operable without the SIM device, but the device **10** will be unable to carry out any functions involving communications over the data network **19**, other than any legally required operations, such as 911 emergency calling.

[0017] After any required network registration or activation procedures have been completed, the dual-mode device **10** may send and receive communication signals, including both voice and data signals, over the network **19** (or networks). Signals received by the antenna **16** from the communication network **19** are routed to the receiver **12**, which provides for signal amplification, frequency down conversion, filtering, channel selection, etc., and may also provide analog to digital conversion. Analog to digital conversion of the received signal allows more complex communication functions, such as digital demodulation and decoding to be performed using the DSP **20**. In a similar manner, signals to be transmitted to the network **19** are processed, including modulation and encoding, for example, by the DSP **20** and are then provided to the transmitter **14** for digital to analog conversion, frequency up conversion, filtering, amplification and transmission to the communication network **19** (or networks) via the antenna **18**. Although a single transceiver **11** is shown in FIG. **1** for both voice and data communications, it is possible that the device **10** may include two distinct transceivers, a first transceiver for transmitting and receiving voice signals, and a second transceiver for transmitting and receiving data signals.

[0018] In addition to processing the communication signals, the DSP **20** also provides for receiver and transmitter control. For example, the gain levels applied to communication signals in the receiver **12** and transmitter **14** may be adaptively controlled through automatic gain control algorithms implemented in the DSP **20**. Other transceiver control algorithms could also be implemented in the DSP **20** in order to provide more sophisticated control of the transceiver **11**.

[0019] The microprocessor **38** preferably manages and controls the overall operation of the dual-mode mobile device **10**. Many types of microprocessors or micro-controllers could be used here, or, alternatively, a single DSP **20** could be used to carry out the functions of the microprocessor **38**. Low-level communication functions, including at least data and voice communications, are performed through the DSP **20** in the transceiver **11**. Other, high-level communication applications, such as a voice communication application **24**A, and a data communication application **24**B may be stored in the Flash memory **24** for execution by the microprocessor **38**. For example, the voice communication module **24**A may provide a high-level user interface operable to transmit and receive voice calls between the dual-mode mobile device **10** and a plurality of other voice devices via the network **19**. Similarly, the data communication module **24**B may provide a high-level user interface operable for sending and receiving data, such as e-mail messages, files, organizer information, short text messages, etc., between the dual-mode mobile device **10** and a plurality of other data devices via the network **19**.

[0020] The microprocessor **38** also interacts with other device subsystems, such as the display **22**, Flash memory **24**, random access memory (RAM) **26**, auxiliary input/output (I/O) subsystems **28**, serial port **30**, keyboard **32**, speaker **34**, microphone **36**, a short-range communications subsystem **40** and any other device subsystems generally designated as **42**.

[0021] Some of the subsystems shown in FIG. **1** perform communication-related functions, whereas other subsystems may provide "resident" or on-device functions. Notably, some subsystems, such as keyboard **32** and display **22** may be used for both communication-related functions, such as entering a text message for transmission over a data communication network, and device-resident functions, such as a calculator or task list or other PDA type functions.

[0022] Operating system software used by the microprocessor **38** is preferably stored in a persistent store, such as Flash memory **24**. In addition to the operating system, which controls all of the low-level functions of the device **10**, the Flash memory **24** may include a plurality of high-level software application programs, or modules, such as a voice communication module **24**A, a data communication module **24**B, an organizer module, or any other type of software module **24**N. The Flash memory **24** also may include a file system for storing data. These modules are executed by the microprocessor **38** and provide a high-level interface between a user of the device and the device. This interface typically includes a graphical component provided through the display **22**, and an input/output component provided through the auxiliary I/O **28**, keyboard **32**, speaker **34**, and microphone **36**. The operating system, specific device applications or modules, or parts thereof, may be temporarily loaded into a volatile store, such as RAM **26** for faster operation. Moreover, received commu-

nication signals may also be temporarily stored to RAM **26**, before permanently writing them to a file system located in the persistent store **24**.

[0023] An exemplary application module **24**N that may be loaded onto the dual-mode device **10** is a personal information manager (PIM) application providing PDA functionality, such as calendar events, appointments, and task items. This module **24**N may also interact with the voice communication module **24**A for managing phone calls, voice mails, etc., and may also interact with the data communication module for managing e-mail communications and other data transmissions. Alternatively, all of the functionality of the voice communication module **24**A and the data communication module **24**B may be integrated into the PIM module.

