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APPLICATION NUMBER: *10/817,994*
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Under Secretary of Commerce for Intellectual Property
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PTO/SB/05 (01-04)
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22141 U.S. PTO 10/817994 040504

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	DJL-1
First Inventor	DANIEL J LIN
Title	Peer-to-Peer instant Messaging method and Device
Express Mail Label No.	ER 036249039 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. ☒ Applicant claims small entity status. See 37 CFR 1.27.
3. ☒ Specification [*Total Pages* 11]
   (preferred arrangement set forth below)
   - Descriptive title of the invention
   - Cross Reference to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table, or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
4. ☒ Drawing(s) (*35 U.S.C. 113*) [*Total Sheets* 2]
5. Oath or Declaration [*Total Sheets* 2]
   a. ☒ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement *(when there is an assignee)* ☐ Power of Attorney
11. ☐ English Translation Document *(if applicable)*
12. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☐ Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. ☐ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☐ Other: .....

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: .....

Prior application information: *Examiner* _____ *Art Unit:* _____

For CONTINUATION OR DIVISIONAL APPS only; The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☐ Customer Number: _____ *OR* ☒ Correspondence address below

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Name (Print/Type)	DANIEL J LIN	*Registration No. (Attorney/Agent)*	47750
Signature	DJ L.	*Date*	4/3/04

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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 655

Complete if Known	
Application Number	
Filing Date	April 5, 2004
First Named Inventor	DANIEL J LIN
Examiner Name	
Art Unit	
Attorney Docket No.	DJL-1

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

Deposit Account Number

Deposit Account Name

The Director is authorized to: *(check all that apply)*

☐ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	385
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 385

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below	Fee Paid
Total Claims 30	-20** = 10	X	9	= 90
Independent Claims 3	- 3** = 0	X		=
Multiple Dependent				=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 90

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	180
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 180

SUBMITTED BY

(Complete *(if applicable)*)

Name (Print/Type)	DANIEL J LIN	Registration No. (Attorney/Agent)	47750	Telephone	415-956-3005
Signature				Date	4/08/04

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel J. Lin

Group No.:

Serial No.:

Batch No.:

Filed: April 5, 2004

Examiner:

For: PEER-TO-PEER INSTANT MESSAGING METHOD AND DEVICE

Attorney
Docket No.: DJL-1

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I hereby certify that the attached Utility Patent Application Transmittal Form, Fee Transmittal Form (and check), Declaration for Utility or Design Patent Application, Information Disclosure Statement (PTO/SB/08a) (and copies of IDS citations), specification entitled "Peer-to-Peer Mobile Instant Messaging Method and Device" and accompanying drawings are being deposited with the United States Postal Service as Express Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450 on this date.

April 5, 2004

Express Mail No: **ER 036214039 US**

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Peer-to-Peer Mobile Instant Messaging Method and Device

Field of the Invention

The present invention relates generally to messaging techniques for mobile devices, and more specifically, a technique to establish peer-to-peer session-based instant messaging ("IM") communications among mobile devices without the need for IM registration.

Background of the Invention

Current instant messaging ("IM") technologies depend upon a registration system to enable end users to communicate with one another. For example, to establish an IM session on AOL's Instant Messenger ("AIM"), each participating end user must have registered with AOL and must log into an AIM server in order to use the service. This registration system creates a virtual network of registered users and the value to a new user in joining an IM service is directly related to the number of existing users already registered on the service. As more users register to use an IM service, the value of the IM service to registered users increases since registered users will be able establish IM sessions with an increasing number of users. Known as a "network effect," this phenomenon causes a further tipping effect, which is the natural tendency for few (or even a single) IM services to pull away from their competitors once they have gained an initial edge by registering a critical mass of users. This tipping effect tends to occur rapidly and stems, in part, from users' inclination to gravitate towards the IM services that they expect will be become dominant. This tipping effect gives proprietary IM services such as AIM, Microsoft's .NET Messenger Service, and Yahoo! Messenger, that have achieved a large network of registered users, a strong barrier to entry into the IM market. As such, proprietary IM services may be reluctant to provide interoperability to other less established IM services since providing such access could cannibalize their competitive network advantage.

From a technical perspective, the registration system used in IM services is necessary to provide *presence* capabilities. In order to establish an IM session, an end user must be registered with the IM service so that the end user can log into the service's IM server, which broadcasts the end user's availability to engage in IM sessions to an authorized group of the end user's peers that have also registered and logged into the IM server. The IM server also similarly provides the end user with a list of registered peers that are available to engage in an IM session. When end users engage in IM sessions over a traditional connected network environment, presence capabilities are a critical characteristic of an IM service because such capabilities are needed to provide an end user's peers with sufficient presence information (i.e., IP address and port number) in order to locate the end user within the network and establish a connection between the end user and a peer for an IM session. Furthermore, logging into an IM server also

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enables an end user to indicate whether or not he or she is physically present (e.g., sitting in front of a networked workstation or in front of a laptop that is connected the network) and willing to engage in an IM session.

However, IM services for mobile devices, such as smartphones, appear to have less a need for presence capabilities. Unlike establishing an IM session on a laptop, desktop or workstation, where the end user must broadcast his or her availability and presence information on the network when he or she is physically sitting in front of the laptop, desktop or workstation, establishing an IM session on a mobile device does not suffer from the same presence issues because the end user is presumed to be carrying the mobile device at all times. So long as the mobile device has enough contact information (e.g., cellular telephone number, PIN number, etc.) to directly communicate with other mobile devices through the underlying wireless network technology (e.g., cellular technology, etc.), an IM session could be initiated and established in a manner similar to making and answering mobile phone calls without the need for registering with or logging into an IM server in order to broadcast presence information to other end users for IM purposes.

Furthermore, unlike IM services in a traditional connected network environment, successful end user adoption of an IM service between mobile devices would not suffer from reliance upon establishing a critical mass of end users through a registration system. In contrast, such an IM service would be instantly usable to any and all end users of mobile devices so long as such mobile devices are already capable of directly communicating with other mobile devices through the underlying wireless mobile technology without needing further presence information (e.g., cellular phones directly communicating with other cellular phones through cellular telephone numbers). As such, what is needed is a method to establish IM sessions directly between mobile devices, where such mobile devices are capable of directly communicating with other mobile devices through the underlying wireless technology, such that no IM registration or log-in server is needed to provide presence information to other mobile devices for IM purposes.

Summary of the Invention

The present invention provides a method for establishing a peer-to-peer session-based IM communications between mobile devices over a digital mobile network system that supports data packet-based communications. Under the present invention, no IM registration or IM log-in server need be used to provide presence information. Instead, a mobile device initiating an IM session opens a listening port defined by an underlying data packet based network protocol. The initiating mobile device sends an invitation message containing the network address, including the listening port, of the initiating device to a target mobile device through a page-mode messaging service supported by the digital mobile network system. The initiating mobile device further utilizes and incorporates a unique identification number (e.g., telephone number, PIN

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number, etc.) associated with the target mobile device into the invitation message to locate and contact the target mobile device within the wireless mobile network. Once the initiating mobile device receives a response from the target mobile device at the listening port, the two mobile devices are able to establish a reliable virtual connection through the underlying data packet-based network protocol in order to exchange text messages directly between the two mobile devices through a session-based communication.

Brief Description of the Drawings

FIGURE 1 depicts a diagram of an environment for establishing an IM session in accordance with the present invention between a first mobile device and a second mobile device in a GSM mobile network system supporting GPRS as a data packet-based communications service, SMS as a text messaging service, and TCP/IP as an underlying data packet based network protocol.

FIGURE 2 depicts a flow chart for establishing a peer-to-peer session-based IM system in accordance with the present invention.

Detailed Description of the Invention

Figure 1 depicts one environment to deploy an embodiment of the present invention. As depicted, the underlying digital mobile network system in this environment is the Global System for Mobile communications (GSM) **100** standard. Under the GSM standard, each of the mobile devices **105** and **110** includes a Subscriber Information Module (SIM) card that contains unique identification information that enables the GSM system to locate the mobile devices within the network and route data to them. A current commercial example of a mobile device (e.g., smartphone, PDA, handheld, etc.) that might be used in **Figure 1** could be Research In Motion's (RIM) BlackBerry handheld devices, which includes a QWERTY keyboard to facilitate the typing of text. As depicted, a GSM architecture includes the following components: base transceiver stations (BTS) **115** and base station controllers (BSC) (**120A** or **120B**) for managing the transmission of radio signals between the MSC (defined below) and the mobile devices, mobile service-switching centers (MSC) (**125A** and **125B**) for performing the all switching functions and controlling calls to and from other telephone and data systems, a home location register (HLR) **130** for containing all the administrative, routing and location information of each subscriber registered in the network, visitor location registers (VLR) (**135A** and **135B**) for containing selected administrative information about subscribers registered in one HLR who are roaming in a another HLR, and an equipment identity register (EIR) (not shown) for containing a list of all valid mobile equipment on the network). As depicted in **Figure 1**, in one architecture of a GSM network, there may be exist one HLR while there may exist multiple MSCs (each with a related VLR) which each serves a different geographic area. The MSCs also provide the interface for the GSM network to

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more traditional voice networks **170** such as the PSTN. This underlying GSM architecture provides radio resources management (e.g., access, paging and handover procedures, etc.), mobility management (e.g., location updating, authentication and security, etc.), and communication management (e.g., call routing, etc.) in order to enable mobile devices in the GSM network to send and receive data through a variety of services, including the Short Message Service (SMS), an asynchronous bi-directional text messaging service for short alphanumeric messages (up to 160 bytes) that are transported from one mobile device to another mobile device in a store-and-forward fashion.

A GSM network within which the present invention may be deployed would also support a page-mode messaging service, such as SMS, that relies upon the underlying GSM mechanisms to resolve routing information in order to locate destination mobile devices. Page-mode messaging services such as SMS transmit messages that are independent or asynchronous with each other, but there is no formal relationship between one message and another. In contrast, an IM session that is implemented in accordance with the present invention is a session-mode or session-based messaging service where exchanged messages are formally associated in a session thereby minimizing the overhead costs of transmitting independent messages. A GSM network supporting SMS text messaging may further include the following SMS specific components: a short message service center (SMSC) (**140A** or **140B**) for storing and forwarding messages to and from one mobile device to another, an SMS Gateway-MSC (SMS GMSC) for receiving the short message from the SMSC (**140A** or **140B**) and interrogating the destination mobile device's HLR **130** for routing information to determine the current location of the destination device to deliver the short message to the appropriate MSC (**125A** or **125B**). The SMS GMSC is typically integrated with the SMSC **140**. In a typical transmission of an SMS text message from an originating mobile device **105** to a receiving mobile device **110**, (i) the text message is transmitted from the mobile **105** to the MSC **125A**, (ii) the MSC **125A** interrogates its VLR **135A** to verify that the message transfer does not violate any supplementary services or restrictions, (iii) the MSC **125A** sends the text message to the SMSC **140A**, (iv) the SMSC **140A**, through the SMS GMSC, interrogates the receiving mobile device's HLR **130** (by accessing the SS7 network) to receive routing information for the receiving mobile device **110**, (v) the SMSC sends the text message to the MSC **125B** servicing receiving mobile device **110**, (vi) the MSC **125B** retrieves subscriber information from the VLR **135B**, and (vii) the MSC **125A** transmits the text message to the receiving mobile device **110**. Similar to other transactions on the GSM network, SMS text messaging utilizes telephone numbers as identifying addresses for mobile devices and as such, utilizes the SS7 network signaling system through which cellular service providers share information from the HLR with other service providers. As depicted in **Figure 1**, SS7 based signaling communication is represented by the broken lines. In contrast, the solid lines in **Figure 1** represent data or voice based communications.

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In addition to a page-mode messaging service such as SMS, a GSM network within which the present invention may be deployed would also support a data packet based communications service, such as the General Packet Radio Service (GPRS), that enables TCP/IP transmission protocol based communications between mobile devices within the network. As depicted in **Figure 1**, a core GPRS network exists in parallel to the existing GSM core network. The BSC **120** may direct voice traffic through the MSC (**125A** or **125B**) to the GSM network and data traffic through the Serving GPRS Support Note (SGSN) (**145A** or **145B**) to the GPRS network. Such communication between the BSC (**125A** or **125B**) and the SGSN (**145A** or **145B**) may be, for example, based upon the IP network protocol communication **155**. As such, GPRS signaling and data traffic do not flow through the core GSM network. Instead, the core GSM network is used by GPRS only for table look-up in the HLR **130** and VLR (**135A** or **135B**) to obtain routing, location and other subscriber information in order to handle user mobility. The SGSN (**145A** or **145B**) serves as a "packet-switched MSC," delivering data packets to mobile devices in its service area. The Gateway GPRS Support Note (GGSN) (**150A** or **150B**) communicates with the SGSN (**145A** or **145B**) through an IP based GPRS backbone **160** and serves as an interface to other external IP networks **165** such as the Internet and other mobile service providers' GPRS services.

When an IM service is offered in a traditional online packet based network environment such as the Internet, the initiating computer must have knowledge of the IP address (and possibly, a port) that has been opened on the listening computer to receive IM communications. In order to provide such IP address information, an IM service will set up a log-on or registration server through which end users can record the IP address on which they are currently listening for instant messaging communications. Because all end users have access to (i.e., know the IP address of) the registration server, they are able to obtain the IP addresses of other end users who have also logged-on or registered on the server and thereby initiate IM sessions directly with another end user's computer. Alternatively, the log-on or registration server may serve as a forwarding agent between the two end users engaged in an instant messaging session.

In contrast, in accordance with the present invention, a log-on or registration server for IM or presence purposes can be eliminated on a mobile network environment such as that depicted on **Figure 1**. Through the use of a page-mode messaging service, such as SMS, which transmits messages to mobile devices based upon their telephone numbers, an initiating mobile device can transmit its IP address (and a listening port) in an invitation message to a target mobile device through the target device's telephone number. Once the target device receives the invitation message, it is able to contact the initiating mobile device through the received IP address and the two devices can establish a reliable virtual connection, such as a TCP connection, for session-based IM communications. **Figure 2** depicts a flow chart depicting the steps taken by an initiating and target mobile device to establish an IM session in accordance with the present invention.

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Initially, the initiating mobile device opens a TCP port to listen for communications from the target mobile device **210**. The target mobile device has also similarly opened an SMS listening port to receive invitation SMS text messages at the specified SMS port **220**. The initiating mobile device then transmits its IP address (and TCP port) in an invitation SMS text message to the telephone phone number and a specified SMS port of the target mobile device **230**. The target mobile device receives the SMS text message containing the initiating mobile device's IP address (and TCP port) at the specified SMS port **240**. The target mobile device extracts the IP address and TCP port from the SMS text message and opens its own TCP port **250**. The target mobile device then transmits a request to establish a TCP connection to the initiating mobile device's IP address and TCP port **260**. The initiating mobile device receives this request **270** and a TCP connection is established between the IP addresses and TCP ports of the initiating and listening mobile devices and these devices are able to engage in an IM session over a reliable virtual connection **280**.

While the foregoing detailed description has described the present invention using SMS, GSM, GPRS, and TCP/IP, other similar services and protocols may be used in a variety of similar environments in which the present invention may be implemented. For example and without limitation, rather than using SMS to transmit an IP address (and port) from the initiating mobile device to the listening mobile device through the devices' telephone numbers, an alternative embodiment of the present invention might use a PIN-to-PIN messaging technology (as, for example, offered in RIM's Blackberry handheld devices) to transmit the IP address (and port) through unique PIN numbers associated with the mobile devices, or an alternative paging protocol using telephone numbers. Furthermore, the present invention contemplates that the actual protocol used during an established IM session may also vary depending upon the preference of the implementation. For example and without limitation, Message Session Relay Protocol (MSRP) or any proprietary based protocol may be used during the IM session that is established in accordance with the present invention. Thus, various modifications, additions and substitutions and the like can be made without departing from the spirit of the invention and these are therefore considered to be within the scope of the invention as defined in the following claims.

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What is claimed is:

1. A method of establishing session-based instant messaging communications between mobile devices that support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening port on an initiating mobile device to receive communications through the data packet-based communications service;

transmitting an invitation message containing the address and the listening port of the initiating mobile device to a target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving a response from the target mobile device at the listening port on the initiating wireless device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device.

2. The method of claim 1 further comprising:

opening a second listening port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains the address and listening port of the other mobile device; and

transmitting a response to the address and listing port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

3. The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

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5. The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening port is a TCP port.

6. The method of claim 1 wherein the page-mode messaging service is SMS.

7. The method of claim 1 wherein the page-more messaging service is a PIN-to-PIN messaging service.

8. The method of claim 1 wherein the unique identification number is a telephone number.

9. The method of claim 1 wherein the unique identification number is a PIN number.

10. The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

12. A mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising:

programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening port to receive communication through the data packet-based communications service;

programming means to send an invitation message containing the address and the listening port of the mobile device to a target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening port; and

programming means to establish a virtual connection through the data packet-based communications service for session-based instant messaging communications between the mobile device and the target mobile device.

13. The mobile device of claim 12 further comprising:

Apple Inc.
Ex. 1004 - Page 12

programming means to open a second listening port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein such message contains the address and listening port of the other mobile device; and

programming means to transmit a response to the address and listing port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

14. The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

15. The mobile device of claim 12 further comprising a QWERTY keyboard.

16. The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening port is TCP port.

17. The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. A computer program for establishing a session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program comprising program code means for performing all the steps of claim 1 when the program is run on a computer.

23. The computer program of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. The computer program of claim 22 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

Apple Inc.
Ex. 1004 - Page 13

25. The computer program of claim 22 wherein the address of the initiating mobile device is an IP address and the listening port is a TCP port.

26. The computer program of claim 22 wherein the page-mode messaging service is SMS.

27. The computer program of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. The computer program of claim 22 wherein the unique identification number is a telephone number.

29. The computer program of claim 22 wherein the unique identification number is a PIN number.

30. The computer program of claim 22 wherein the virtual connection is a TCP connection.

Apple Inc.
Ex. 1004 - Page 14

Abstract

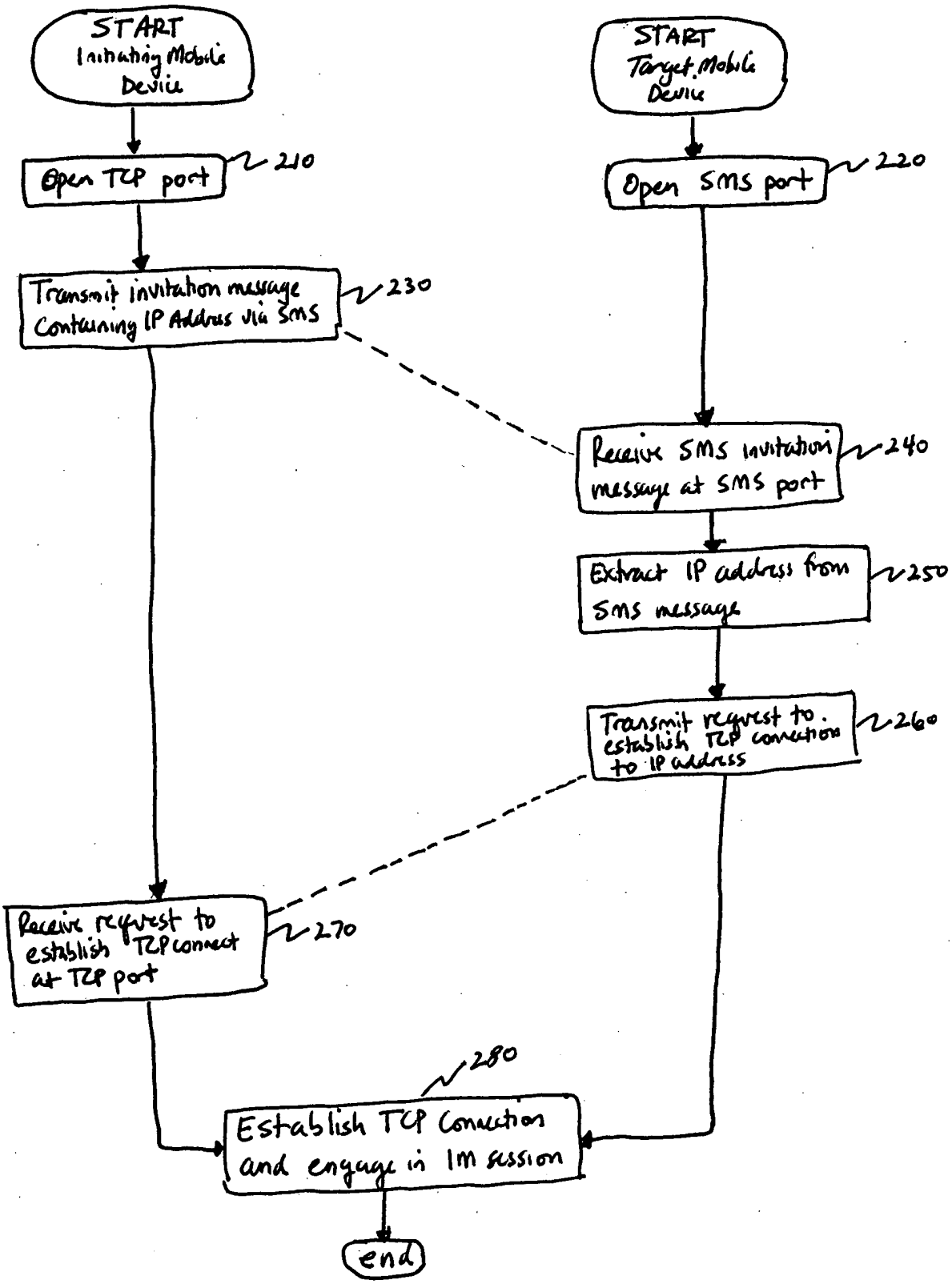
A technique is provided for establishing peer-to-peer session-based instant messaging between mobile devices without the need for using an instant messaging registration or log-in server to provide presence information. Session-based instant messaging communications between mobile devices are established by transmitting necessary address information through page-based messaging services that utilize the underlying digital mobile network databases and services to resolve the identification and location of the mobile devices.

Apple Inc.
Ex. 1004 - Page 15

100
110
105
120
115
Voice Network
BSC
120B
120A
MSC
125B
125A
SMSC
140B
140A
VLR
135B
135A
HLR
130
SGSN
145B
145A
GGSN
150B
150A
160
155
IP Network
165

Figure 1

Figure 2


START
Initiating Mobile Device
START
Target Mobile Device
Open TCP port
210
Open SMS port
220
Transmit invitation message Containing IP Address via SMS
230
Receive SMS invitation message at SMS port
240
Extract IP address from SMS message
250
Transmit request to establish TCP connection to IP address
260
Receive request to establish TCP connect at TCP port
270
280
Establish TCP Connection and engage in IM session
end

PTO/SB/01 (08-03)
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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted With Initial Filing **OR** ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	DTL-1
First Named Inventor	DANIEL J LIN
COMPLETE IF KNOWN	
Application Number	
Filing Date	April 5, 2004
Art Unit	
Examiner Name	

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Peer-to-Peer Mobile Instant Messaging Method and Device

(Title of the Invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) ☐ as United States Application Number or PCT International Application Number ☐ and was amended on (MM/DD/YYYY) ☐ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? Yes	Certified Copy Attached? No
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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DECLARATION — Utility or Design Patent Application

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Name: DANIEL J LIN

Address: 240 LOMBARD STREET #839

City	State	ZIP
SAN FRANCISCO	CA	94111

Country	Telephone	Fax
USA	415-956-3005	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
DANIEL J	LIN

Inventor's Signature	Date
Daniel Lin	4-03-04

Residence: City	State	Country	Citizenship
SAN FRANCISCO	CA	USA	USA

Mailing Address: 240 LOMBARD STREET #839

City	State	ZIP	Country
SAN FRANCISCO	CA	94111	USA

NAME OF SECOND INVENTOR: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname

Inventor's Signature	Date

Residence: City	State	Country	Citizenship

Mailing Address

City	State	ZIP	Country

☐ Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	
Filing Date	April 5, 2004
First Named Inventor	DANIEL J LIN
Art Unit	
Examiner Name	
Attorney Docket Number	OSL-1

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 2003/0126213 A1	07-03-2003	Boas Betzler	
		US-			
		US-			
		US-			
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
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FEE RECORD SHEET

04/07/2004 EFLORES 00000077 10817994

01 FC:2001 385.00 OP
02 FC:2202 90.00 OP

Refund Ref:
04/07/2004 EFLORES 0000135411

CHECK Refund Total: $180.00

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002 — 489-267/69033

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number: 10817994

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	30	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	30 minus 20=	* 10
INDEPENDENT CLAIMS	3 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	385.00	OR	BASIC FEE	770.00
XS 9=	90	OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL		OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A	(Column 1)		(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

1 12 -12

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B	(Column 1)		(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
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Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
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X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1)		(Column 2)	(Column 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

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FACSIMILE COVER SHEET

DATE:	March 15, 2005
FILE NO:	LIN/0002 (DLJ-1)
TO:	
FAX NO:	703.872.9306
PHONE NO:	
COMPANY:	USPTO
FROM:	Frederick Kim
PAGE(S) with cover:	3
ORIGINAL TO FOLLOW?	☐ YES ☒ NO

POWER OF ATTORNEY AND CORRESPONDENCE ADDRESS INDICATION FORM

TITLE:	**Peer-to-Peer Mobile Instant Messaging Method and Device**
U.S. SERIAL NO.:	**10/817,994**
FILING DATE:	**4/5/04**
INVENTOR:	**Daniel J. Lin**
EXAMINER:	**Unknown**
GROUP ART UNIT:	**2681**
CONFIRMATION NO.:	**6700**

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PAGE 1/3 * RCVD AT 3/15/2005 2:08:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/2 * DNIS:8729308 * CSID:6503302314 * DURATION (mm-ss):01-22

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Total Number of Pages in This Submission	2

Application Number	10/817,994
Filing Date	4/5/04
First Named Inventor	Daniel J. Lin
Art Unit	2681
Examiner Name	Unknown
Attorney Docket Number	LIN/0002 (DLJ-1)

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ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☒ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) ____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm	Moser Patterson & Sheridan, LLP		
Signature	Frederick Kim		
Printed Name	Frederick Kim		
Date	March 15, 2005	Reg. No.	38,513

CERTIFICATE OF TRANSMISSION/MAILING

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Signature	Frederick Kim		
Typed or printed name	Frederick Kim	Date	March 15, 2005

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Application Number	10/817,994
Filing Date	4/5/04
First Named Inventor	Daniel J. Lin
Title	Peer-to-Peer Mobile Instant Messaging Method and Device
Art Unit	2681
Examiner Name	Unknown
Attorney Docket Number	DJL-1

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Name	Registration Number

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I am the:

☒ Applicant/Inventor.

☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature	Dan L	Date	3/14/05
Name	Daniel J. Lin	Telephone	415.956.3005
Title and Company	Applicant/Inventor		

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin §
§
Serial No.: 10/817,994 §
§
Filed: 4/5/04 §
§
For: Peer-to-Peer Mobile Instant Messaging Method and Device §

Confirmation No.: 6700

Group Art Unit: 2681

Examiner: Unknown

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING 37 CFR 1.8

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3/18/05 Frederick Kim
Date Frederick Kim

Dear Sir:

SUBMISSION OF FORMAL DRAWINGS

Attached please find two sheets of formal drawings, with gummed labels identifying the application for which they are submitted. The Examiner is requested to substitute these formal drawings for the informal drawings used during the prosecution of the subject patent application.

Any comparison fee should be charged to Deposit Account No. 20-0782/LIN/0002/FK. Two copies of this document are enclosed for your convenience. If any additional informalities are identified by the Examiner, please contact the undersigned attorney at (650) 330-2310.

Respectfully submitted,

Frederick Kim

Frederick Kim
Registration No. 38,513
MOSER, PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
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Attorney for Applicant

Apple Inc.
Ex. 1004 - Page 26

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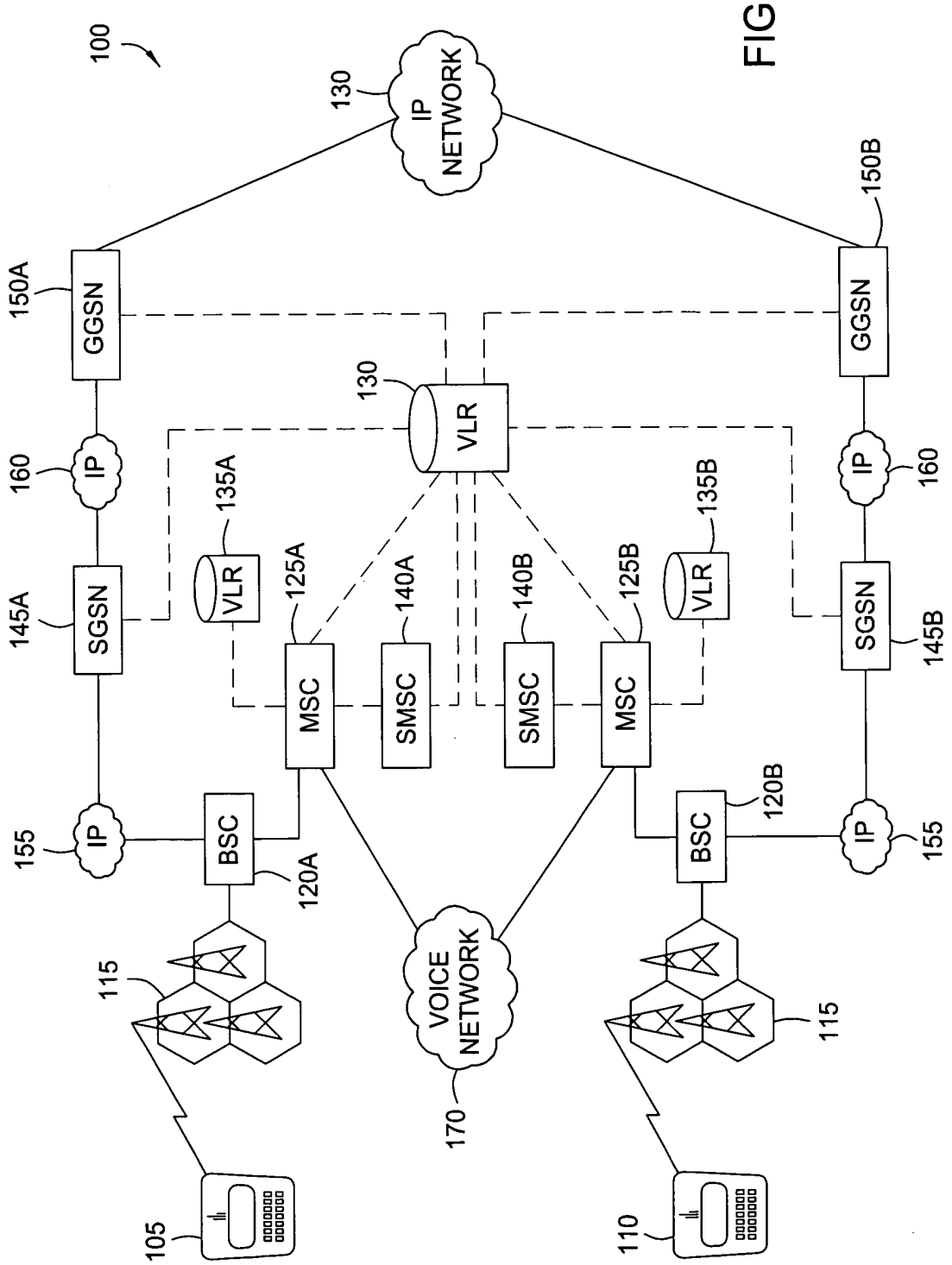
1/2

FIG. 1



2/2

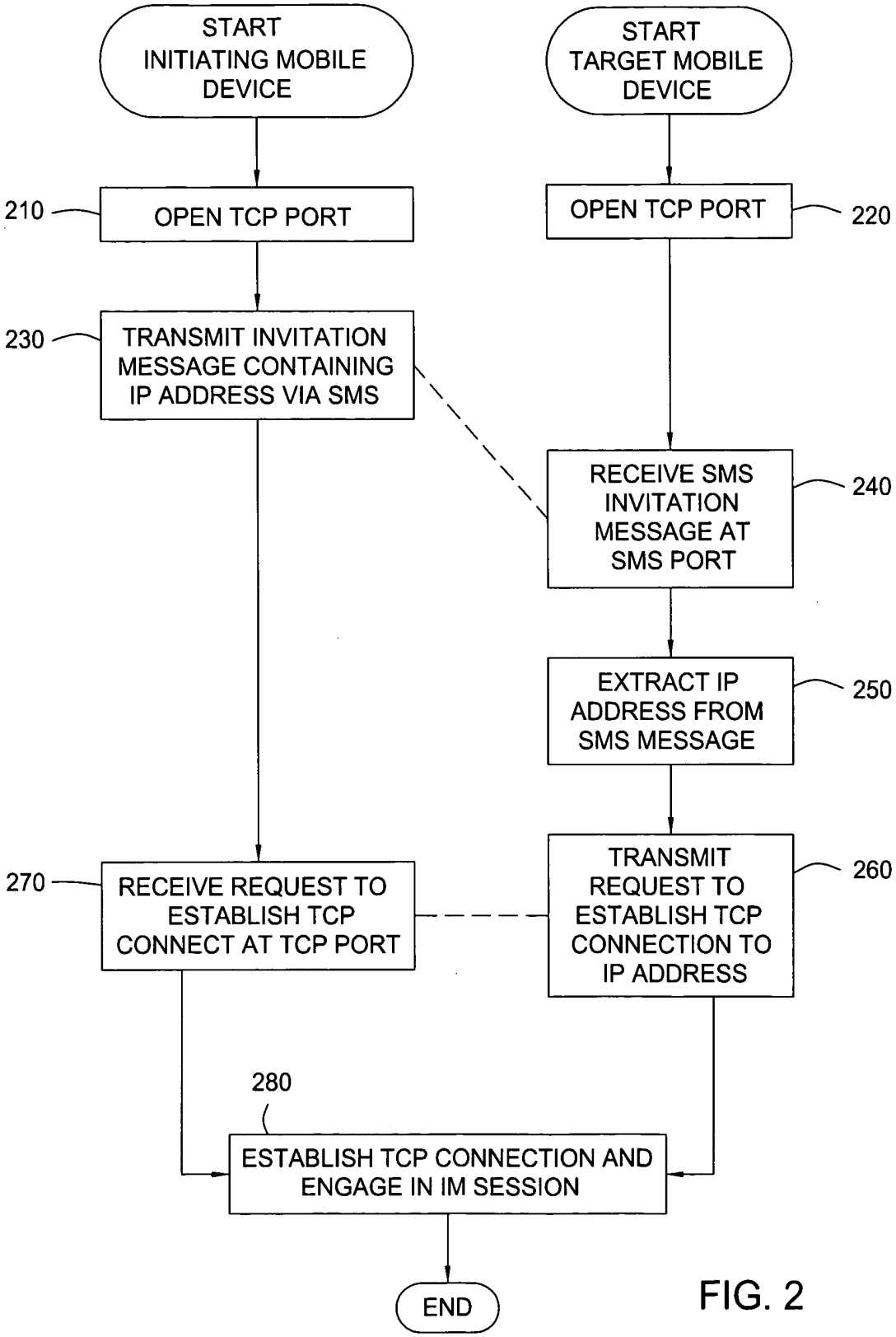

START INITIATING MOBILE DEVICE
START TARGET MOBILE DEVICE
210
OPEN TCP PORT
OPEN TCP PORT
220
230
TRANSMIT INVITATION MESSAGE CONTAINING IP ADDRESS VIA SMS
RECEIVE SMS INVITATION MESSAGE AT SMS PORT
240
EXTRACT IP ADDRESS FROM SMS MESSAGE
250
270
RECEIVE REQUEST TO ESTABLISH TCP CONNECT AT TCP PORT
TRANSMIT REQUEST TO ESTABLISH TCP CONNECTION TO IP ADDRESS
260
280
ESTABLISH TCP CONNECTION AND ENGAGE IN IM SESSION
END

FIG. 2

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
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Serial No.: 10/817,994	§	
	§	Examiner: Unknown
Filed: 4/5/04	§	
	§	
For: Peer-to-Peer Mobile Instant Messaging Method and Device	§	

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CERTIFICATE OF MAILING 37 CFR 1.8

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Frederick Kim

Dear Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

The Applicant, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

While the information submitted in this Supplemental Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

U.S. provisional patent applications 60/503,366 and 60/503,367 are submitted herewith, because they have filing dates that are prior to the filing date of the present application and a U.S. application that claims priority to them, U.S. Patent Publication 2005/0058094, has published. U.S. Patent Publication 2005/0058094 is not being

submitted herewith because its filing date (September 16, 2004) is after the filing date of the present application and is thus not prior art to the present application.

In accordance with 37 CFR § 1.97, this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-SB08a.

In accordance with 37 C.F.R. §1.97(b)(3), this Supplemental IDS is being filed before the mailing of the first office action on the merits. Thus, a fee is not required for the Supplemental IDS.

Respectfully submitted,

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(Use as many sheets as necessary)

Sheet 1 of 1

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Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 60/503,366	filed 9/16/03	Klassen	
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	3	US- 2005/0021645 A1	01-27-2005	Kulkami et al.	
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FOREIGN PATENT DOCUMENTS

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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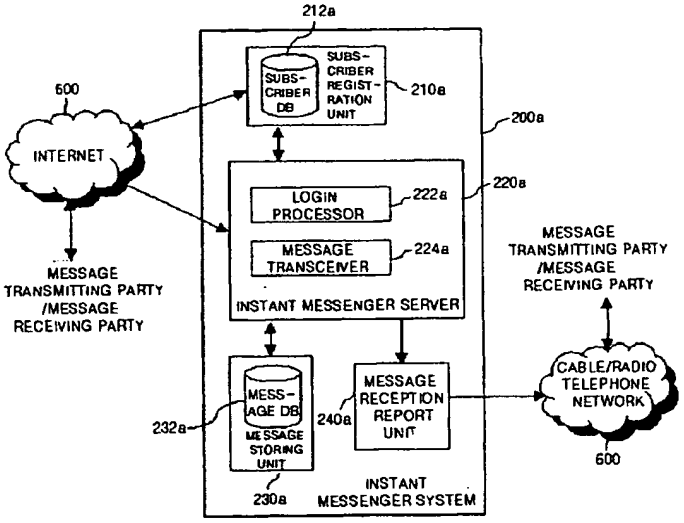
(54) Title: INSTANT MESSENGER SYSTEM AND INSTANT MESSAGE TRANSFER METHOD USING PHONE NUMBER AS INSTANT MESSENGER ADDRESS



(57) Abstract: An instant messenger system and a method for transmitting an instant message can use cable and radio telephone numbers as instant messenger addresses to access to an instant messenger service without any registration procedure. The instant messenger system includes: a message storing unit for in advance setting instant messenger accounts having a phone number of each user as an instant messenger address and storing a message received for each instant messenger account; an instant messenger server for receiving the message from a message transmitting party in login state and transmitting the message to a message receiving party in login state; and a message reception report unit for reporting message reception to a message receiving party who is not in login state.

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INSTANT MESSENGER SYSTEM AND INSTANT MESSAGE TRANSFER METHOD USING PHONE NUMBER AS INSTANT MESSEGNER ADDRESS

TECHNICAL FIELD

The present invention relates to an instant messenger system and a method for transmitting an instant message, and more particularly, to an instant messenger system and a method for transmitting an instant message in which cable and radio telephone numbers are used as instant messenger addresses for a user to access to an instant messenger service without any registration procedure.

BACKGROUND ART

An instant messenger service can permit users on on-line to instantly exchange messages with one another, and is to supplement a drawback of an electronic mail (E-mail) service that requires much time in transmitting and confirming messages. Even in case where a transmitting party and a receiving party of E-mail are provided with E-mail accounts from different service providers, they can mutually exchange messages. However, in the instant messenger service, a message transmitting party and a message receiving party should be registered with an instant messenger service provided by the same service

provider.

In the instant messenger service, instant messenger addresses of a transmitting party and a receiving party are not determined by a predetermined rule but arbitrarily determined by a user when an instant messenger account is issued to the user. Each user's instant messenger address should be unique in a specific instant messenger service. Accordingly, if a user's desired address has been already assigned to another user in the specific instant messenger service, the user should choose another address. For this reason, it is difficult for the message transmitting party to exactly know an instant messenger address of a message receiving party.

Furthermore, a user can use such an instant messenger service only when he/she accesses a web page of a corresponding service provider, registers himself/herself as a member, and is issued with an instant messenger account. In this case, it is difficult for an instant messenger service provider to secure a large number of subscribers, and it is inconvenient for a user to go through the registration procedure.

Under the circumstances, an instant messenger system that allows users to be issued with instant messenger accounts without any registration procedure will be

convenient for both the users and an instant messenger service provider. Also, an instant messenger system that can transmit a message to an unregistered user will be useful.

Meanwhile, cellular phones have been spread as much widely as the Internet. Currently, many people have a cellular phone, and it is expected that almost all adults can have a cellular phone in the near future in accordance with the development of personal communication service technology. However, according to conventional technology, the message transmitting party cannot transmit an instant message to the message receiving party when the one cannot know the other's instant messenger address even if the one knows the other's cellular phone number. Accordingly, an instant messenger system that can know an instant messenger address of a message receiving party if a message transmitting party knows a cellular phone number of the message receiving party will be very useful.

DISCLOSURE OF THE INVENTION

Accordingly, the present invention is directed to an instant messenger system and a method for transmitting an instant message that substantially obviate one or more of the problems due to limitations and disadvantages of the

related art.