[0024] The Flash memory **24** preferably provides a file system to facilitate storage of PIM data items on the device. The PIM application preferably includes the ability to send and receive data items, either by itself, or in conjunction with the voice and data communication modules **24**A, **24**B, via the wireless network **19**. The PIM data items are preferably seamlessly integrated, synchronized and updated, via the wireless network **19**, with a corresponding set of data items stored or associated with a host computer system, thereby creating a mirrored system for data items associated with a particular user.

[0025] The mobile device **10** may also be manually synchronized with a host system by placing the device **10** in an interface cradle, which couples the serial port **30** of the mobile device **10** to the serial port of the host system. The serial port **30** may also be used to enable a user to set preferences through an external device or software application, or to download other application modules **24**N for installation. This wired download path may be used to load an encryption key onto the device, which is a more secure method than exchanging encryption information via the wireless network **19**.

[0026] Additional application modules **24**N may be loaded onto the dual-mode device **10** through the network **19**, through an auxiliary I/O subsystem **28**, through the serial port **30**, through the short-range communications subsystem **40**, or through any other suitable subsystem **42**, and installed by a user in the Flash memory **24** or RAM **26**. Such flexibility in application installation increases the functionality of the device **10** 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 the device **10**.

[0027] When the dual-mode device **10** is operating in a data communication mode, a received signal, such as a text message or a web page download, will be processed by the transceiver **11** and provided to the microprocessor **38**, which will preferably further process the received signal for output to the display **22**, or, alternatively, to an auxiliary I/O device **28**. A user of dual-mode device **10** may also compose data items, such as email messages, using the keyboard **32**, which is preferably a complete alphanumeric keyboard laid out in the QWERTY style, although other styles of complete alphanumeric keyboards such as the known DVORAK style may also be used. User input to the device **10** is further enhanced with a plurality of auxiliary I/O devices **28**, which may include a thumbwheel input device, a touchpad, a variety of switches, a rocker input switch, etc. The composed data items input by the user may then be transmitted over the communication network **19** via the transceiver **11**.

[0028] When the dual-mode device **10** is operating in a voice communication mode, the overall operation of the device **10** is substantially similar to the data mode, except that received signals are preferably output to the speaker **34** and voice signals for transmission are generated by a microphone **36**. Alternative voice or audio I/O subsystems, such as a voice message recording subsystem, may also be implemented on the device **10**. Although voice or audio signal output is preferably accomplished primarily through the speaker **34**, the display **22** may also be used to provide an indication of the identity of a calling party, the duration of a voice call, or other voice call related information. For example, the microprocessor **38**, in conjunction with the voice communication module and the operating system software, may detect the caller identification information of an incoming voice call and display it on the display **22**.

[0029] A short-range communications subsystem **40** may also be included in the dual-mode device **10**. For example, the subsystem **40** may include an infrared device and associated circuits and components, or a Bluetooth™ short-range wireless communication module to provide for communication with similarly enabled systems and devices.

[0030] FIG. **2** is a block diagram of an exemplary wireless instant messaging system in accordance with the present invention. Wireless devices **10** communicate with base stations **20** wirelessly using radio waves. The base stations **20** communicate via a wireless network **90**, which in turn communicates via the Internet **100** with a wireless instant messaging server **200** and Internet-based instant messaging clients **120**.

[0031] FIG. **3** is an interaction diagram illustrating steps of a first embodiment of a method of wireless instant messaging in accordance with the present invention. Messaging server **200** communicates with client applications on wireless devices A and B (**10**A and **10**B), as well as with other client applications, such as C. In FIG. **3**, an arrow between messaging server **200** and clients **10**A, B illustrate communications. The relative time between these communications is illustrated by time flowing generally downward so that if a first arrow is higher than a second arrow in FIG. **3**, this is meant to illustrate that the first communication occurred before the second communication.

[0032] Messaging server **200** keeps track of presence information. As illustrated, initially messaging server **200** has a server presence table **210** having one row per wireless client A, B, C, etc., wherein each row stores the presence state for each wireless client. As shown, client **10**B is initially in the "chatty" state according to table **210**, whereas clients **10**A and C are in the "CAT" state (named after Shrödinger's cat) according to table **210**. The CAT state is also referred to herein as the unknown state. While represented in the "CAT" state, the presence information for a client is understood to be neither available nor unavailable, i.e., its state is undetermined, and the messaging server **200** preferably does not propagate presence information to any client in this state. The "CAT" state is maintained until the state of the client is "observed," in which case the undetermination is resolved. The act of "observing" a client may cause the state of the client to change. The "CAT" state is thus a pseudo-state that can be used by both the messaging server **200** and clients **10**A, B. Optionally, the "CAT" state can be displayed to the user of client devices **10**A, B, for instance, in co-operation with a

"buddy" list. The "CAT" state is preferably not communicated between messaging server **200** and client **10**A, B. In addition, representing the state of a client with the "CAT" state enables wireless presence information to operate with the lack of state information for that particular client.