An object of the present invention is to provide an instant messenger system and a method for transmitting an instant message in which a message transmitting party can transmit an instant message to a message receiving party if the one knows the other's phone number, regardless of the fact whether the message receiving party has been registered with the instant messenger system, and a phone number used for confirming the reception of an instant message when the instant message is received in a corresponding account is also used as an instant messenger address.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims thereof as well as the appended drawings.

To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, an instant messenger system using a phone number as an instant messenger address

includes: a message storing unit for in advance setting instant messenger accounts having a phone number of each user as an instant messenger address for latent instant messenger service users and storing a message received for each instant messenger account; an instant messenger server for receiving the message from a message transmitting party in login state to store the received message in the message storing unit and transmitting the message stored in the message storing unit to a message receiving party in login state; and a message reception report unit for reporting message reception to a message receiving party who is not in login state, through a phone number of the message receiving party.

To further achieve these and other advantages and in accordance with the purpose of the present invention, an instant messenger system using a phone number as an instant messenger address includes: a message storing unit for storing a message received for each instant messenger account; an instant messenger server for receiving the message from a message transmitting party in login state, dynamically generating an instant messenger account corresponding to a phone number of a message receiving party to store the received message in the message storing unit, and transmitting the message stored in the message

storing unit to a message receiving party in login state; and a message reception report unit for reporting message reception to a message receiving party who is not in login state, through the phone number of the message receiving party.

To further achieve these and other advantages and in accordance with the purpose of the present invention, a method for transmitting an instant message using a phone number as an instant messenger address, includes the steps of: (a) generating instant messenger accounts having a phone number of each user as an instant messenger address for latent instant messenger service users; (b) receiving login data including a phone number and a password from a message transmitting party to process logging in, and receiving a message from the message transmitting party; (c) generating a password at random for a message receiving party who is not registered with an instant messenger system, and reporting the password together with message reception to the message receiving party through a phone number of the message receiving party included in the received message; and (d) receiving the login data including the phone number and the password, from the message receiving party to process logging in, and transmitting the received message to the message receiving

party.

To further achieve these and other advantages and in accordance with the purpose of the present invention, a method for transmitting an instant message using a phone number as an instant messenger address, includes the steps of: (a) receiving login data including a phone number and a password from a message transmitting party to process login, and receiving a message from the message transmitting party; (b) dynamically generating an instant messenger account using a phone number of a message receiving party included in the received message as an instant messenger address; (c) generating a password at random for a message receiving party who is not registered with an instant messenger system, and reporting the password together with message reception to the message receiving party through the phone number of the message receiving party included in the received message; and (d) receiving the login data including the phone number and the password from the message receiving party to process logging in, and transmitting the received message to the message receiving party.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide

further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

In the drawings:

Fig. 1 is a schematic diagram illustrating an environment in which an instant messenger system according to the present invention is connected with Internet and telephone network;

Fig. 2 is a block diagram showing a configuration of an instant messenger system according to the first embodiment of the present invention;

Fig. 3 is a conceptual diagram illustrating a procedure in which a user accesses to and logs in an instant messenger system according to the present invention;

Figs. 4A and 4B exemplarily show screens on which a user accesses to and logs in an instant messenger system according to the present invention;

Fig. 5 is a flow chart showing a message reception procedure in an instant messenger system according to the present invention; and

Fig. 6 is a block diagram showing a configuration of an instant messenger system according to the second embodiment of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

Referring to Fig. 1, reference numeral 100 represents a user terminal, and reference numeral 200 represents an instant messenger system of the present invention. Reference numeral 300 represents a cellular phone, and reference numeral 400 represents a base station. Also, reference numeral 500 represents Internet, and reference numeral 600 conceptually represents a telephone network including a mobile telephone network and a cable telephone network.

The Internet 500 means a worldwide computer communication network which uses transmission control protocol/internet protocol (TCP/IP). In a broad sense, the Internet 500 includes cable and radio communication

networks linked with the Internet to access to the user terminal 100.

The user terminal 100 is provided with a web browser (not shown) which is a software used for reading hypertext markup language (HTML) documents that are standard documents of a web, and communicating with a web server using a hypertext transfer protocol (HTTP). Also, the user terminal 100 downloads an instant messenger program (not shown) from the instant messenger system 200, and puts the instant messenger program linked with the instant messenger system 200 into execution. However, the user terminal 100 of the present invention is not limited to the above functions. In the present invention, the user terminal 100 can be provided a web browser (not shown) for reading a wireless markup language (WML) document and supporting wireless application protocol (WAP). Examples of the user terminal 100 include a personal digital assistant (PDA) and a cellular phone.

As shown in Fig. 1, the instant messenger system 200 of the present invention can transmit data to the cellular phone 300 through a mobile telephone network after passing through a cable telephone network. Alternatively, the instant messenger system 200 can be connected to the cellular phone 300 through a mobile telephone network.

An instant messenger system using a cellular phone number as an instant messenger address in accordance with the first embodiment of the present invention will now be described with reference to Fig. 2. Referring to Fig. 2, an instant messenger system 200a of the present invention includes a subscriber registration unit 210a, an instant messenger server 220a, a message storing unit 230a, and a message reception report unit 240a. In the first embodiment of the present invention, for convenience of description, it is supposed that a cellular phone number is used as an instant messenger address. However, a phone number used in the present invention is not limited to a cellular phone number. That is, cable/radio phone numbers assigned to a user can be used as a phone number. Also, in the first embodiment of the present invention, it is supposed that accounts for cellular phone users who are latent users of the instant messenger system 200a have been already generated.

The subscriber registration unit 210a receives subscriber registration data, such as a user name, an address, a cellular phone number, and a password, from a user accessed to the instant messenger system 200a through the Internet. Then, the subscriber registration unit 210a stores the received subscriber registration data in a

subscriber data base (DB) 212a to complete a registration procedure. The subscriber registration data of latent cellular phone users are stored in the subscriber DB 212a. In this case, an area where corresponding subscriber registration data of cellular phone users who are not registered with the instant messenger system will be stored, remains empty in the subscriber DB 212a.

The instant messenger server 220a receives a message from a message transmitting party in login state and stores it in the message storing unit 230a. Then, the instant messenger server 220a transmits the message stored in the message storing unit 230a to a message receiving party in login state. The instant messenger server 220a includes a login processor 222a and a message transceiver 224a.

The login processor 222a receives a cellular phone number and a password from a user accessed to the instant messenger system through the Internet to process logging in. At this instance, if the user does not know the password, the login processor 222a transmits the password generated at random to the user using the cellular phone number input by the user and authenticates the user by receiving the phone number and the transmitted password. If authentication of the user is completed, the login processor 222a downloads an instant messenger program to

the user terminal 100. The instant messenger program is executed by the user terminal 100 and provides the user with a user interface that can input a message. The instant messenger program transmits the input message to the instant messenger system 200a under the login state and receives the message for the message receiving party from the instant messenger system 200a to output the message to the user.

The message transceiver 224a is linked with the instant messenger program downloaded to the user terminal 100 and receives the message input by the user from the message transmitting party in login state. Also, the message transceiver 224a transmits the received message to the user terminal 100 of the message receiving party if the message receiving party is in login state.

For latent instant messenger service users, the message storing unit 230a in advance sets instant messenger accounts having a cellular phone number of each user as an instant messenger address. In other words, an instant messenger account such as <cellular phone number> is generated for each cellular phone user. For example, if a cellular phone number of an arbitrary user is 011-123-4567, an instant messenger account of this user is "0111234567".

Meanwhile, the instant messenger server 220a of the

present invention is preferably implemented to correctly recognize a corresponding instant messenger address even if the user inputs the instant messenger address including "-", such as "011-123-4567" and "011-1234567", without inputting numerals only. The message received for each instant messenger account is stored in the message DB 232a of the message storing unit 230a.

The message reception report unit 240a reports message reception to a message receiving party who is not in login state. That is to say, the message reception report unit 240a extracts a cellular phone number of the message receiving party included in the received message as an instant messenger address and reports message reception to the message receiving party through the cable/radio telephone network 600 using the extracted cellular phone number. To report message reception, the message reception report unit 240a may include a general cable phone interface, or a cellular phone interface directly connected to a cellular phone network. Alternatively, the message reception report unit 240a may be configured such that a message is not transmitted to the cellular phone through the cable/radio telephone network 600, but transmitted to the cellular phone 300 through the Internet 500, a gateway (not shown) to a cellular phone network and the cellular

phone network. The message reception report unit 240a randomly generates a password to authenticate the unregistered message receiving party who is in login state. The generated password is transmitted to the cellular phone 300 corresponding to the receiving party's cellular phone number extracted from the received message, together with a short message.

Meanwhile, in the embodiment in which the instant messenger address included in the message includes the cable phone number of the message receiving party not the cellular phone number of the message receiving party, the message reception report unit 240a generates a password and synthesizes the generated password and a message indicative of message reception to generate audio data. Then, the message reception report unit 240a transmits the audio data to a terminal unit (not shown) corresponding to the cable phone number of the message receiving party through the cable/radio telephone network 600.

A procedure of transmitting a message using the instant messenger system 200a of Fig. 2 will now be described in detail with reference to Fig. 3.

In the instant messenger system 200a of Fig. 2, even in case where a user is not registered with the instant messenger system, a user account is already issued but a

password is not registered. In this case, anyone may log in the instant messenger system 200 to transmit a message in the name of another person. Accordingly, if a user who is not registered with the instant messenger system 200a desires to transmit a message using the instant messenger system 200a, the user is subject to user authentication procedures as follows.

First, the user accesses to a home page of the instant messenger system 200a through the Internet 500 using his/her own terminal 100 in step S110. Then, the instant messenger system 200a sends a login screen to the user terminal 100 in step S120.

Fig. 4A exemplarily shows a login screen of the instant messenger system 200a. In case of a user registered with the instant messenger system 200a, the user can log in the instant messenger system 200a by inputting his/her cellular phone number and password.

While in case of a user who is not registered with the instant messenger system 200a, the user can input his/her cellular phone number but cannot input a password because the password has not been determined. Accordingly, in this case, the user inputs his/her cellular phone number only and then clicks a confirmation button in step S130. Alternatively, a "NEW REGISTRATION" button may be provided

in the login screen. Thus, the user presses the "NEW REGISTRATION" button, so that the instant messenger system 200a can transmit a screen to instruct input of the cellular phone number to the user terminal 100.

If the unregistered user inputs his/her cellular phone number, the instant messenger system 200a sends a screen exemplarily shown in Fig. 4B to the user terminal 100 and randomly generates a password to transmit the password to a corresponding cellular phone in a short message in step S150.

Since an authentic cellular phone user can confirm the password generated by the instant messenger system 200a through his/her cellular phone 300, the user can formally log in the instant messenger system 200a. However, if anyone who is not the authentic cellular phone user accesses to the instant messenger system 200a and inputs another person's cellular phone number, the person cannot know a password transmitted to a cellular phone corresponding to the input cellular phone number. Accordingly, it is possible to prevent anyone from being accessed to another person's account without permission.

Meanwhile, if anyone who is not the authentic cellular phone user accesses to the instant messenger system and inputs another person's cellular phone number to

generate a password, the password is transmitted to a corresponding cellular phone 300 in the same manner as step S150. At this time, the authentic cellular phone user may not be interested in the transmitted password or may forget the password. In such case, the instant messenger system 200 recognizes the authentic cellular phone user as a registered user. Accordingly, when this cellular phone user accesses to the instant messenger system 200a to use the instant messenger service, the one cannot log in the instant messenger system 200a if the one does not input the password previously transmitted to his/her cellular phone. For this reason, it is preferable that an "AUTOMATIC PASSWORD CHANGE" button is provided in the home page of the instant messenger system 200a, so that the user of the instant messenger system 200a can automatically change the password of the input cellular phone number by selecting the button. If the password is changed, the instant messenger system 200a transmits a new password to the cellular phone 300 of the user. Then, the user can log in the instant messenger system 200a using the new password.

If the authentic user is in login state in the instant messenger system 200a, the instant messenger system 200a downloads an instant messenger program to the user terminal 100. The user installs the instant messenger

program in his/her terminal 100 in step S160 and inputs a message using the instant messenger program to transmit the message to the instant messenger system 200a.

When a message has been received in the cellular phone user, a procedure of reporting message reception to the message receiving party through the instant messenger system 200a of Fig. 2 will be described in detail with reference to Fig. 5.

The instant messenger server 220a always checks message reception in step S200. If the message is received in the instant messenger server 220a, the instant messenger system 200a checks whether the message receiving party is a registered user in step S210. The registered user means a user who knows a preset password.

If the message is received, the instant messenger system 200a reports message reception to the user. To confirm the received message, it is preferable to allow the user to input a password registered in a corresponding account in view of security. However, a password is not registered in an account of an unregistered user. Accordingly, when a message is received in the account of the unregistered user for the first time, the instant messenger system 200a automatically generates a password so that the user can confirm the message of the corresponding

account only if the user knows the password. As a result of the step S210, if the message receiving party is an unregistered user, the instant messenger system 200a generates a password in step S230. The generated password is transmitted to the cellular phone 300 of the message receiving party together with message reception report in a short message in step S240.

At this time, an example of the short message is as follows.

"You have got a message. You can confirm the message in www.imessage.com, and your ID is your cellular phone number and your password is 3209".

Meanwhile, if the received message is within the number of characters (for example, 40 characters) that can be represented in a short message, in lieu of the aforementioned short message, the received message can directly be included in a short message. Also, even if the received message exceeds the number of characters that can be represented in a short message, some contents (for example, first 20 characters) of the message can be included in the short message.

By the aforementioned manner, the user can recognize that it has got a message. Afterwards, even if the whole message transmitted from the message transmitting party

does not appear in the short message, the message receiving party can confirm the whole text of the received message by accessing to the web site of the instant messenger system 200a using the user terminal 100 and then inputting his/her cellular phone number and password.

As described above, the message receiving party can receive the instant message transmitted thereto even though he/she separately does not register with the instant messenger system 200a.

In the step S210, if the message receiving party is a registered user, the steps of generating a password and transmitting it may be omitted because the message receiving party knows the password. However, even if the message receiving party is a registered user, the message receiving party cannot receive a message unless he/she is in login state in the instant messenger system 200a. Therefore, in the present invention, it is checked whether the message receiving party is in login state in the instant messenger system 200a in step S220.

If the message receiving party is in login state, the received message is directly transmitted to the message receiving party through the instant messenger server 220a in step S250. If the message receiving party is not in login state, it is impossible to transmit the message

through the instant messenger server 220a. Accordingly, a short message indicative of message reception is transmitted to the cellular phone 300 of the message receiving party in step S260. For example, the short message is as follows.

"You have got a message through imessage."

In this case, the whole received message or some of the received message can be transmitted in a short message, as described in the step S240.

Meanwhile, even if the message receiving party is a registered user, it is possible to transmit the registered user's password in a short message together with message reception for the sake of a case that the registered user forgets the password. In this case, the short message is as follows.

"You have got a message through imessage, and your password is 2097."

Since the instant messenger system 200a shown in Fig. 2 should be provided with instant messenger accounts of cellular phone users in advance, instant messenger accounts of cellular phone users who may do not use the instant messenger system 200a at all are assigned. This could lead to a waste of the system resource when the number of users who use the instant messenger system 200a among the

cellular phone users is not great.

Another instant messenger system 200b according to the second embodiment of the present invention will be described with reference to Fig. 6.

Referring to Fig. 6, the instant messenger system 200b using a cellular phone number as an instant messenger address includes a subscriber registration unit 210b, an instant messenger server 220b, a message storing unit 230b, and a message reception report unit 240b. In the same manner as the first embodiment of the present invention, for convenience of description, it is supposed that a cellular phone number is used as an instant messenger address. However, a phone number used in the present invention is not limited to the cellular phone number. That is, cable/radio phone numbers assigned to a user can be used as a phone number. Also, in the second embodiment of the present invention, it is supposed that accounts for cellular phone users who are not registered with the instant messenger system 200b have not been generated, unlike the first embodiment.

The subscriber registration unit 210b receives subscriber registration data, such as a user name, an address, a cellular phone number, and a password, from a user accessed to the instant messenger system through the

Internet. Then, the subscriber registration unit 210b stores the received subscriber registration data in a subscriber DB 212b to complete a registration procedure. Only the subscriber registration data of registered users are stored in the subscriber DB 212b.

The instant messenger server 220b receives a message from a message transmitting party in login state and stores it in the message storing unit 230b. Then, the instant messenger server 220b transmits the message stored in the message storing unit 230b to a message receiving party. At this time, if the message receiving party is not a registered user, the instant messenger server 220b dynamically generates an instant messenger account corresponding to a cellular phone number of the message receiving party. The instant messenger server 220b includes a login processor 222b, a message transceiver 224b, and a dynamic account generator 226b.

The login processor 222b receives a cellular phone number and a password from a user accessed to the instant messenger system 200b through the Internet 500 to process logging in. At this instance, if the user does not know the password, the login processor 222b transmits the password generated at random to the user using the cellular phone number input by the user and authenticates the user by

receiving the phone number and the transmitted password. If authentication of the user is completed successfully, the login processor 222b downloads the instant messenger program to the user terminal 100.

The instant messenger program downloaded to the user terminal 100 is linked with the message transceiver 224b to provide the user with an instant messenger service. That is, the message transceiver 224b is linked with the instant messenger program downloaded to the user terminal 100 and receives a message input by the user using the instant messenger program from the message transmitting party in login state. Also, the message transceiver 224b transmits the received message to the user terminal 100 of the message receiving party if the message receiving party is in login state.

For message transmitting parties or message receiving parties who are not registered with the subscriber registration unit 210b, the dynamic account generator 226b dynamically generates instant messenger accounts corresponding to cellular phone numbers of the message transmitting parties or the message receiving parties. Here, dynamically generating an instant messenger account is issuing an account corresponding to a cellular phone number of either a message receiving party for whom a message is

received or a user who is logging in but not registered with the instant messenger system instead of setting accounts for all usable cellular phone numbers in advance.

For a subscriber account issued by the subscriber registration unit 210b or an account generated dynamically by the dynamic account generator 226b, the message storing unit 230b stores a received message for each instant messenger account in the message DB 232b.

Since the message reception report unit 240b shown in Fig. 6 functions as the message reception report unit 240a shown in Fig. 2, its description will be omitted.

Meanwhile, since a procedure of transmitting a message using the instant messenger system 200b of Fig. 6 is essentially similar to the procedure of Fig. 3, its repeated description will be omitted.

In the instant messenger system 200b shown in Fig. 6, an account is not generated in a state that a user is not registered with the instant messenger system 200b. Accordingly, when the user who is not registered with the instant messenger system 200b desires to transmit a message using the instant messenger system 200b, an account is dynamically generated if the user is authenticated as an authentic cellular phone user. Such a transmitting party account dynamically generated in the message transmitting

step may be released after several days have elapsed, so that the resource of the instant messenger system 200b can be utilized more efficiently.

Furthermore, when a message has been received in the cellular phone user, a procedure of reporting message reception to the message receiving party through the instant messenger system 200b of Fig. 6 is similar to the procedure of Fig. 5. Accordingly, its repeated description will be omitted.

However, in the instant messenger system 200b of Fig. 6, if the message receiving party is not registered with the instant messenger system 200b as a result of the step S210, an instant messenger account corresponding to the cellular phone number of the message receiving party is dynamically generated. The message received in the step S200 and the password generated in the step S230 are stored in the dynamically generated account. Such a receiving party account dynamically generated in the message receiving step may be released after several days have elapsed, so that the resource of the instant messenger system 200b can be utilized more efficiently.

INDUSTRIAL APPLICABILITY

As aforementioned, the instant messenger system and

the method for transmitting an instant message have the following advantages.

Since cellular phone numbers of users are used as instant messenger addresses, the message transmitting party can transmit an instant message to the message receiving party if the one knows the other's cellular phone number. In addition, since an instant messenger account is automatically issued using the cellular phone number, every cellular phone user can use the instant messenger system even without registering with the instant messenger system. Moreover, an instant messenger account is assigned regardless of registration with the instant messenger system, and message reception is reported to the cellular phone of the message receiving party if a message is received in a corresponding account, thereby enhancing convenience in using instant messenger service.

Furthermore, since the instant messenger account is dynamically assigned only if a message is received in the message receiving party and the message transmitting party inputs a message, the resource of the system can be saved.

While the present invention has been described and illustrated herein with reference to the preferred embodiments thereof, it will be apparent to those skilled

in the art that various modifications and variations can be made therein without departing from the spirit and scope of the invention. Thus, it is intended that the present invention covers the modifications and variations of this invention that come within the scope of the appended claims and their equivalents.