[0033] In a similar manner to how presence information is maintained at the messaging server **200**, each client **10**A, B maintains a client presence table **220**A, B, wherein each row of the client presence table **220**A stores the presence state for a wireless client. Instead of keeping track of all clients as was the case with the server presence table **210**, the client presence tables **220**A, B preferably only keep track of the presence information for select wireless messaging correspondents, for instance only those correspondents found on a "buddy" list. Also shown in client presence tables **220**A, B is the local client state, which need not necessarily be stored in the same table as the select clients. As shown in table **220**A, for example, client **10**B is initially in the "CAT" state, whereas client **10**A is in the "Available" state. Table **220**B also shows that client **10**A is initially in the "CAT" state, whereas client **10**B is in the "Chatty" state.

[0034] In FIG. **3**, client **10**A changes its state from "Available" to "chatty" in response to some trigger **225**—for instance when the user of client **10**A activates the instant messaging application. Client **10**A then communicates **230**A its new state information to the messaging server **200**, which tracks this information and updates the change in table **210**.

[0035] At messaging server **200**, both clients **10**A and **10**B are now in the "chatty" state. Messaging server **200** sends client state update messages to all clients that are in the "chatty" state. As shown, client **10**B receives an update **235**B indicating that client **10**A is now in the "chatty" state, and updates client table **220**B accordingly. Similarly, client **10**A receives an update **235**A indicating that client **10**B is now in the "chatty" state. Thus, by communicating its state to messaging server **200**, client **10**A effectively "observes" the state of client **10**B thereby resolving the indeterminacy of the original "CAT" state for client **10**B in table **220**A of client **10**A.

[0036] While clients **10**A and **10**B remain in the "chatty" state, as indicated in the server presence table **210**, messaging server **200** periodically (with period Tu) sends updates **235**B and **235**A to clients **10**B and **10**A, respectively. The updates preferably include all non-CAT states of buddies, and optionally may include all "chatty" states, as well as other optional information (bandwidth permitting).

[0037] After N updates, client **10**A changes state from "chatty" to "available" in table **220**A, for instance as a result of the user of client **10**A stopping the instant messaging application. Client **10**A therefore sends update **230**A to messaging server **200**, which continues to send periodic (with period Tu) update messages **235**B to client **10**B since client **10**B is in the "chatty" state.

[0038] Because client **10**A is no longer in the "chatty" state in table **210**, however, after a "CAT" timeout interval Tcs has expired, client **10**A is represented by the "CAT" state in table **210**. Similarly, because the state of client **10**B is no longer being updated in table **220**A, after a "CAT" timeout interval Tca has expired, the state of client **10**B is represented by the "CAT" state in table **220**A. The same operation occurs after a timeout interval Tcb at client **10**B, so that client **10**A is represented with the "CAT" state in table **220**B. Even though client B is in the "chatty" state both in table **210** and **220**B, messaging server **200** does not send periodic updates to client **10**B because both client **10**A and **10**C have the "CAT" state in table **210**.

[0039] FIG. **4** is an interaction diagram illustrating steps of a second embodiment of a method of wireless instant messaging in accordance with the present invention. FIG. **4** shows communications between messaging server **200** and client **10**A illustrating in greater detail steps surrounding updates queued by wireless network **90** when client **10**A falls out of coverage. Client **10**A and messaging server **200** originally have presence information tables **220**A and **210**, respectively. As was the case in FIG. **3**, a trigger **225** at client **10**A causes client **10**A to enter the "chatty" state. Client **10**A then changes its state from "Available" to "chatty" in response to the trigger **225**—for instance when the user of client **10**A activates the instant messaging application. Client **10**A then communicates **230**A its new state information to the messaging server **200**, which tracks and updates the change in table **210**.

[0040] At messaging server **200**, both clients **10**A and **10**B are now in the "chatty" state. Messaging server **200** sends client state update messages to all clients that are in the "chatty" state. Because only client **10**A is shown in FIG. **4**, only update messages sent to client **10**A are shown. Client **10**A receives an update **235**A indicating that client **10**B is now in the "chatty" state, and updates client table **220**A accordingly.