WHAT IS CLAIMED IS:

1. An instant messenger system using a phone number as an instant messenger address, comprising:

a message storing unit for in advance setting instant messenger accounts having a phone number of each user as an instant messenger address for latent instant messenger service users and storing a message received for each instant messenger account;

an instant messenger server for receiving the message from a message transmitting party in login state to store the received message in the message storing unit and transmitting the message stored in the message storing unit to a message receiving party in login state; and

a message reception report unit for reporting message reception to a message receiving party who is not in login state, through a phone number of the message receiving party.

2. The instant messenger system of claim 1, wherein the message reception report unit generates a password at random for a message receiving party who is not registered with the instant messenger system, and transmits the password together with the data for reporting message reception to the message receiving party through a phone

number of the message receiving party.

3. The instant messenger system of claim 1, further comprising a subscriber registration unit for receiving subscriber registration data including a phone number and a password, from a user accessed to the instant messenger system through Internet, to implement a registration procedure.

4. The instant messenger system of claim 1, wherein the instant messenger server includes:

a login processor for processing logging in of the user accessed to the instant messenger system through the Internet; and

a message transceiver for receiving a message from the message transmitting party in login state and transmitting the received message to a message receiving party having an instant messenger address included in the received message if the message receiving party is in login state.

5. The instant messenger system of claim 4, wherein the login processor transmits the password generated at random to the user using the phone number input by the user

if the user does not know the password, and authenticates the user by receiving the phone number and the transmitted password.

6. An instant messenger system using a phone number as an instant messenger address, comprising:

a message storing unit for storing a message received for each instant messenger account;

an instant messenger server for receiving the message from a message transmitting party in login state, dynamically generating an instant messenger account corresponding to a phone number of a message receiving party to store the received message in the message storing unit, and transmitting the message stored in the message storing unit to a message receiving party in login state; and

a message reception report unit for reporting message reception to a message receiving party who is not in login state, through the phone number of the message receiving party.

7. The instant messenger system of claim 6, wherein the message reception report unit generates a password at random for a message receiving party who is not registered

with the instant messenger system, and transmits the password together with the data for reporting message reception to the message receiving party through the phone number of the message receiving party.

8. The instant messenger system of claim 6, further comprising a subscriber registration unit for receiving subscriber registration data including a phone number and a password, from a user accessed to the instant messenger system through Internet, to implement a registration procedure.

9. The instant messenger system of claim 8, wherein the instant messenger server includes:

a login processor for processing logging in of the user accessed to the instant messenger system through the Internet;

a message transceiver for receiving a message from the message transmitting party in login state and transmitting the received message to a message receiving party having an instant messenger address included in the received message if the message receiving party is in login state; and

a dynamic account generator for dynamically

generating instant messenger accounts corresponding to cellular phone numbers of message transmitting parties or message receiving parties who are not registered with the instant messenger system.

10. The instant messenger system of claim 9, wherein the login processor transmits the password generated at random to the user using the phone number input by the user if the user does not know the password, and authenticates the user by receiving the phone number and the transmitted password.

11. A method for transmitting an instant message using a phone number as an instant messenger address, the method comprising the steps of:

(a) generating instant messenger accounts having a phone number of each user as an instant messenger address for latent instant messenger service users;

(b) receiving login data including a phone number and a password, from a message transmitting party to process logging in, and receiving a message from the message transmitting party;

(c) generating a password at random for a message receiving party who is not registered with an instant

messenger system, and transmitting the password together with the data for reporting message reception to the message receiving party using a phone number of the message receiving party included in the received message; and

(d) receiving the login data including the phone number and the password, from the message receiving party to process logging in, and transmitting the received message to the message receiving party.

12. The method of claim 11, wherein the step (b) includes the steps of:

(b1) receiving the phone number from the message transmitting party;

(b2) generating a password at random and transmitting the generated password to the message transmitting party using the received phone number;

(b3) authenticating a user by receiving the transmitted password from the user; and

(b4) receiving the message from the user.

13. A method for transmitting an instant message using a phone number as an instant messenger address, the method comprising the steps of:

(a) receiving login data including a phone number and

a password, from a message transmitting party to process logging in, and receiving a message from the message transmitting party;

(b) dynamically generating an instant messenger account using a phone number of a message receiving party included in the received message as an instant messenger address;

(c) generating a password at random for a message receiving party who is not registered with an instant messenger system, and transmitting the password together with the data for reporting message reception to the message receiving party using the phone number of the message receiving party included in the received message; and

(d) receiving the login data including the phone number and the password, from the message receiving party to process logging in, and transmitting the received message to the message receiving party.

14. The method of claim 13, wherein the step (b) includes the steps of:

(b1) receiving the phone number from the message transmitting party;

(b2) generating a password at random and transmitting

the generated password to the message transmitting party using the received phone number;

(b3) authenticating a user by receiving the transmitted password from the user;

(b4) dynamically generating the instant messenger account using the phone number of the message transmitting party as the instant messenger address; and

(b5) receiving the message from the user.

FIG. 1

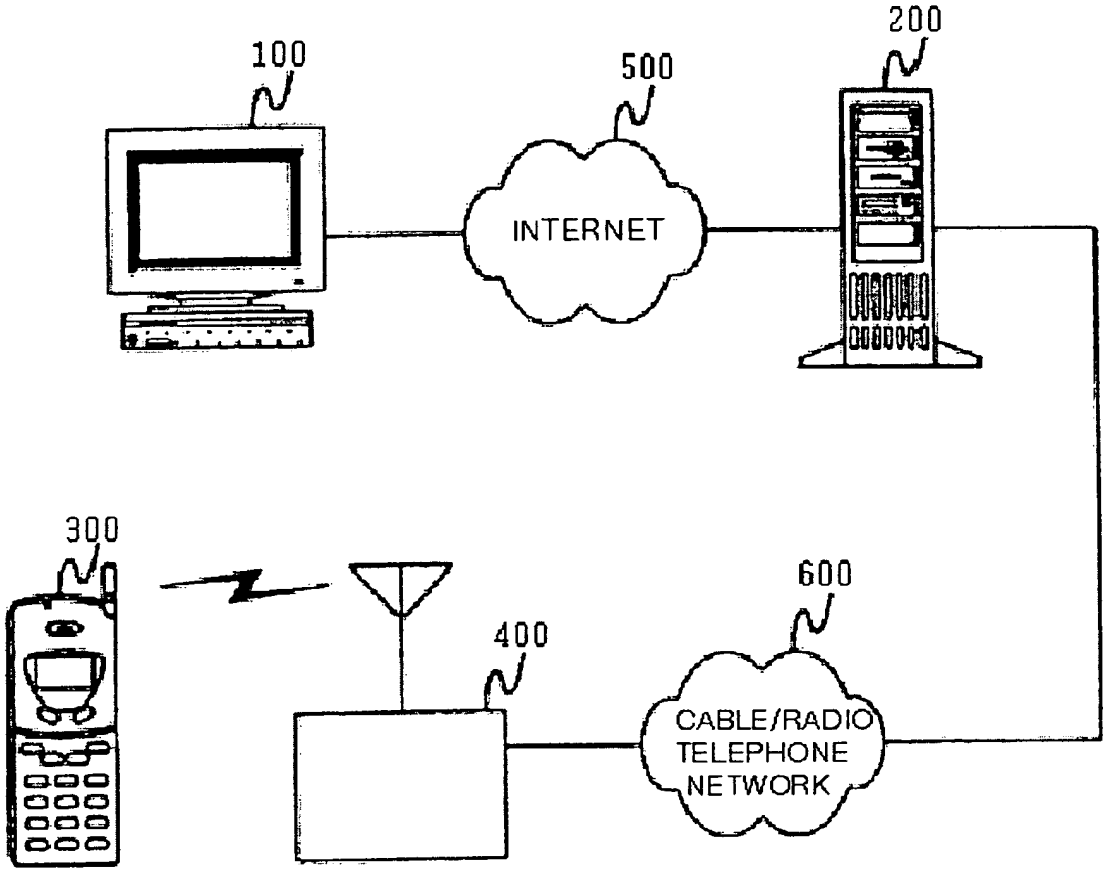

100
500
200
INTERNET
300
400
600
CABLE/RADIO
TELEPHONE
NETWORK

FIG. 2

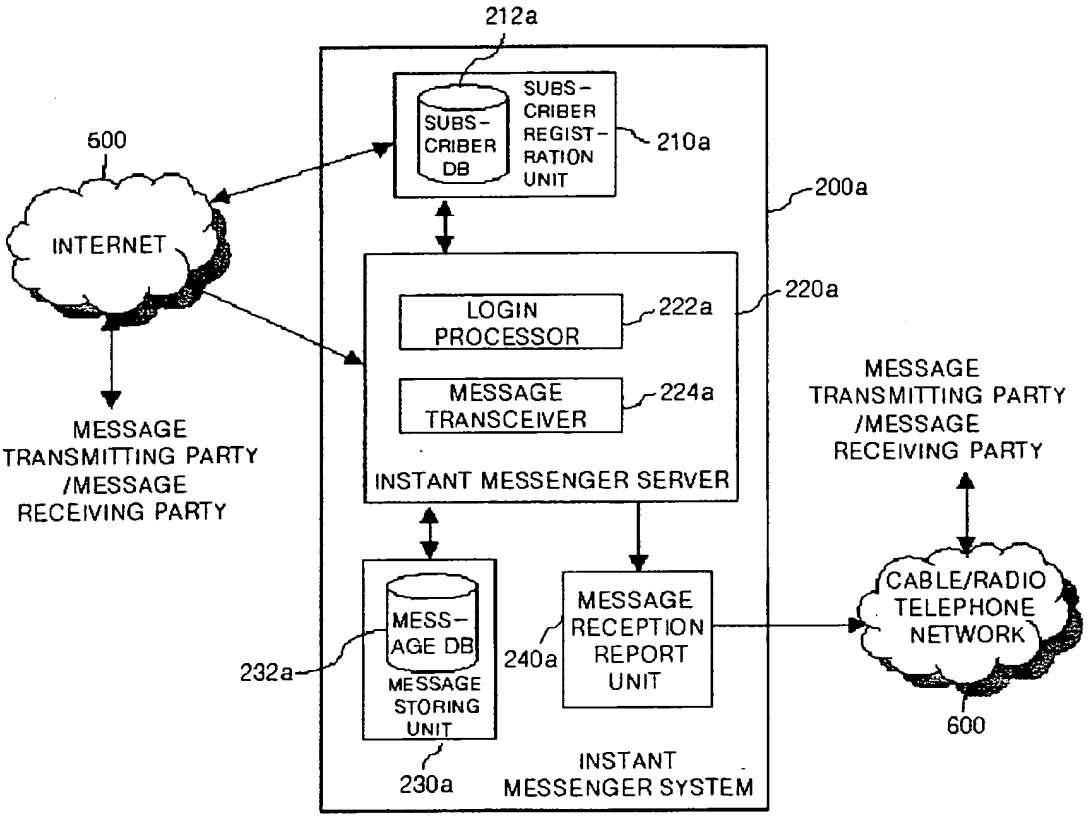

212a
SUBS-CRIBER DB
SUBS-CRIBER REGIST-RATION UNIT
210a
200a
500
INTERNET
LOGIN PROCESSOR
222a
220a
MESSAGE TRANSCEIVER
224a
INSTANT MESSENGER SERVER
MESSAGE TRANSMITTING PARTY /MESSAGE RECEIVING PARTY
MESSAGE TRANSMITTING PARTY /MESSAGE RECEIVING PARTY
MESS-AGE DB
MESSAGE STORING UNIT
232a
230a
MESSAGE RECEPTION REPORT UNIT
240a
CABLE/RADIO TELEPHONE NETWORK
600
INSTANT MESSENGER SYSTEM

FIG. 3

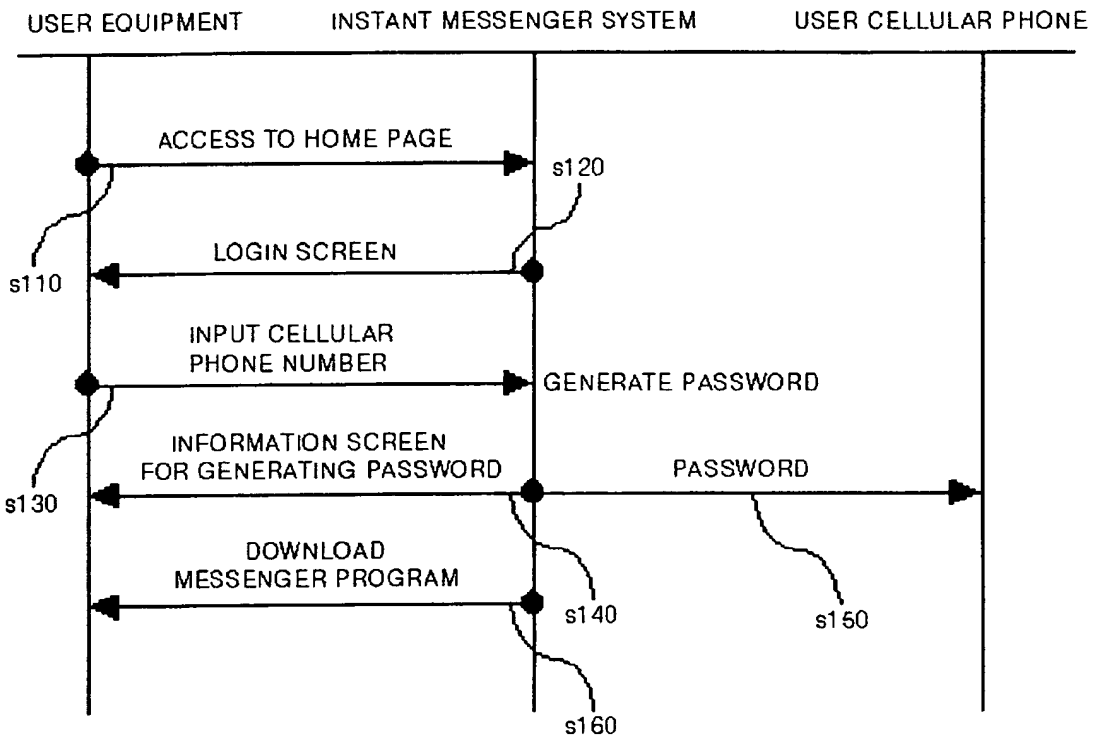

USER EQUIPMENT
INSTANT MESSENGER SYSTEM
USER CELLULAR PHONE
ACCESS TO HOME PAGE
s120
LOGIN SCREEN
s110
INPUT CELLULAR PHONE NUMBER
GENERATE PASSWORD
INFORMATION SCREEN FOR GENERATING PASSWORD
PASSWORD
s130
DOWNLOAD MESSENGER PROGRAM
s140
s150
s160

FIG. 4A

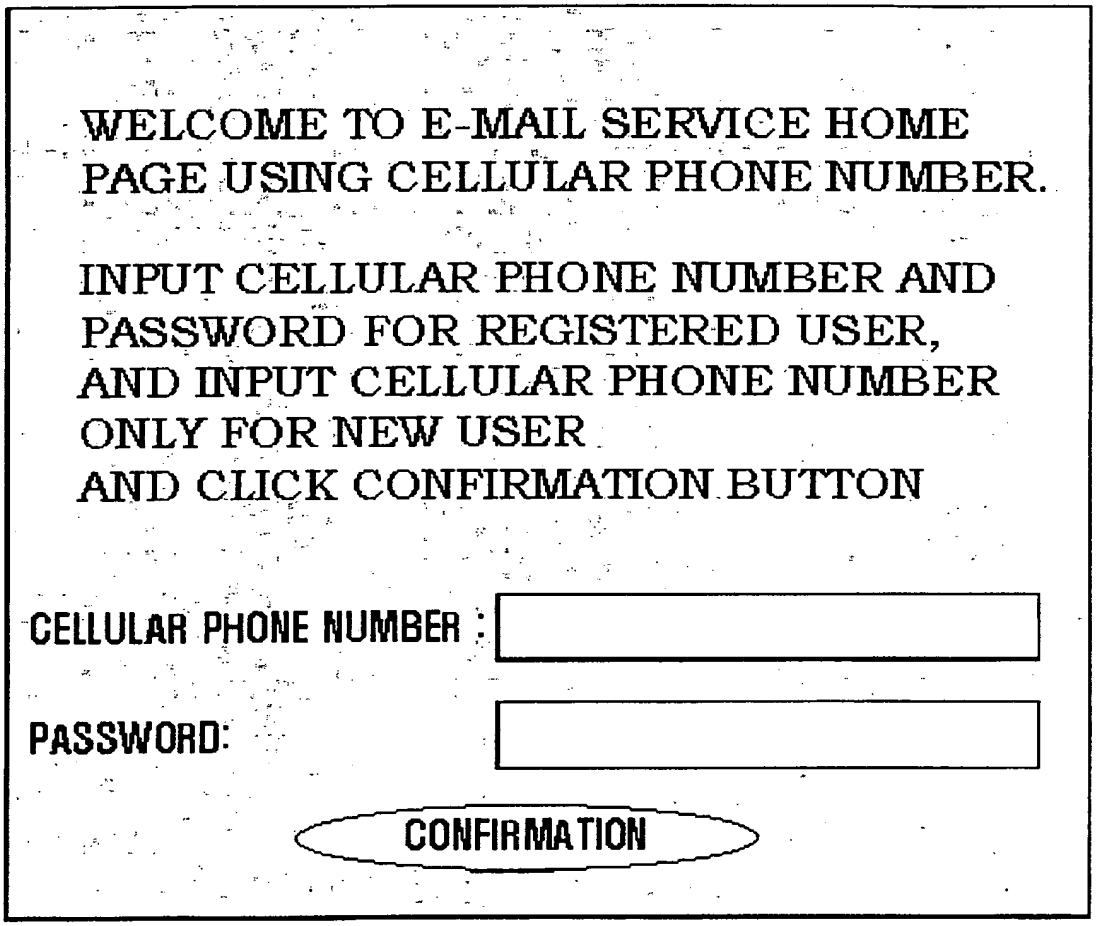

WELCOME TO E-MAIL SERVICE HOME PAGE USING CELLULAR PHONE NUMBER.
INPUT CELLULAR PHONE NUMBER AND PASSWORD FOR REGISTERED USER, AND INPUT CELLULAR PHONE NUMBER ONLY FOR NEW USER AND CLICK CONFIRMATION BUTTON
CELLULAR PHONE NUMBER :
PASSWORD:
CONFIRMATION

FIG. 4B

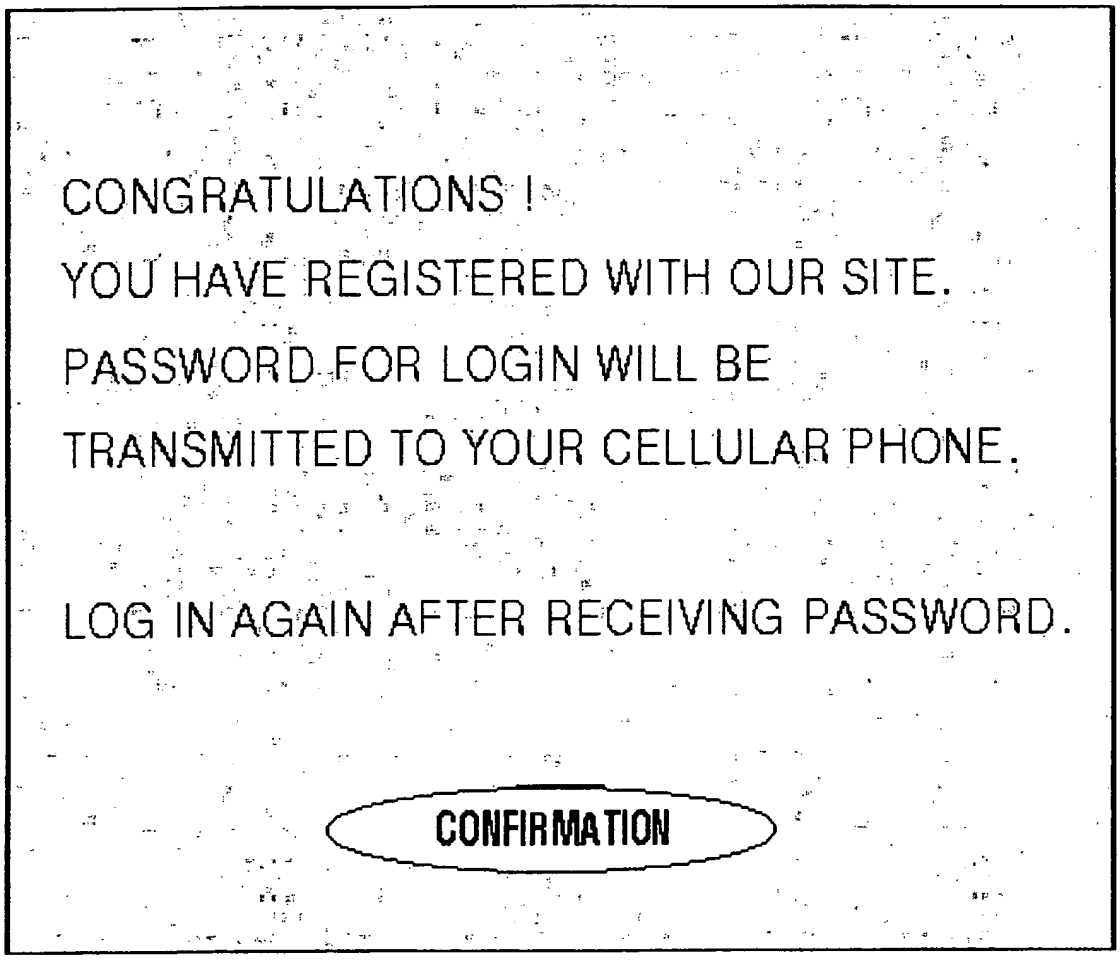

CONGRATULATIONS !
YOU HAVE REGISTERED WITH OUR SITE.
PASSWORD FOR LOGIN WILL BE
TRANSMITTED TO YOUR CELLULAR PHONE.
LOG IN AGAIN AFTER RECEIVING PASSWORD.
CONFIRMATION