[0041] While client **10**A remains in the "chatty" state, as indicated in the server presence table **210**, messaging server **200** periodically (with period Tu) sends updates **235**A to client **10**A. However, as shown, the third update does not reach client **10**A because client **10**A has gone out of coverage—as illustrated by the X. As a result, wireless network **90** preferably queues update message **235**A in queue **240**A for client **10**A, and sends a queued message status message **237**A back to messaging server **200**.

[0042] Preferably, upon receiving a queued message status message **237**A, messaging server **200** pauses the periodic transmission of update messages to client **10**A. This ensures that the capacity of wireless network **90** is not overflowed by update messages **235**A for client **10**A for the duration of time client **10**A is out of coverage—illustrated as a portion of the duration T>Tu.

[0043] Finally, after client **10**A returns to coverage—illustrated by the check mark—queued message **235**A in queue **240**A is sent to client **10**A by wireless network **90**. The wireless network **90** also sends a queued message delivered message **239**A to messaging server **200**

[0044] Preferably, upon receiving a queued message delivered message **239**A, messaging server **200** resumes the periodic transmission of update messages to client **10**A.

[0045] FIG. **5** is an interaction diagram illustrating steps of a third embodiment of a method of wireless instant messaging in accordance with the present invention.

[0046] A wireless device **10**A sends a single message **300**A addressed to a group GID**1** via wireless messaging server **200**. Group GID **1** is a unique identifier which is resolved by messaging server by consulting a database **310** that relates group ids such as GID**1** **320** to user ids **330**, such as UID**1**, . . . , UIDN. As shown, messaging server **200** then sends messages **340**B-C to each wireless device having user ids **330**, as well as sending messages **350**A-B to internet clients **120**A-B. This mechanism ensures that wireless device **10**A only needs to transmit one wireless message **300**A in order to reach multiple wireless users **10**B-C and internet users **120**A-B.

[0047] The above-described embodiments of the present invention 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 invention.

1. A method of operating a server, comprising:
receiving a single message, from a messaging client, addressed to a group;
resolving the group to user identifiers that identify both wireless device clients and Internet clients; and
sending a message to each of the wireless device clients and each of the Internet clients.

2. The method of claim **1** wherein the group is identified by a unique group identifier.

3. The method of claim **2** wherein the resolving comprises consulting a database that relates group identifiers to user identifiers.

4. The method of claim **1** wherein the messaging client is on a wireless device.

5. The method of claim **1** wherein the single message is an instant message, and the server is an instant messaging server.

6. The method of claim **1** wherein at least one of the Internet clients is on a desktop computer.

7. The method of claim **1** wherein the server performing the method maintains presence information for the wireless device clients.

8. The method of claim **7** further comprising determining that a wireless device client, from among said wireless device clients, is in an unknown presence state based on a predetermined time period having passed after receipt of presence information from the wireless device client without having received additional presence information from the wireless device client.

9. The method of claim **8** further comprising refraining from transmitting a message to those of the wireless device clients that are in an unknown state.

10. The method of claim **1** wherein the single message has presence information indicating a presence state of the messaging client.

11. A mobile communication device comprising:
a communication subsystem configured to send, to an instant messaging server, a single instant message addressed to a group that comprises both wireless device clients and Internet clients.

12. The mobile communication device of claim **11** wherein the group is identified by a unique group identifier.

13. The mobile communication device of claim **11** wherein at least one of the Internet clients is on a desktop computer.

14. A wireless instant messaging system comprising:
a wireless messaging server configured to receive a single message addressed to a group, and to resolve the group to client identifiers that identify both wireless device clients and Internet clients, and to send a message to each of the wireless device clients and each of the Internet clients.

15. The system of claim **14** wherein the group is identified by a unique group identifier.

16. The system of claim **15** further comprising a database that relates the group's unique identifier to user identifiers for the wireless device clients and the Internet clients.

17. The system of claim **14** wherein at least one of the Internet clients is on a desktop computer.

18. The system of claim **14** wherein the single message is an instant message, and the server is an instant messaging server.

19. The system of claim **18** wherein the server is configured to determine that a wireless device client, from among said wireless device clients, is in an unknown presence state based on a predetermined time period having passed after receipt of presence information from the wireless device client without having received additional presence information from the wireless device client.

20. The system of claim **19** further comprising refraining from transmitting the message to those of the wireless device clients that are in an unknown state.

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