FIG. 5

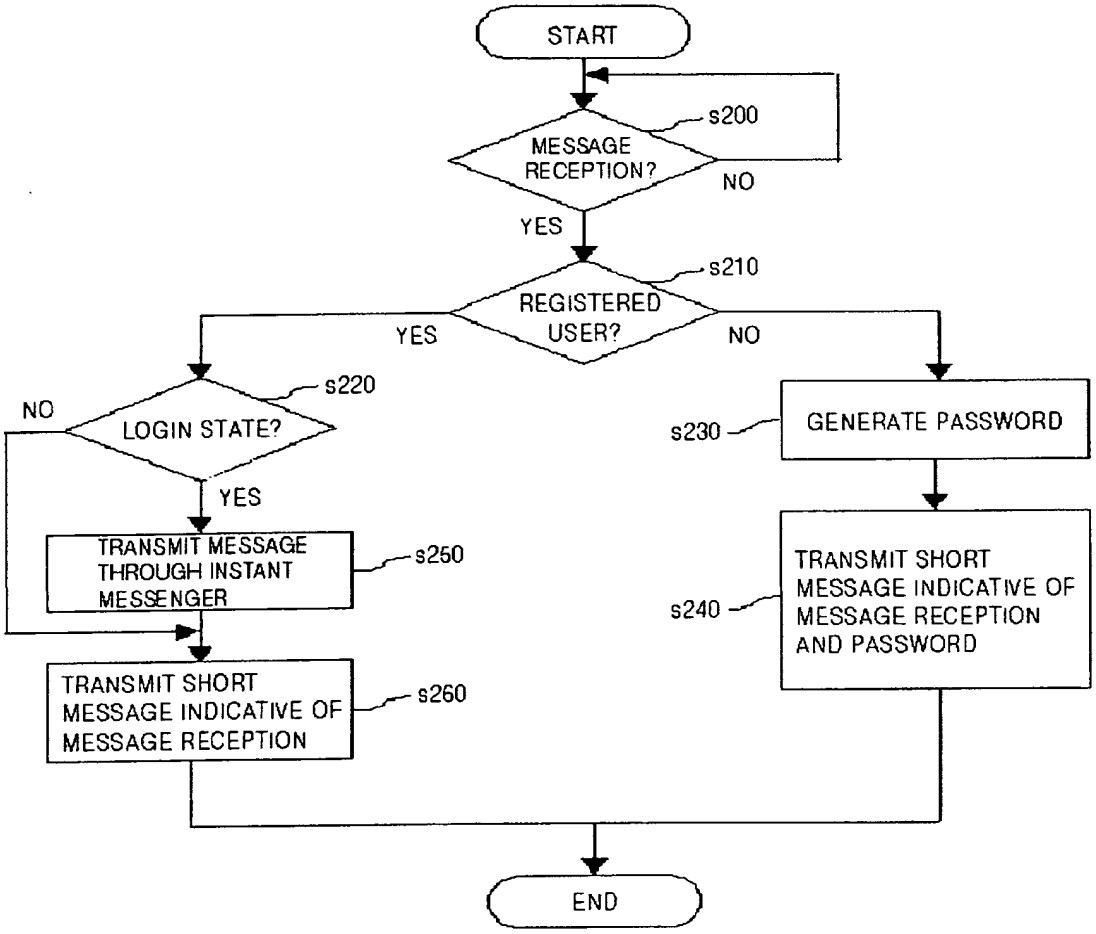
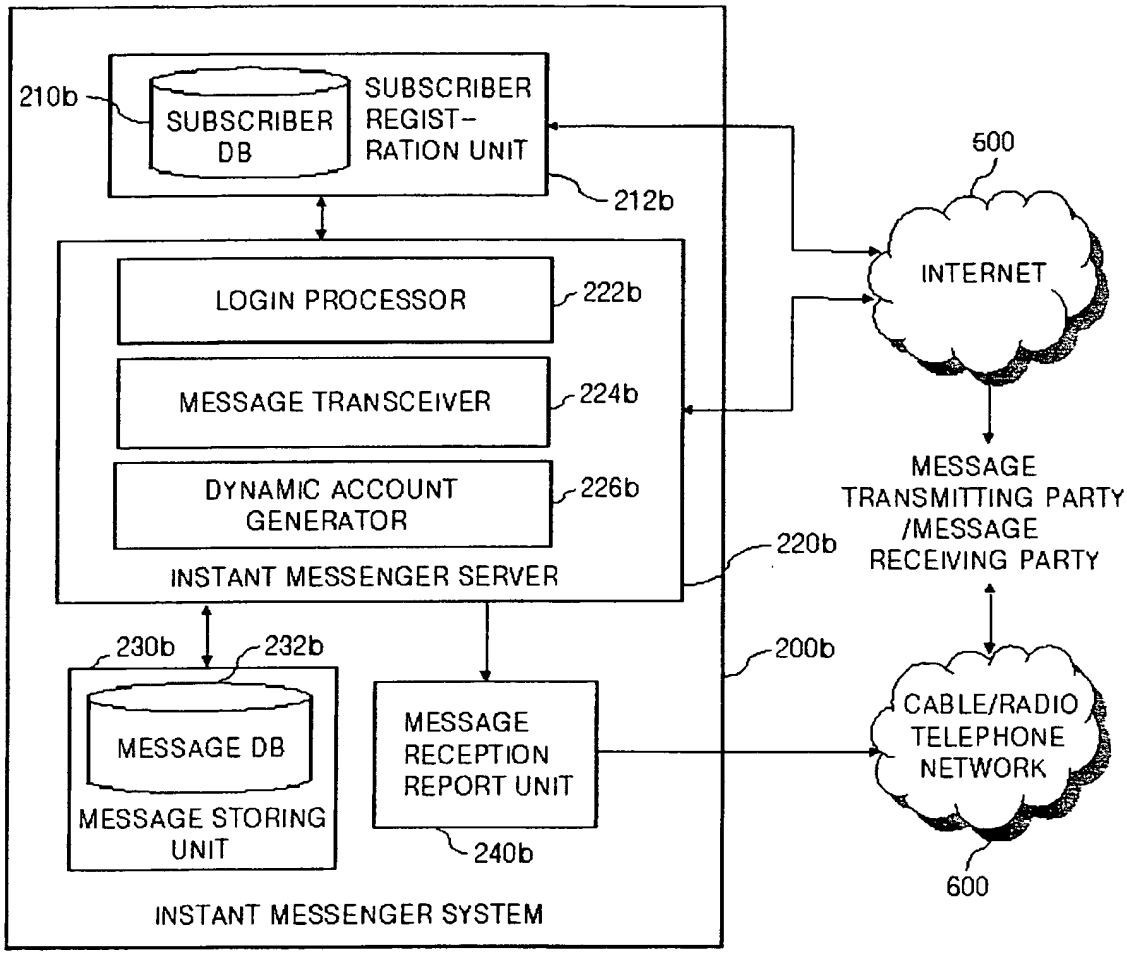

START
s200
MESSAGE RECEPTION?
NO
YES
s210
REGISTERED USER?
YES
NO
s220
NO
LOGIN STATE?
YES
s230
GENERATE PASSWORD
TRANSMIT MESSAGE THROUGH INSTANT MESSENGER
s250
s240
TRANSMIT SHORT MESSAGE INDICATIVE OF MESSAGE RECEPTION AND PASSWORD
TRANSMIT SHORT MESSAGE INDICATIVE OF MESSAGE RECEPTION
s260
END

FIG. 6


210b
SUBSCRIBER DB
SUBSCRIBER REGIST-RATION UNIT
212b
500
INTERNET
LOGIN PROCESSOR
222b
MESSAGE TRANSCEIVER
224b
DYNAMIC ACCOUNT GENERATOR
226b
MESSAGE TRANSMITTING PARTY /MESSAGE RECEIVING PARTY
220b
INSTANT MESSENGER SERVER
230b
232b
200b
MESSAGE DB
MESSAGE STORING UNIT
MESSAGE RECEPTION REPORT UNIT
CABLE/RADIO TELEPHONE NETWORK
240b
600
INSTANT MESSENGER SYSTEM

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR00/01390

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 H04Q 7/24, H04Q 7/38

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

B. FIELDS SEARCHED

Minimun documentation searched (classification system followed by classification symbols)
H04Q 7/24, H04Q 7/38, G06F 13/00

Documentation searched other than minimun documentation to the extent that such documents are included in the fileds searched
KOREAN PATENTS AND APPLICATIONS FOR INVENTIONS SINCE 1975
JAPANESE PATENT AND APPLICATIONS FOR INVENTIONS SINCE 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search trerms used)
NEW PATENT & UTILITY SEARCH SYSTEM

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97/31498 A (TELECOM FINLAND OY) 28 AUGUST 1997	1-14
A	WO 97/27546 A (EX MACHINA, INC) 31 JULY 1997	1-14
A, P	KR 2000-63924 A (BEST ZONE, INC) 6 NOVEMBER 2000	1-14

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevence
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevence; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevence; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 MARCH 2001 (29.03.2001)	29 MARCH 2001 (29.03.2001)

Name and mailing address of the ISA/KR	Authorized officer
Korean Industrial Property Office Government Complex-Taejon, Dunsan-dong, So-ku, Taejon Metropolitan City 302-701, Republic of Korea	BAE, Soon Goo
Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5742

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR00/01390

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 97/27546 A	31.07.97	US 6021433 A	01.02.00
		EP 886826 A	30.12.98
WO 97/31498 A	28.08.97	JP 504915 T2	18.04.00
		EP 951789 A	27.10.99

Apple Inc.
Ex. 1004 - Page 78

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/817,994	04/05/2004	Daniel J. Lin	OJL-1

CONFIRMATION NO. 6700

OC000000016324081

26290
MOSER, PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

Date Mailed: 06/20/2005

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/15/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

AVB

ANDREA V BURDEN
2600 (571) 272-7235

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/817,994	04/05/2004	Daniel J. Lin	OJL-1

CONFIRMATION NO. 6700

DANIEL J. LIN
240 LOMBARD STREET # 839
SAN FRANCISCO, CA 94111

OC000000016324080

Date Mailed: 06/20/2005

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/15/2005.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

AVB

ANDREA V BURDEN
2600 (571) 272-7235

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ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	Peer-to-Peer Mobile Instant Messaging Method and Device

Application Number : 10/817994

Confirmation Number: 6700

First Named Applicant: Daniel Lin

Attorney Docket Number: LIN/0002

Art Unit: 2663

Examiner:

Search string: (4582956).pn

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
	1	4582956	1986-04-15	Carolyn A. Doughty			

Signature

Examiner Name	Date

TRANSMITTAL

Electronic Version v1.1

Stylesheet Version v1.1.0

Title of Invention	Peer-to-Peer Mobile Instant Messaging Method and Device

Application Number :	10/817994
Date :	2004-04-05
First Named Applicant:	Lin Daniel J.
Confirmation Number:	6700
Attorney Docket Number:	LIN/0002

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Submitted By:	Elec. Sign.	Sign. Capacity
Frederick Kim Registered Number: 38513	/Frederick Kim/	Attorney

Documents being submitted:	Files
us-ids	LIN0002FK-usidst.xml us-ids.dtd us-ids.xsl
Comments	

ACKNOWLEDGEMENT RECEIPT

Electronic Version 1.1

Stylesheet Version v1.1.1

Title of Invention	Peer-to-Peer Mobile Instant Messaging Method and Device

Submision Type : Information Disclosure Statement

Application Number: 10/817994

EFS ID: 87831

Server Response:

Confirmation Code	Message
ISVR1	Submission was successfully submitted - Even if Informational or Warning Messages appear below, please do not resubmit this application
ICON1	6700
USPTOEFSNotice	For assistance with e-filing a patent application, contact the Patent Electronic Business Center: Toll-Free Number:1(866) 217-9197 Website: http://www.uspto.gov/ebc/

First Named Applicant: Daniel Lin

Attorney Docket Number: LIN/0002

Timestamp: 2005-07-08 17:36:16 EDT

From: us

File Listing:

Doc. Name	File Name	Size (Bytes)	Date Produced (yyyymmdd)
us-ids	LIN0002FK-usidst.xml	957	2005-07-08
us-ids	us-ids.dtd	7763	2005-07-08
us-ids	us-ids.xsl	12026	2005-07-08
package-data	LIN0002FK-pkda.xml	1723	2005-07-08
package-data	package-data.dtd	27025	2005-07-08
package-data	us-package-data.xsl	19263	2005-07-08
	Total files size	68757	

Message Digest: d66b7ab98647fed372eb705aed1bb90d650366b2

Digital Certificate Holder Name: cn=Frederick D. Kim.,ou=Registered Attorneys,ou=Patent and Trademark Office,ou=Department of Commerce,o=U.S. Government,c=US

OIPE JC22 AUG 08 2005 PATENT & TRADEMARK OFFICE

IFW

PATENT
Atty. Dkt. LIN/0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Daniel J. Lin

Serial No.: 10/817,994

Filed: 4/5/04

For: Peer-to-Peer Mobile Instant Messaging Method and Device

§ Confirmation No.: 6700
§
§ Group Art Unit: 2681
§
§ Examiner: Chau T. Nguyen
§
§
§
§

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING 37 CFR 1.8

I hereby certify that this correspondence is being deposited on **August 4, 2005** with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

8/4/05 — Date
Frederick Kim

Dear Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

The Applicant, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

While the information submitted in this Supplemental Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97, this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-SB08a.

Applicant certifies that all references submitted with this disclosure were first cited in a communication from a foreign patent office dated July 12, 2005, which communication is enclosed, not more than three months prior to the filing of this Supplemental Information Disclosure Statement.

In accordance with 37 C.F.R. §1.97(b)(3), this Supplemental IDS is being filed before the mailing of the first office action on the merits. Thus, a fee is not required for the Supplemental IDS.

Respectfully submitted,

Frederick Kim
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Attorney for Applicant

OIPE JC22
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PTO/SB/08a (08-03)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	4/5/04
First Named Inventor	Daniel J. Lin
Art Unit	2681
Examiner Name	Chau T. Nguyen
Attorney Docket Number	LIN/0002 (DJL-1)

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US- 2002/0155826 A1	10-24-2002	Robinson et al.	
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Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	1	EP 1 331 786 A1	07-30-2003	Chambers et al.		
	2	WO 03/087972 A2	10-23-2003	Costa Requena et al.		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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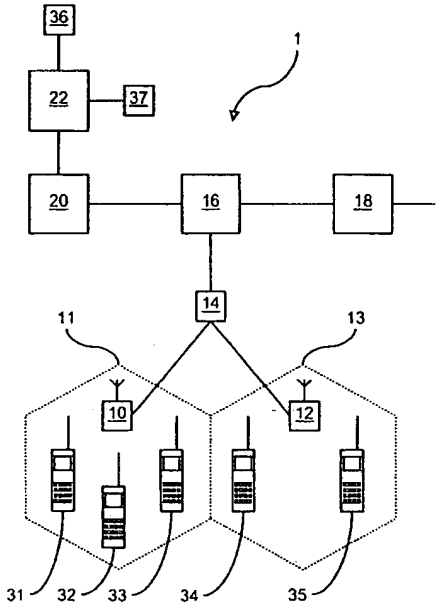
(54) Method and device for providing a communication session

(57) The invention relates to a method and device for providing a communication or chat session with a plurality of users, in particular for mobile radio networks according to GSM or UTMS standard.

A first user starts a GPRS session requesting an IP address at his network. Then he sends an initiation SMS-message comprising his IP-address to a plurality of other users, preferably selected from his mobile station's telephone book. Addressed users also request own IP addresses at their respective networks and send a reply including their respective own IP-address via GPRS to the first user. After receiving at least one reply by the first user the chat session is activated and all participants can exchange messages, preferably text and images, via GPRS or another packet switched service.

This method provides a more convenient, less expensive and faster text exchange than corresponding via SMS-messages.

Fig. 1



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Description

Field of the Invention

[0001] The invention relates to a method and device for providing a communication session in a communication system, in general, and for a communication session with a plurality of users, in particular.

Background of the Invention

[0002] Telecommunication, in general, and digital mobile radio telecommunication, in particular, are of increasing interest for all types of text, speech or data transmission in today's information society.

[0003] Recently, exchanging of text messages has become very popular. User of global system for mobile communication (GSM) networks, in particular young people use the GSM short message service (SMS) very frequently to communicate with their peer group.

[0004] To send an SMS-message it is necessary to:

- select a respective menu item at a mobile phone,
- enter a text,
- enter a telephone number of a recipient and
- send the text with short message service.

[0005] On most mobile telephones, this procedure has to be repeated for each recipient, even though the same text is transmitted. Reading a received SMS-message requires a similarly long and complicated procedure.

[0006] Furthermore the user or subscriber can either read a received SMS-message or see his own text to be sent, but cannot see both or send and receive simultaneously. Therefore, a user who wants to send a response to a message received has to remember the received message's content.

[0007] In general, this type of text transmission functionality between mobile telephone users is relatively poor. Nevertheless, short message service is pretty expensive. Typical cost for transmitting an SMS-message is about 0.2 Euro.

[0008] Furthermore, an SMS-message is disadvantageously restricted to 160 characters.

[0009] Moreover, SMS-messages are routed via a server in the GSM-network or, more precisely, in the network backbone. The SMS-message is buffered or stored by the server before being transmitted to the recipient. This procedure considerably slows down the short message service.

[0010] Typically, the sender of the SMS-message does not receive a confirmation, whether his message was received or read by the recipient.

[0011] All this makes a correspondence via SMS disadvantageous for the users but also for the network operator, in particular when the correspondence includes several subsequent messages to be exchanged between the users. Those disadvantages are even more serious when more than two users try to communicate via SMS. A simultaneous exchange of text is not possible at all.

[0012] However, due to the exploding spreading of telecommunication users and hard competition between the network operators, particularly in the field of mobile communication there is an ever-increasing and nearly unappeasable demand for new and improved services.

[0013] Therefore, it is an object of the present invention to provide a method and device for providing a communication session with improved capabilities and avoiding the aforementioned disadvantages.

[0014] A further object of the invention is to provide a method and device which is suitable for a communication session with a plurality of users.

[0015] Still a further object of the invention is to provide a method and device which enables exchanging a large amount of data, e.g. text and/or images in a convenient, inexpensive and fast manner.

[0016] Still a further object of the invention is to provide a method and device which can be implemented in already existing communication systems, e.g. in GSM or UMTS networks.

[0017] A further object of the invention is to provide a method and device for providing a communication session wherein users with mobile and wirebound terminals can participate.

[0018] The object of the invention is achieved by subject matter of claim 1 and 22 in a surprisingly simple manner.

[0019] The method according to the invention for providing a communication session with at least a first and second user of a communication system comprises at least a first and a second terminal assigned to the first and second user, respectively. The method comprises the following steps:

[0020] The first terminal transmits an initiation message to the second terminal, wherein the initiation message comprises a first address assigned to the first terminal.

[0021] The second terminal receives the initiation message.

[0022] The second terminal transmits a first reply to the initiation message.

[0023] The first terminal receives the first reply.

[0024] The communication session initiated or provided with the method according to the invention allows the users to exchange data, e.g. text or images in a simple and inexpensive manner. In particular, the data can be received and transmitted simultaneously. Furthermore a chat session in real time is enabled.

[0025] Advantageously the first user or initiator can be identified by the first address, which is preferably world-wide unique.

[0026] When using a telephone having a 10-button keyboard with multiple character occupancy, user convenience is largely improved when a word recognition

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software or method adapted to such a 10-button keyboard is provided.

[0027] The method and device according to the invention can easily be implemented in an existing communication system, e.g. a network according to the Global System for Mobile Communication (GSM) or the Universal Mobile Telecommunication System (UMTS).

[0028] Preferably, the reply of the second user or second terminal comprises a second address with which also the second user can be identified by others. The second address is preferably also world-wide unique.

[0029] In a preferred embodiment of the invention the first and/or second address is a packet data protocol address, e.g. an internet protocol (IP) address. Preferably, the first and/or second address are requested at the communication system or network, more precisely at a stationary part, e.g. a server at the backbone of the network.

[0030] However, it is also possible that the first and/or second terminal already have an address, e.g. an IP-address. In this case that address can be used instead of requesting a new one. This can happen when a terminal is already online, e.g. using internet or wireless application protocol (WAP) services when the session should be started.

[0031] Preferably, the first address is requested by the first or initiator terminal before the initiation message is transmitted and the second address is requested by the second user before the first reply is transmitted or sent.

[0032] Preferably, the initiation message is transmitted with a circuit switched service, e.g. short message service (SMS).

[0033] Advantageously, the short message service is available at any time and can be used, even when the second user has switched off his terminal. In this case, the message will be stored by a server of the network back-bone and will be automatically transmitted to the second user, when the second terminal is switched on and logs on to the network.

[0034] In a preferred embodiment, the first reply is transmitted with a packet switched service, e.g. with general packet radio service (GPRS). Preferably, this transmission uses internet protocol or wireless application protocol, in particular, when the first address is an IP- or WAP-address.

[0035] In a further preferred embodiment the first terminal marks the second user or participant as being active, when the first reply is received and/or the session is activated at this time by the first terminal which acts as server for the session. Therefore, no server outside the user terminals (which would be e.g. a stationary server in the network backbone) is necessary to store messages or assign them to the active session participants once the session is active.

[0036] Furthermore, when the session is active the first, second and possibly further active terminals enable data input by the respective user. Data are preferably text or text messages, but can also be other data, in particular digital data, e.g. images and/or digitised sounds as well.

[0037] In a most preferred embodiment, more than the first and second user are participating the communication session. However, the first user is still the initiator of the session, such that the first terminal assigned to the first user is characterised as initiator terminal.

[0038] The second user is a member of a group comprising a plurality of users. The group comprises 2, 3, 4, 5, 6 or more users, each with a respective terminal assigned to him.

[0039] The first, second and further terminals can be mobile terminals or mobile stations, e.g. mobile phones and/or wirebound phones and/or computers. Advantageously, the plurality of user terminals can also comprise different terminals.

[0040] When the first user or initiator wants to start the communication session, he first selects one or more other users, together defining a selected group of users. Selection input in the first terminal comprises selecting one or more users from a phone book and/or manually typing one or more subscriber identifications or telephone numbers. When all chosen participants are selected, the initiation message, e.g. an SMS-message comprising at least the first address of the first user is sent to each member of the group. Each member receiving the initiation message is enabled to decide whether he wants to participate the offered communication session. If so, he requests an own address and sends a reply including his own address to the initiator. When receiving the reply the initiator terminal will automatically mark this replying user as active. With the first received reply also the session becomes automatically active.

[0041] Preferably, the communication system or at least a portion of it is a digital system comprising a global system for mobile communication (GSM) network or a universal mobile telecommunication system (UMTS) network, such that at least some of the participating mobile terminals are GSM- or UMTS-terminals or phones.

[0042] The invention is described in more detail and in view of preferred embodiments hereinafter. Reference is made to the attached drawings.

Brief Description of the Figures

[0043] It is shown in

Fig. 1 a portion of a system architecture of a communication system and

Fig. 2 a flow chart of a course of actions from initiation to termination of a communication session according to a preferred embodiment of the invention.

Detailed Description of the Invention

[0044] In the following various phases of a communi-

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cation session according to the invention in form of a chat session is described. Preferably the methods steps take place in the order as described as follows.

[0045] Fig. 1 shows a communication system or network 1 comprising two base transceiving stations 10, 12, a base station controller 14, a serving general packet radio service (GPRS) support node 16 two gateway GPRS support nodes 18, 20 and a gateway mobile switching centre (GMSC) 22. GPRS support node 18 connects the communication network to other mobile communication networks. It is clear to those skilled in the art that the aforementioned components are merely an exemplary portion of a real telecommunication network. A real network typically comprises a large plurality of each of those components.

[0046] Furthermore an initiator terminal or GSM or UMTS mobile phone 31 four further GSM or UMTS mobiles phones 32, 33, 34 and 35 are shown. Mobile phones 31, 32 and 33 belong to cell 11 served by base transceiving station 10 and terminals 34 and 35 belong to cell 13 being served by base transceiving station 12.

[0047] Furthermore the communication network 1 comprises a stationary telephone 36 and a computer 37 both being wirebound connected to the network via a gateway mobile switching centre 22.

1. Session Initiation

[0048] When a user of a GPRS mobile phone wishes to start 42 a communication session or, more precisely, a chat session according to the invention he creates 44 an initial member list. This user is the initiator to which initiator terminal 31 is assigned to.

[0049] The initial member list is a list of subscriber identification or telephones numbers of other chat session enabled GPRS mobile and fixed-line telephone users who will be invited to join the chat session. Selection 44 can be simplified by selecting entries from the telephone book of mobile phone 31. Once the member list comprises all chosen users assigned to mobile phones 32, 33, 34 and 35, stationary phone 36 and stationary computer 37 in this example, a GPRS session is activated. This gives the mobile phone 31 an internet protocol (IP) address. The initiator's IP-address can either be requested 46 at the network and transmitted via radio channel from base transceiving station 10 to the initiator terminal 31 or terminal 31 already has an IP-address.

[0050] Now initiator terminal 31 automatically sends 48 an SMS-message to each member of the initial member list. The initiators IP-address, his telephone number, a name for the chat session, a greeting and a nickname of the initiator are comprised by this initiation message.

2. Replying to an Invitation

[0051] When the invited user terminals 32, 33, 34, 35, 36, 37 receive 50 the initiation or invitation SMS-message his terminal provides a choice 52 to accept or reject the invitation by a respective input. If a user accepts the invitation, his terminal activates a GPRS session. Thus the respective terminal requests 54 an IP-address from the network, but can also already have one. When this user or his respective terminal has got or has its own IP-address an automatic reply to the invitation is sent 56 to the initiator 31. This reply is not an SMS-message but an internet protocol message sent via GPRS.

3. Initiator Receives an Invitation Reply

[0052] When the initiator 31 receives 58 a reply to the invitation SMS-message of the first one of the invited users, e.g. from terminal 32 this member is marked as active 60 by initiator terminal 31. Now the chat session is active 62.

[0053] When the initiator 31 receives a second reply, e.g. from mobile phone 33 the initiator's terminal 31 automatically updates 64 a list of all active members. This updated list includes the IP-addresses, the nicknames and the telephone numbers of each active member and is then automatically transmitted 66 by the initiators terminal 31 to each active member, also to the one who lastly replied.

4. An Active Chat Session

[0054] Once the session is active, any of the active members can send 68 a chat text. The chat text is packed into a chat message and sent to all other active members using a packet switched service, e.g. with internet protocol.

[0055] When a text message is received by another member, the text is extracted, prefixed with the senders nickname which can be recognized e.g. by the source IP-address and displayed.

[0056] The display of each terminal is divided into two portions and text to be transmitted is entered using e.g. the top half of the display. E.g. the lower half is used to display incoming text. When no own text to be sent is being displayed, the whole screen is used to display incoming text.

5. Leaving a Chat Session

[0057] If an active member wants to leave the chat session, a "LEAVE"-message is sent to the initiator. The initiators terminal 31 automatically removes this member from the active list and sends each remaining active member an updated list. This leaving member is now set to be inactive and is not sent any more chat messages for this session.

[0058] Preferably, the GPRS session of this member that left is now deactivated.

6. Re-entering a Chat Session

[0059] Should an inactive member wish to join or re-

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join a still active chat session, he first activates a GPRS session if one is not still or already active. He then sends a "JOIN"-message comprising his IP-address to the initiator. The initiator can either accept or reject the join request. When the join request is rejected, the initiator sends a "JOIN REJECT"-message to the join requester which optionally comprises a text.

[0060] If the initiator accepts to join request, the joining member is set to the active state and an updated active member list is sent to all active members, also to the user who sent the join request. When the joining member receives the list, he knows that his request was accepted.

7. Joining an Active Chat Session

[0061] At any time during an active chat session the initiator can invite other users to join the session. For this purpose the initiator transmits a new invitation SMS-message. The joining process is then equivalent to the reply process as described in section 2.

8. The Initiator Leaves the Chat Session

[0062] Should the initiator wish to leave the chat session, he can chose between terminating the session or passing the initiator status to another active member.

[0063] If the chat session should be terminated 70 by the initiator 31 he sends a "TERMINATE"-message to all active members.

[0064] If the initiator wants to pass on the initiator status a message is sent to the chosen active member. If that chosen member accepts the initiator status the session remains active with the latter user's terminal acting as server.

[0065] It will be appreciated that the above-described embodiment of the method and device according to the present invention has been set forth solely by way of example and illustration of the principals thereof and that further modifications and alterations may be made therein without thereby departing from the spirit and scope of the invention.

Claims

1. Method for providing a communication session with at least a first and second user of a communication system (1) comprising at least a first and second terminal (31, 32) assigned to the first and second user, respectively, the method comprising:

   the first terminal (31) transmitting (48) an initiation message to the second terminal (32), the initiation message comprising a first address assigned to the first terminal (31),
   the second terminal (32) receiving (50) the initiation message,
   the second terminal (32) transmitting (56) a first reply to the initiation message and
   the first terminal (31) receiving (58) the first reply.

2. Method according to claim 1, wherein
   the first reply comprises a second address assigned to the second terminal (32).

3. Method according to claim 1 or 2, wherein
   the first and/or second address is a packet data protocol address.

4. Method according to one of the preceding claims, wherein the first and/or second address is an Internet Protocol (IP) address.

5. Method according to one of the preceding claims, wherein the first terminal (31) requests the first address at the communication system (1) before the initiation message is transmitted (48).

6. Method according to one of the preceding claims, wherein the second terminal (32) requests (54) the second address at the communication system (1) before transmitting (56) the first reply.

7. Method according to one of the preceding claims, wherein the initiation message is transmitted (48) with a circuit switched service.

8. Method according to one of the preceding claims, wherein the initiation message is transmitted (48) with short message service (SMS).

9. Method according to one of the preceding claims, wherein the first reply is transmitted (56) with a packet switched service.

10. Method according to one of the preceding claims, wherein the first reply is transmitted (56) with General Packet Radio Service (GPRS).

11. Method according to one of the preceding claims, wherein the first reply is transmitted (56) using Internet Protocol (IP).

12. Method according to one of the preceding claims, wherein mobile stations, mobile phones (31, 32, 33, 34, 35) wirebound terminals, wirebound phones (36) or computers (37) are provided as the first and/or second terminal (31, 32).

13. Method according to one of the preceding claims, wherein the communication system (1) comprises a Global System for Mobile Communication (GSM) network and/or a Universal Mobile Telecommunication System (UMTS) network.

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14. Method according to one of the preceding claims, wherein the session is activated (62) and/or the second terminal (32) is marked as active (60) by the first terminal (31) when the first reply is received (58) by the first terminal (31).

15. Method according to one of the preceding claims, wherein the first and/or second terminal (31, 32) enable the first and/or second user, respectively, to input (68) data and said data are exchanged (68) with a packet switched service at least between the first and second terminal (31, 32) after the first reply is received (58) by the first terminal (31).

16. Method according to one of the preceding claims, wherein the first terminal (31) acts as a server for the communication session.

17. Method according to one of the preceding claims for providing a communication session with at least the first terminal (31) and a group of terminals (32, 33, 34, 35, 36, 37) wherein the second terminal (32) is a member of said group and at least a third terminal (33) assigned to a third user is a member of said group, the method comprising:

the first terminal (31) transmitting (48) the initiation message to each member of the group,
at least the third terminal (33) receiving (50) the initiation message,
at least the third terminal (33) transmitting (56) a second reply to the initiation message and
the first terminal (31) receiving (58) the second reply.

18. Method according to claim 17 for providing a communication session with a plurality of users, wherein

the group of terminals comprises a plurality of member terminals (32, 33, 34, 35, 36, 37) each assigned to a respective user,
substantially each member terminal (32, 33, 34, 35, 36, 37) receiving (50) the initiation message,
at least some of the member terminals are transmitting (56) a reply to the first terminal,
the first terminal (31)receiving (58) the replies and
the first terminal (31) marking (60) substantially each terminal from which a reply is received (58) as being active.

19. Method according to claim 18, wherein
a list of active terminals of the communication session is defined (64), said list including substantially all active terminals.

20. Method according to claim 19, wherein
the list of active terminals is transmitted (66) to substantially each active terminal, in particular, with a packet switched service, after the first terminal (31) receiving (58) a reply of a member terminal.

21. Method according to claim 20, wherein each active terminal enables (68) the respective user to input data and said data are transmitted to each active terminal with a packet switched service.

22. Method for transmitting a circuit switched message with a first terminal (31) assigned to a first user of a communication system (1) to a plurality of users comprising at least a second and third user, in particular according to one of the preceding claims, the method comprising:

the first terminal (31) providing an input by the first user for the circuit switched message
the first terminal (31) providing an input by the first user to define a group of users,
selecting (44) a subscriber number for each user of said plurality of users,
transmitting said message to each user of said plurality of users.

23. Method according to claim 22, wherein

at least some of the subscriber numbers are mobile subscriber numbers and are selected from a data base stored in the first terminal (31), the first terminal (31) being a mobile station and the message being transmitted with short message service (SMS).

24. Device comprising a telecommunication terminal (31) for using with a communication system (1), the terminal (31) comprising

means for transmitting an initiation message comprising an initiator address to other terminals (32, 33, 34, 35, 36, 37)
means for receiving an initiation message from other terminals,
means for storing an initiator address,
means for transmitting a reply message to another terminal and
means for receiving a reply message from other terminals.

25. Device according to claim 24, comprising means for transmitting a reply comprising a reply address and means for storing a reply address,

26. Device according to claim 24 or 25, comprising means for transmitting and/or storing a packet data protocol address.

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27. Device according to one of the preceding device claims, comprising means for transmitting and/or storing an Internet Protocol (IP) address.

28. Device according to one of the preceding device claims, comprising means for requesting an address at the communication system (1).

29. Device according to one of the preceding device claims, comprising means for transmitting and/or receiving an initiation message with a circuit switched service.

30. Device according to one of the preceding device claims, comprising means for transmitting and/or receiving a reply with a packet switched service or with a packet data protocol addressed service.

31. Device according to one of the preceding device claims, comprising means for transmitting and/or receiving data with General Packet Radio Service (GPRS).

32. Device according to one of the preceding device claims, comprising means for Internet Protocol-based (IP) transmitting and/or receiving data.

33. Device according to one of the preceding device claims, comprising a mobile station, a mobile phone (31, 32, 33, 34, 35), a wirebound terminal, a wirebound phone (36) or a computer (37).

34. Device according to one of the preceding device claims, adapted to communicate with a telecommunication network according to Global System for Mobile Communication (GSM) and/or according to Universal Mobile Telecommunication System (UMTS).

35. Device according to one of the preceding device claims, comprising means for activating the communication session and/or assigning another terminal (32, 33, 34, 35, 36, 37) with an active status upon a reply message received by said another terminal.

36. Device according to one of the preceding device claims, comprising

means for handling a list of active terminals,
means for assigning each terminal from which a reply is received to the list of active terminals and
means for transmitting the list of active terminals to substantially each active terminals with a packet data protocol addressed service.

37. Device according to one of the preceding device claims, adapted to be used with the method according to one of the method claims 1 to 23.

38. Telecommunication network (1) providing packet data protocol addressed service, the network comprising

a plurality of devices (31) according to one of the preceding device claims,
a plurality of base transceiving stations (10, 12),
a plurality of base station controllers (14),
at least a serving packet radio service support node (16).

39. Telecommunication network according to claim 38, comprising at least a gateway packet radio service support node (18, 20) for connecting said network (1) to another packet data network.

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Fig. 1

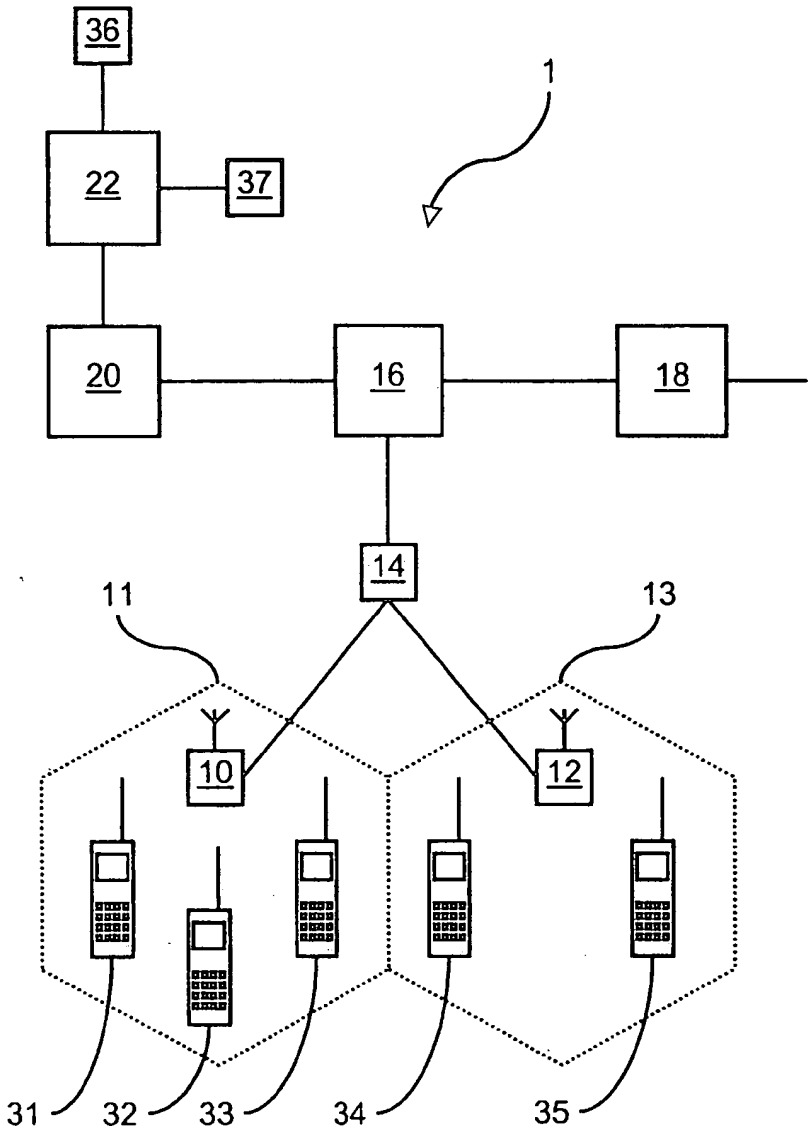

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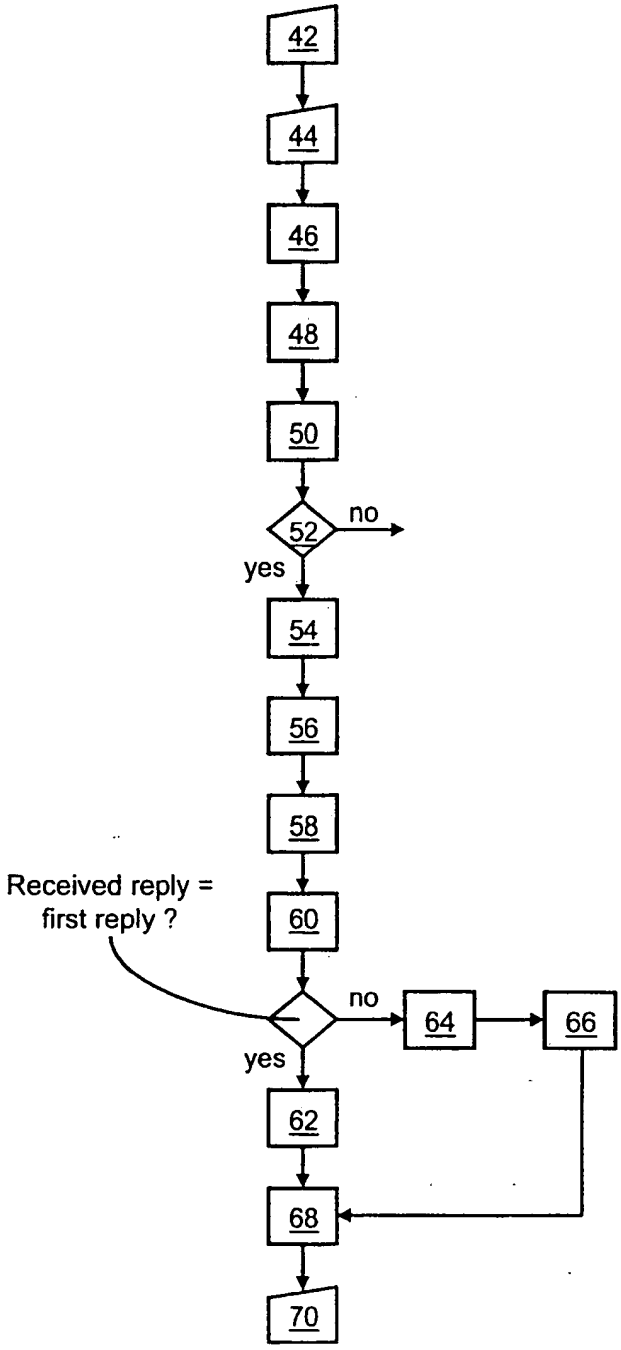
Fig. 2



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European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 00 2167

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Y		7,8,10, 13,14, 18,19, 22,23, 29,31, 34,35,38	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21 June 2002	Mannekens, J

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 00 2167

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 02 00 2167

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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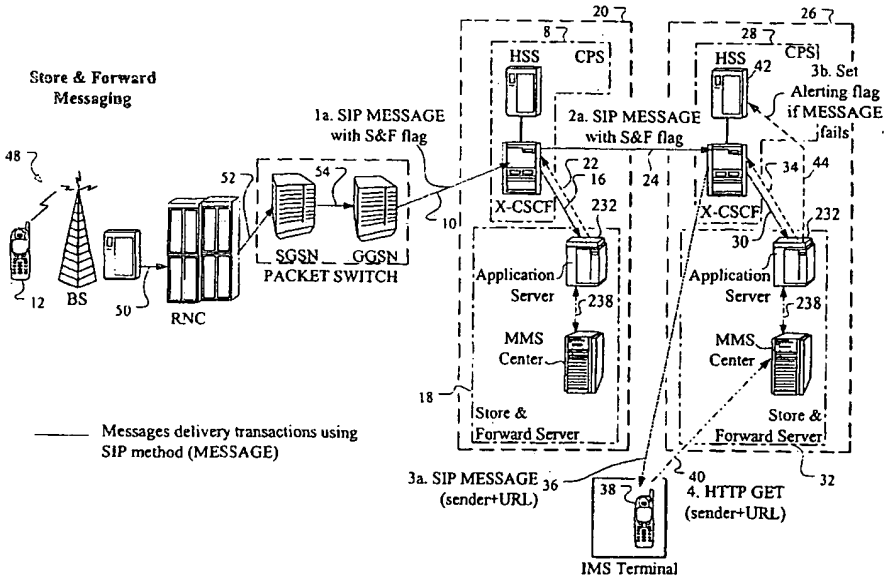
(54) Title: STORE-AND-FORWARD SERVER AND IM SERVICE METHOD IMPLEMENTED IN IMS



(57) Abstract: A new functionality is defined for addition to a known multimedia messaging service to enable interfacing with the mobile multimedia architecture as provided by the IP multimedia core network subsystem (IMS) of the Third Generation Partnership Project (3GPP).

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

STORE-AND-FORWARD SERVER AND IM SERVICE METHOD IMPLEMENTED IN IMS

Background of the Invention

Technical Field

The present invention relates to multimedia messaging and, more particularly, as implemented on mobile networks.

Discussion of Related Art

It has been known to utilize a proprietary Multimedia Messaging Service (MMS) as a natural continuation of the previously known Short Message Service (SMS) and Picture Messaging. Like SMS centers, MMS centers (MMSCs) also provide reliable, scalable store and forward platforms. For instance, such a known proprietary MMS center runs on second generation (2G), General Packet Radio System (GPRS) and third generation (3G) networks utilizing Wireless Access Protocol (WAP) to deliver messages. Such a known MMSC has been designed as an open platform based on Third Generation Partnership Project (3GPP) and WAP specifications.

Through the MMS center, text, photo images, voice and video clips can be sent from one mobile device to another. The MMS center also supports communication between mobile devices and Internet applications. Messages are sent to either a Mobile Station ISDN address or an email address. To benefit end-users, mobile number portability (MNP) is supported.

As with SMS, end-users are provided with the possibility to request a delivery report on the status of a message as well as to set a message's maximum lifetime. MMS messages can be sent to multiple recipients. The receiver is notified of the incoming message with an MMS notification using SMS as a bearer. Whether this notification is visible to the receiver or not, is a matter of phone implementation.

Subsequent to the development of the MMS, there has been an open architecture Internet Protocol (IP) approach under development. It is called the IP Multimedia Core Network Subsystem (IMS) and includes network elements as defined in 3GPP TS 23.002 v5.6.0 (2002-03) *Third Generation Partnership Project; Technical Specification, Group Services and Systems Aspects; Network Architecture (Release 5)*, particularly as shown in Fig. 6 thereof as described in Section 5.5

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Configuration of IM Subsystem Entities and as further detailed in Section 4a.7 entitled *IP Multimedia (IM) Core Network (CN) Subsystem Entities*. There, a *Call Session Control Function* (CSCF) is shown interfacing with a home subscriber server (HSS) which acts as a master database for a given user and also containing subscription-related information to support the network entities actually handling calls/sessions. A CSCF also interfaces with a media gateway control function (MGCF) that controls the parts of the call state that pertain to connection control for media channels in an IM-MGW (IP multimedia-media gateway function). An IM-MGW will terminate bearer channels from a switched circuit network and media streams from a packet network (e.g. Real time Transport Protocol (RTP) streams in an IP network).

Considering the fact that the prior MMS centers do not utilize the known session initiation protocol (SIP) which is an important feature of the developing IMS system mentioned above, it would be advantageous to define a new functionality that can be added to the known MMSC. This functionality would enable the MMSC to be able to handle and interface with the mobile multimedia architecture as provided by the IMS or similar SIP based network particularly for handling instant messaging and presence services.

A problem with making such an interface is that in SIP networks such as the IMS network mentioned above, when the SIP MESSAGE method is used in a stand alone manner, i.e., out of a session, it is considered by default by the IMS or SIP-based network as being Instant Messaging. Thus, if a SIP MESSAGE method were to arrive at an MMSC, the default Multimedia Message (MM) handshake mechanism would be applied and the Instant Messaging feature would be lost. It would be desirable to be able to keep the Instant Messaging feature assigned by default to the SIP MESSAGE in the IMS or SIP based networks.

Disclosure of Invention

An object of the present invention is to define a new functionality that enables an interface with the mobile multimedia architecture as provided by the IMS or other SIP based network.

According to a first aspect of the present invention, a method comprises the steps of receiving a message including a signaling flag indicative of whether to establish an instant messaging session for instant messages from and to a client user equipment (UE) or to simply forward a message from the UE, and storing and

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forwarding an instant message from the UE after establishing the instant messaging session, or simply forwarding the message including the signaling flag from the UE depending on the signaling flag.

According to a second aspect of the present invention, an apparatus comprises means for receiving a message including a signaling flag indicative of whether to establish an instant messaging session for instant messages from and to a client user equipment (UE) or to simply forward a message from the UE, and means for storing and forwarding an instant message from the UE after establishing the instant messaging session, or simply forwarding the message including the signaling flag from the UE depending on the signaling flag.

In further accord with the first and second aspects of the present invention, the message includes a message body having a field and value together indicative of characteristics of the instant messaging session. The message can be a SIP INVITE and the field be indicated in the Session Description Protocol (SDP) protocol by a single letter m followed by an equal sign followed by the value. The message can be a SIP message including a content-disposition entity or similar header indicative of whether to store and forward the SIP message or to simply forward said SIP message without storage or using SIP message reception and delivery notification. The content-disposition or similar header may for instance have the format: Content-Disposition: instant or Content-Disposition: store&fwd.

The actual specifications in the existing MMSC use specific MMS messages for receiving and sending Multimedia Messages between terminals. Therefore, to extend and ensure the lifetime of the MMSC in the IMS system or other SIP based systems, it will require an interface towards the application server and/or the Serving-CSCF or any SIP server with similar functionality. In using such an interface, the MMSC will receive orders for establishing a messaging session between IMS terminals. In IMS the session is established using SIP methods. The messaging session can be of the Instant Messaging type where there is no session established and the messages are exchanged using the SIP MESSAGE method or the Internet Message Transfer Protocol (IMTP). In case the user wants to establish a messaging (chat) session the information is passed from the Application Server, the S-CSCF or a SIP server to the MMSC. Therefore, this element will be included into the MMSC to enable these capabilities into the existing MMS servers.

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The invention defines the functionality that the MMSC needs to include to be able to perform the same messaging services as in the IMS system. The idea is to include a service relay that receives messages from IMS or other SIP systems and maps them into equivalent MMS transactions. The relay should handle all the IMS messages to perform the messaging services in IMS. This functionality permits use of an MMSC in an IMS system. The MMS-IMS relay will require an interface between the application server or the Serving-CSCF (S - Call Session Control Function), or a SIP proxy server with similar functions to the S-CSCF and a message translator. The interface is used to receive the orders for establishing a messaging session or for exchanging the delivery reports and to send notifications about received MM to IMS terminals or other SIP devices. The Application Server (AS) or S-CSCF will send the addresses of the participants and their terminal capabilities. Afterwards, the MMSC should be able to receive and send SIP methods (MESSAGE) or IMTP messages (Internet Message Transfer Protocol is another transport protocol proposed for messaging in IETF and probably will be adopted in the 3GPP IMS, or it will be a similar congestion safe transport protocol used for messaging sessions). Therefore, the MMS-IMS relay includes two new features. Firstly, it includes the interface between an MMSC and an AS and/or a Serving-CSCF or similar SIP server. This interface is used for exchanging orders for establishing a messaging session among multiple users. The interface is also used for receiving control messages and delivery of received MM notifications from the MMSC to the AS or to the S-CSCF. For the case where the user sends single messages (using the SIP MESSAGE method) through the AS or S-CSCF and it is delivered via the MMSC, the MMSC will send back the delivery report to the AS or S-CSCF and from there it will be forwarded as normal SIP NOTIFY method or SIP MESSAGE method with specific content type. Therefore, this relay enables the use of an MMSC for messaging delivery using its default transport and then convert back to SIP the delivery reports. The relay also permits to send the MESSAGE or IMTP messages directly from the terminal to the MMSC. The MMSC then will forward the messages to the rest of participants, which information is received via the new interface from the Application Server or the S-CSCF. The relay also permits to send the MESSAGE or similar SIP message (NOTIFY) to IMS terminals as a notification when a MM is received.

This invention defines a new set of SDP media types to indicate what kind of messaging session the user wants to establish via the MMSC. The invention also

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defines a set of extensions to be included in the SIP MESSAGE to inform either the Application Server or the MMSC directly about the type of messaging session (Instant or Store and Forward). This invention defines also the usage of SIP MESSAGE for MM reception notification as an evolution of the SMS bearer.

According further to the foregoing and as further detailed below, it will be understood that the invention defines the functionality that will allow the MMS Center (MMSC) to perform an instant messaging service. It defines new parameters to be included into the SDP part of a session initiation protocol (SIP) message when the user wants to establish an instant messaging session among multiple users. The messaging session is established via the Serving-CSCF (Serving Call Session Control Function) and/or the Application Server (AS) or any SIP server with similar functionality (SIP Proxy server). To do this, a control interface is defined between one of these network elements and the MMSC. Thus, the MMSC will receive the orders from the AS with the terminal information of all the participants. The control includes also the information for storage of the messages and whether the user that establishes the session wants to keep a message history. In that case, the messages will be stored for a while in the MMSC and the MMSC relay implements the required functionality to inform the user about history reports (using SIP SUBSCRIBE/NOTIFY with specific Event headers or other SIP messages with similar functionality). In case the messaging session is purely "Instant" the control should indicate to the MMSC that the messages have to be delivered immediately, even if the default MMS handshake with the terminal indicates to "Defer" the message. The "Defer" is a message part of the handshake between terminal and MMSC. It is sent from the terminal to the MMSC for indicating that terminal cannot handle the message and prefers to fetch it later. Therefore, this mechanism provides the Store and Forward mechanism in MMSC and, if applied, the messaging cannot be considered instant. It will be an implementation issue whether the MMSC manufacturer still wants to keep that feature for Instant Messaging. As mentioned above, in SIP networks (IMS) when the SIP MESSAGE method is used as standalone out of a session, it is considered by default as Instant Messaging. Thus when the SIP MESSAGE method arrives to the MMSC the default MM handshake mechanism is applied and the Instant Messaging feature is lost, so it is necessary to explicitly indicate that the MESSAGE should be delivered instantly. In case there is no session establishment, the message (SIP method MESSAGE) will be sent through the AS or directly to the MMSC. In this case, if the

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user wants to perform the same mechanism, either the store-and-forward feature (default according to MMS specifications) or "Instant" messaging, the control information would be embedded into the SIP MESSAGE. This invention shows how to use the "Content-Disposition" or alternative SIP header with similar functionality extended with new values for example named "instant" and "store&fwd". Whether this is the parameter to be used and the header to include that parameter will depend on IETF standardization. Nevertheless, as an example this could be a logical way of implementing this feature. Thus when the MMS center will receive the MESSAGE with the appropriate value in the "Content-Disposition" header it will perform either a store-and-forward procedure or will send the message without storing in order to keep the Instant messaging feature assigned to SIP MESSAGE in IMS or SIP based networks.

These and other objects, features and advantages of the present invention will become more apparent in light of the following detailed description of a best mode embodiment thereof, as illustrated in the accompanying drawing.

Brief Description of the Drawings

Fig. 1 shows a store-and-forward server integrated into an IMS system, according to the present invention.

Fig. 2 shows session messaging using the store-and-forward server of the present invention in an IMS system.

Fig. 3 shows instant messaging carried out in an IMS system using the store-and-forward server of the present invention.

Fig. 4 shows signaling details of a messaging session according to the Session Initiation Protocol (SIP), according to the present invention, using a store-and-forward server.

Fig. 5 shows a SIP INVITE message such as that provided from the Call Processing Server (CPS) which is the logical name for the entity that contains the CSCF among other related elements such as the Home Subscriber Server (HSS) of Fig. 4 to the AS of Fig. 4.

Fig. 6 shows an INVITE message sent back from the application server (AS) of Fig. 4 to the CPS after receiving information from the MMSC.

Fig. 7 shows messaging via the application server, according to the present invention.

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Fig. 8 shows messaging session via the MMS using the SIP method MESSAGE.

Fig. 9 shows messaging session via the MMS using the messaging transport protocol (IMTP).

Fig. 10 shows details of a MESSAGE with the content-disposition entity header utilized to signify the nature of the message, i.e., an instant message, according to the present invention.

Best Mode for Carrying Out the Invention

Fig. 1 shows a store-and-forward messaging approach applied to the IMS architecture and particularly to a CPS thereof, such CPS including at least a CSCF and perhaps also an HSS. A mobile originating SIP message is provided on a line 10 from user equipment (UE) 12 to a local CPS 8. As mentioned above, multimedia messaging being developed by the 3GPP includes the IETF's Session Initiation Protocol (SIP) disclosed in RFC 3261. It should be understood that the present invention is applicable to other SIP based networks using MMSC or MMSC-like functionality used for implementing messaging services. The SIP is an application-layer control (signaling) protocol for creating, modifying and terminating sessions with one or more participants. Such sessions include Internet multimedia conferences, Internet telephone calls and multimedia distribution. Members in a session can communicate via multicast or via a mesh of unicast relations, or in combination of these. SIP invitations used to create sessions (including messaging) carry session descriptions, which allow participants to agree on a set of compatible media types. SIP supports user mobility by proxying and redirecting requests to the user's current location. Users can register their current location. SIP is not tied to any particular conference control protocol. SIP is designed to be independent of the lower-layer transport protocol and can be extended with additional capabilities (quoted from the abstract of RFC 3261).

In instant messaging there is the possibility to simply forward a message from a sender to a receiver without keeping a copy in the network. On the other hand, there are variants of instant messaging, such as "chat" that require the network to store and maintain instant messages and messaging sessions that are established like another media session using SIP as the signaling protocol. The SIP message from the UE 12 to the CPS 8 on the line 10 includes, according to the present invention, a store-and-

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forward signaling flag which indicates to the network how to treat the message. In this way, the network can determine whether it should simply forward the message to the next entity on its way to the intended recipient or whether a session should be established for the exchange of instant messages between the UE 12 and the intended recipient or multiple recipients. In both cases, a store-and-forward mechanism would be appropriate and the new functionality can adapt existing MMSCs to fulfill this role in conjunction with the CPS 8, according to the present invention.

In case the SIP message on line 10 (MESSAGE method) includes the store-and-forward flag, the CPS 8 may forward the SIP message on the line 10 further on a line 16 to a store-and-forward server 18 (such as an MMSC adapted for this purpose with new functionality), which may be present in an originating network 20. The proposed server (enhanced MMSC) can interpret the SIP message to determine if the message needs to be sent to multiple recipients and can perform various group management functions by accessing other servers for obtaining addressing information (i.e. when the SIP message includes a URI that includes multiple recipients) as well as value-added services, as appropriate. After evaluating the SIP message provided by the CPS on the line 16, and storing the message at server 18, (if the flag so indicates) the server 18 then provides the SIP message (with the flag still indicating a store-and-forward mechanism is desired), on a line 22 back to the CPS 8. It should however be realized that the illustrated store-and-forward server 18 can be implemented within the CPS or within a CSCF residing therein or in another SIP server.

In any event, the CPS 8 then provides the SIP message on a line 24 to a terminating network 26 where a terminal of the intended recipient is accessible. If the terminal of the intended recipient is a new IMS or SIP client that only has an MM client and the SIP client for signaling but it does not have any other messaging application (SMS, WV, etc), the SIP MESSAGE could contain the content or a notification that could be used as a replacement for an SMS bearer. In that case the MM terminal will receive the notification in the SIP MESSAGE but will fetch the MM from the MMSC using a normal MM procedure as described below. The connection between the originating network 20 and the terminating network 26 need not be direct and multiple intermediate network nodes may be involved in the routing of the SIP message on the line 24 over various transport technologies. A CPS 28 within the terminating network 26 receives the SIP message with the store-and-

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forward flag set to indicate that the message should be stored and the CPS sends this message on a line 30 to a store-and-forward server 32 within the terminating network 26 that can be the MSMC server or an alternative entity. The appropriate storage function is carried out in this server 32 as indicated by the flag. The SIP message is then provided on a line 34 back to the CPS 28 where it is sent out on a line 36 to a terminating terminal such as an IMS terminal 38 as shown. The IMS terminal 38 can obtain messages through the store-and-forward server 32 such as by an HTTP GET request as part of the normal MM procedure after receiving the notification in the SIP MESSAGE or similar SIP method (NOTIFY) or as part of another messaging client that uses HTTP such as that shown on a line 40 between the IMS terminal 38 and the store-and-forward server 32. The store-and-forward server 32 may be according to the known proprietary MMSC adapted to use SIP.

Thus, according to the embodiment shown in Fig. 1, the SIP message on the line 10 is sent from the mobile originating terminal 12 to the SIP address of a mobile terminating (MT) terminal 38 using the IETF SIP messaging method. According to the present invention, based on the setting of a store-and-forward flag (or corresponding indicator) provided in the SIP message, the message can be optionally routed to a store-and-forward server 32 in the terminating network 26 or also to a store-and-forward server 18 in the originating network if the operator wants to provide some value-added services. In the terminating side 26, the message is always routed to the store-and-forward server 32. The terminating store-and-forward server 32 notifies the recipient using SIP messages 34, 36, where only the sender, subject, size and URL (possibly also other data) is sent. The actual message is not sent at this point. Based on the information provided on the line 36, the recipient will fetch the multimedia message from the store-and-forward server 32 using, e.g., HTTP, as indicated on the line 40. If the notification fails, an alerting flag is set in an HSS 42, as signaled by a signaling message on a line 44 from the server 32 to the HSS 42. HSS will alert the store-and-forward server when a subscriber is registered again. This means that the user is not reachable or out of coverage and the SIP message did not reached the terminal. Thus, the HSS will alert the store-and-forward server when the terminal is reachable for sending the notification to fetch the stored message. The MMSC can also utilize the specified interface with the Application Server (or similar SIP server) for subscribing (i.e. using SUBSCRIBE message) to the status of the user. Thus, other IMS entities (HSS or an alternative server) will take care of updating the

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user status and when the user becomes available the MMSC will receive a notification (i.e. NOTIFY) from the AS indicating that the user is available for receiving the notification signalling 34, 36. After the message has been fetched, a delivery report will be sent to the originating party, as in MMS, using either a SIP MESSAGE or SIP NOTIFY (if the send message to the store-and-forward server causes an implicit SIP subscription to the delivery report event).

The message notification part can also be implemented by mandating all the terminals to subscribe to the store-and-forward server. If that is done, the recipients would be notified when the message arrives. A drawback of such a solution, however, is that the store-and-forward server needs to maintain states for all users, even if only a fraction of them will receive messages.

Yet another method of implementation would be that the store-and-forward server would subscribe to an HSS or presence server or any other entity that would know when the recipient would be available. A drawback of this implementation mode is that such a mechanism requires that the actual interface between the MMSC and the Application Server should be used to communicate also with the Presence Server and furthermore, presence information would not be 100 percent reliable for this purpose.

The Application Server 232 of Fig. 1 could be a presence and/or location server or the S-CSCF or other SIP server could embody such functionality or have access to such information about user status or availability or appropriateness/desirability to receive a message notification. Communications between the MMSC and such an application server, S-CSCF or other SIP server can be done using SIP methods (SUBSCRIBE/NOTIFY) while the notification mechanism to the user can be done using the SIP method (MESSAGE or NOTIFY). Interactions can be set up with other directory or network entities such as the HSS of Fig. 1 for receiving information while user status or using HSS information to trigger messaging activity, when it becomes known that a user is registered or available for receiving a message notification.

Fig. 1 shows each of the store-and-forward servers 18, 32 implemented using the known MMSC in conjunction with an IMS Application Server 232. It also shows details of the packet switched part of a UMTS core network interfacing with a Radio Network Controller (RNC) and a base station (called "Node B" in 3GPP). The message delivery is shown starting on a radio link 48 from the MO terminal 12 to the

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base station (BS) and then on a line 50 to the RNC. From there it is provided by the RNC on a line 52 to an SGSN (Serving GPRS Support Node) which provides it on a line 54 to a GGSN (Gateway GPRS Support Node). From the GGSN it is provided on the line 10 to the CPS 8 and from there to the Store and Forward Server 18 as described previously, and so on.

Fig. 2 is similar to Fig. 1 but shows a messaging session scenario. A Mobile Originating (MO) terminal 200 provides a wireless signal on a link 202 to a base station 204 which provides a SIP INVITE message on a line 206 to a radio network controller 208. The SIP invite may include in the message body a description according to the Session Description Protocol (SDP) about the media to be exchanged, such as RTP payload type, addresses and ports. In this case the SDP will indicate that the MO wants to establish a messaging session and the store and forward flag would be included as part of the session description. The SDP protocol is specified by the IETF in RFC 2327. The RNC 208 provides the SIP signaling on the line 210 to a core network (CN) 212 which may include an SGSN 214 and a GGSN 216, according to the UMTS specifications of the 3GPP. These are designed to handle Internet protocol (IP) packets and to route them to the appropriate destinations on the Internet. After such Internet routing, the message sent by the mobile originating terminal 200 will ultimately reach one or more local networks at the locale or locales of one or more destination mobile terminating terminals. Such a local network is shown in general as a network 218 for receiving the SIP signaling on a line 219. Within the network 218 is a CPS 220 similar to the CPS 28 of Fig. 1. Such a CPS 220 may include a CSCF 222 and an HSS 224 interconnected by a Cx interface to form the CPS 220. The CSCF 222 of the CPS 220 may provide the SIP signaling on a line 230 to an application server 232, such as shown in the 3GPP TS 23.218 v5.0.0 (2002-03) entitled, *Technical Specification Group Core Network; IP Multimedia (IM) Session Handling; IP Multimedia (IM) Call Model; Stage 2 (Release 5)*.

According to the present invention, a store-and-forward device 236 such as the prior art MMSC is adapted and interfaced by means of an interface 238 for session control and delivery reports between the application server 232 and the store-and-forward device 236 and for user status subscription/notification to/from the Application Server acting as Presence server. The application server 232 may be used for analyzing the SIP signaling and checking the characteristics of the session to be

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established. It checks the SDP and finds the store and forward flag included as part of the session description indicating that the messages should be stored and forwarded. The application server modifies the content of the SDP to include the enhanced MMSC as the messaging server within the session. After the SDP is changed, the SIP signaling message is sent back on a line 239 to the CSCF to continue the session setup with the rest of terminals, as shown in a multicast session by means of signaling lines 240, 242, 244 to mobile terminating IMS terminals 246, 248, 250, respectively. After the messaging session setup, message delivery transactions will take place to the mobile terminating IMS or SIP based terminals 246, 248, 250 via the store-and-forward device 236 rather than the CSCF 222 or the application server 232 in order to allow the possibility of sending some of the messages in a converted format such as the format already known for use between an MMSC and a mobile terminal. Consequently, the actual messages, as opposed to the SIP signaling, are shown in Fig. 2 propagating from the mobile originating terminal 200 over the wireless link 202 from the base station 204 on a line 260 to the RNC 208 and from there on a line 262 through the packet switch of the core network 212 on a line 264, and from thence on a line 266 to the store-and-forward device 236, where they are relayed on respective links 268, 270, 272 to the mobile terminating terminals 246, 248, 250. These messages can be in the legacy format supported by the prior MMSC or in the RTP format (or the like) specified by the SDP in the SIP message body. The signaling on the lines 240, 242, 244 would only be provided in SIP signaling format to a given MT terminal in case it is able to use IP.

As shown in Fig. 3, it is not necessarily the case that a session is to be established because there may only be a need for forwarding the message to the intended recipient or recipients without any storage required. Fig. 3 describes with more detail the scenario depicted in Fig. 1, including IMS and legacy MMS terminals. In this case, as a part of the Store and forward mechanism a delivery report mechanism is included. Similarly to the SMS, the IMS messaging can define a delivery report mechanism that will be sent to the user using SIP method (MESSAGE, NOTIFY or others with similar functionality). The basis is the same as defined in Fig. 1 for the store and forward mechanism. Instead of a store-and-forward parameter there would be included a delivery report parameter. The rest of the procedure is similar to the one depicted in Fig.1. In Fig. 3, there is no session establishment on the interface 238 between the application server 232 and the store–and-forward device

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236 such as the MMSC. There is no SIP signaling between the AS 232 and the legacy MT (MMS) terminals 246, 248, 250 but only delivery of the message itself to the MT terminals from the MMSC 236 on links 280, 282, 284, respectively. The SIP messaging with the new (IMS or SIP based) MT terminals 252, 254 follow the procedure indicated in Fig 1. The SIP message is forwarded on line 290 to the Application server 232 that checks the store and forward flag and sends the message to the MMSC server. The message is sent back on line 290 to the CSCF that will forward it on lines 286, 288 to the MT terminals 252, 254. When the MMSC receives the delivery report from MT terminals 246, 248, 250 on lines 280, 282, 284, the MMSC will so indicate to the AS 232 on line 238. The terminals 252 and 254 are IMS and they do not have a delivery report mechanism defined yet. This approach will facilitate the addition of such a Message delivery parameter in the parameters as well. Thus, when the terminals 252, 254 get the message and send a delivery report back to the CSCF, it will be forwarded to the AS 232 that will combine them and send the report to the Mobile Originating (MO) terminal 200. The AS 232 is shown providing SIP delivery notification (NOTIFY method but it is not limited to that and other SIP method such as MESSAGE with specific content type could used as well) signaling in the reverse direction, i.e., towards the MO terminal 200 on lines 292, 294, 296, 298 after being notified of delivery by the MMSC.

From the foregoing description and Figs. 1-3 it should be evident that an MMS Center can be advantageously adapted to be integrated into IMS or SIP based systems. To do this, the invention shows that the functionality of the MMS center can be adapted to be able to perform the same messaging services as in IMS system while still being able to interface with mobile terminals according to the MMS methodology. The idea is to include a service relay that receives messages from IMS or similar SIP networks and maps them into equivalent MMS transactions. The relay should also handle all the IMS messages to perform the messaging services in IMS. This invention permits the same MMS centers to be upgraded and used in the IMS systems with IMS capable terminals and in the MMS system with legacy MMS Terminals. The MMS-IMS relay will require an interface between the application server or the Serving-CSCF and a message translator. The interface is used to receive the orders for establishing a messaging session, for exchanging delivery reports or message reception notifications. The Application Server or S-CSCF will send the addresses of the participants and their terminal capabilities. Afterwards, the MMS

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Center should be able to receive and send SIP methods (MESSAGE), IMTP messages (another transport protocol proposed for messaging in IETF that probably will be adopted in IMS) or messages from any similar transport protocol specifically for exchanging the messages content but not the signalling. Therefore, the MMS-IMS relay comprises two new features. Firstly, the interface between the MMS center (MMSC) and the Application server and/or the Serving-CSCF or other SIP servers. This interface is used for exchanging orders for establishing a messaging session among multiple users. The interface also is used for receiving control messages, user status information and delivery notifications from the MMS Center 236 to the application server. Thus, in case that the user sends single messages (using MESSAGE method) through the Application server or S-CSCF and it is delivered via the MMS Center, the MMS Center will send back the delivery report to the Application or S-CSCF and from there it will be forwarded as normal SIP NOTIFY method back to the originating mobile terminal 200. Therefore, this relay enables the use of the MMS center for messaging delivery using its default transport and then a conversion of the delivery reports back to SIP. The relay also permits sending of the MESSAGE or IMTP messages directly from the terminal to the MMS center. The MMS center then will forward the messages to the rest of participants, which information received via the new interface from the Application Server of the S-CSCF or from other server that provides information about the destination address (i.e. group server or directory server that stores the recipients URIs). The relay also permits sending of a SIP MESSAGE or other SIP method used for notification to the terminal about reception of a new message instead of using the SMS notification.

As will be appreciated from the foregoing, the actual specification in the prior art MMSC uses specific MMS messages for receiving and sending Multimedia messages between terminals. Therefore, to extend and ensure the lifetime of the MMSCs in the proposed IMS systems, according to the teachings hereof, an interface towards the application servers and/or the Serving-CSCF is required. Using that interface the MMS center will receive orders for establishing a messaging session between IMS terminals and will also use MMS for message delivery and notification to legacy MMS terminals. With this interface and the MMS relay the MMSC will be enhanced with additional functionality wherein SIP message can use a store-and-forward parameter to store the message and notify the terminal to fetch it. In IMS the session is established using SIP methods. The messaging session can be of the Instant

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messaging type where there is no session established and the messages are exchange used the SIP MESSAGE method, IMTP protocol or similar message transport protocol. In case the user wants to establish a messaging (chat) session the information is passed from the Application Servers or S-CSCF to the MMS Center. Therefore, this element will be included into the MMS Center to enable these capabilities into the existing MMS servers.

Fig. 4 shows a message exchange for a messaging session such as might be used in Fig. 2 except for only two IMS terminals (IMS-B, IMS-C) on the right hand side, as opposed to three (246, 248, 250) in Fig. 2. IMS-A is similar to the mobile phone 200 of Fig. 2 and provides a SIP INVITE message on a line 400 which may propagate over a network such as shown in Fig. 2 to a CPS such as the CPS 220 of Fig. 2. The CPS provides the SIP INVITE (see Fig. 5) on a line 402 to the store-and-forward server 404 of the present invention. This server 404 may include an application server (AS) such as the application server 232 of Fig. 2 in combination with an MMSC 236. Assuming a configuration such as the store-and-forward server of Fig. 2, the SIP INVITE signal on the line 402 is provided to the application server (AS) which in turn provides an MMS configuration signal on a line 406 to the MMSC. The MMSC in turn responds with a signal on a line 408 back to the application server indicative of RTP ports to be included in the SDP message body of the SIP INVITEs to be sent to the IMS-B and IMS-C by the CPS. Upon receipt of the signal on the line 408, the application server (AS) sends an INVITE on a line 410 augmented by the information provided by the MMSC (see Fig. 6) to the CPS such as the CPS 220 of Fig. 2. The CPS in turn sends a SIP INVITE message on a line 412 to IMS-B which may be similar to an IMS terminal 246 in Fig. 2. The IMS-B may respond with a status code 100, i.e., "trying" which is equivalent to a ringing signal. Upon answering, the IMS-B will send a SIP: 200 OK signal indicating success with the 200 status code, also to the CPS. The CPS will in turn inform the application server (AS) by means of a signal on a line 418 that the IMS-B has answered. The CPS will then acknowledge to the IMS-B that it has received its indication that it has answered the call as shown by an acknowledgement signal (ACK) on a line 420. At the same time as the previously described signaling to and from IMS-B or subsequently, the CPS may also send a SIP INVITE signal on a line 422 to IMS-C which may be similar to the MT terminal 248 of Fig. 2. Upon receiving the INVITE, the IMS-C will send back a "trying" signal on a line 424 and in this case answer the

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call and signal back the fact that it has answered on a line 426 in the form of a SIP status code 200 OK to the CPS. The CPS informs the application server (AS) of the fact that the IMS-C has answered by sending a signal on a line 428 to the AS. The AS then informs the MMSC that the IMS-B and IMS-C are now active, as shown by a signal on a line 430 from the AS to the MMSC. An acknowledgement is also sent to the IMS-C by the CPS as shown by a signal on a line 432. The CPS will then conclude the message exchange by sending the SIP status code 200 to the MO IMS-A as shown by a signal on a line 436. The IMS-A acknowledges with a signal on a line 438 to the CPS. Subsequently, the MMS can deliver message transactions using the SIP method (MESSAGE) or the selected messaging transport protocol (e.g. IMTP or other) as shown, e.g., in Figs. 8 and 9.

The SIP invite signal on the line 402 of Fig. 4 is shown in detail in Fig. 5 with particular emphasis on the SDP portion thereof showing a flag at the end of the message body. It uses a "m" field with a value as shown "messaging 3456 IMTP/instant MESSAGE/instant html". This value includes a number of separate pieces of information separated by spaces. The first value "messaging" indicates a messaging session. The "m" is used in SDP to indicate what media will be exchanged in the session (e.g. m=audio, m=video, m=message). Additionally, the SDP should include the port number and IP addresses used for exchanging the media between terminals through the messaging server (S&F server = MMSC). Thus, the incoming SDP indicated the IP address of IMS-A (e.g. "o" parameter in SDP indicates origin of the session. o=IMS-A.nokia.com) terminal and the port (e.g. 3456). When the SDP is analyzed by the S&F server (AS+enhanced MMSC) it is replaced the initial IMS-A address an port by the MMSC address (e.g. conference.nokia.com) and the port (5680). This is for setting the media (messaging) session between IMS-A, IMS-B and IMS-C terminals through the S&F server in the middle. The next piece of information "3456" will have to be defined and standardized at IETF. The format of "m" parameter is formed by: media type, port and transport (e.g. m= audio 49170 RTP/AVP 0) Therefore, "IMTP/instant" means that the IMTP message transport is being called on to be used in an instant messaging session. Similarly, "MESSAGE/instant" means MESSAGE is used as transport protocol for exchanging the media including the "instant" feature to the delivery. The next piece of information "html" indicates that the message is to be in the html format.

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Fig. 6 shows the invite message sent back from the application server on the line 410 to the CPS after having received input on the line 408 from the MMSC. I.e., it includes the type of media that will be exchanged in the session (messaging) the port where the messaging server will receive the media (5680) and the transport protocol that will be used (IMTP/instant or MESSAGE/instant).

While Fig. 4 showed an example of how the store-and-forward server of the present invention fits into a signaling scenario for a messaging session, Figs. 8-9 show messaging scenarios that would follow such a signaling scenario. On the other hand, Fig. 7 shows a instant messaging session according to Fig. 3 where the message is sent from the terminal to the CPS and from there to the MMSC that converts it into MMS to be sent to MMS terminals 246, 248, 250. In case the message is sent to one or both of the IMS terminals 252, 254 it does not need to be converted into MMS message and is sent on the lines 286, 288 as shown. It is to be noted that Instant messaging does not need the previous signaling of Fig. 4 for session establishment. The MO terminal just sends a MESSAGE to the remote MT terminals. Session messaging needs the signaling of Fig. 4 and then a transport protocol for the messages that can be IMTP or MESSAGE as well over TCP or any congestion safe protocol defined at the IETF for messaging. Thus, MESSAGE can be used for instant messaging and also as transport like IMPT.

For instance, Fig. 7 shows messaging via the application server wherein both the CPS and the IMS-B and IMS-C communicate a message using the legacy MMS message with the CPS acting as an intermediary between the SIP and the MMSC, i.e., serving as a translator. The proposed functionality of converting SIP message into MMS message can either reside in the CPS (at the AS) or at the MMSC depending on product implementation. The IMS-A, on the other hand, provides a SIP message on a line 700 to the CPS. The CPS does a translation and in turn provides an MMS send signal on a line 702 to the MMSC indicating that the message should be sent to both IMS-B and IMS-C. The MMSC does this with an MMS "sending" message on a line 704 and on a line 706 to the IMS-B and IMS-C, respectively. The IMS-B sends back an acknowledge signal on a line 708 according to the MMS protocol used for exchanging MMS messages and the IMS-C likewise sends an acknowledge on a line 710 back to the MMS. The MMSC sends a confirmation signal on a line 712 back to the CPS which in turn does a translation and sends a SIP status code 200 indicating success on a line 714 back to the IMS-A.

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It should be realized that the translation of Fig 7 can be handled at the CPS or at the MMSC. If done at the MMSC it would affect the flow of signalling shown between the CPS and the MMSC. The conversion is shown in the figure as being done at the CPS but if the conversion is done at the MMSC then the MESSAGE and 200 OK signals should go also between CPS and MMSC and there need be no MMS send or confirmation.

Fig. 8 shows another scenario but this time with session messaging via the MMSC using the SIP method MESSAGE as transport protocol. Figure 9 shows another scenario of session messaging via MMSC using IMTP as transport protocol. In these two scenarios the session has been established indicating in the SDP that the MMSC will be used as intermediate messaging server and either the IMTP or MESSAGE method will be used as transport. The SIP MESSAGE is provided on a line 800 from the IMS-A to the MMSC. In this case, the MMSC is able to interpret the SIP method MESSAGE and, in response, provides the message according to the MMS protocol "sending" on a line 802 to the IMS-B and likewise on a line 804 to the IMS-C. Each of the MT terminals respond with an acknowledge signal according to the MMS protocol on lines 806, 808, respectively. In response to the acknowledge signals, the MMSC sends separate confirmation signals on lines 810, 812, respectively to the CPS indicating acknowledgement by IMS-B and IMS-C. The CPS (or the MMSC enhanced with the proposed functionality) converts this signal into the corresponding SIP NOTIFY (or SIP MESSAGE) method on lines 814, 816 back to the MO IMS-A. The MMSC then sends a SIP "200" status code back to the IMS-A as shown by a signal on a line 818.

Fig. 9 is similar to Fig. 8 except using an IMTP (Instant Messaging Transport Protocol) message directly from the mobile originating terminal IMS-A to the MMSC as shown by a signal on a line 900. The signaling sequence between the MMSC and the mobile terminating terminals are IMS-B and IMS-C are the same as shown in Fig. 8 after receipt of the SIP message on the line 800. However, the MMSC confirmation messages of Fig. 8 are not sent back to the CPS, as in Fig. 8, but rather an IMTP status code 200 is provided back to the IMS-A as shown by a signal on a line 910.

For a case of instant messaging (without session establishment) the MESSAGE method is also used for sending the message. In this case since no session is established, it cannot be indicated by the SDP the "instant" nature of the session and the MMSC can be included in the path of the messaging exchange.

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Therefore, Fig. 10 shows how the Content-Disposition entity header (but not limited to this header) can be utilized, according to the present invention, to indicate in the MESSAGE itself the "instant" nature of the message. The other alternative would, e.g., be "store&fwd" according to the present invention, to signify that a store-and-forward message is desired.

Basically we can have instant messages and session based messages. The former uses MESSAGE as such for sending the messages from originating terminal to terminating terminals. How to handle the message should be included somewhere in the headers of the SIP message (MESSAGE). If we want to use the store and forward feature or provide a delivery report concerning the message then such has to be indicated somewhere, preferably in a SIP header within the MESSAGE method (i.e. Content-Disposition or similar). The proposed possibility is to include that characteristic in the header "Content-Disposition" within the MESSAGE (e.g. Content-Disposition=S&F or Content-Disposition=instant). Then the CPS, or more specifically the AS, checks the header and determines that the MMSC has to be involved to store the message or to send the message to other MMS terminals.

On the other hand, session based messaging requires a session establishment before starting the messages exchange. For the session set up the SIP message (INVITE) is used. SDP is used for indicating the transport protocols used for the media exchanges. Again, if the terminal wants to have the Store and Forward or the delivery report feature or some of the terminals are not IMS (SIP) capable but rather MMS-capable, then MMSC should be included as an intermediate server for the message exchange. Both the "instant" and the "S&F" feature should be includable in the SDP as part of the session description. Then the CPS (more likely the AS) checks the content of the SDP and determines that it has to change the SDP to include the MMSC later in the path during the media exchange. The AS modifies the SDP and sends it back to the CPS and continues the normal session setup using INVITE. Once the session is established, the media exchange (messages) starts and either IMTP or MESSAGE over TCP or other congestion sage protocol for messaging can be used for exchanging messages between the terminals where the MMSC is intermediate element because it was previously included during the session set-up by the AS. Thus all the messages go through the MMSC that performs the S&F or message delivery feature that the terminal indicated in the first INVITE.

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Although the invention has been shown and described with respect to a best mode embodiment thereof, it should be understood by those skilled in the art that the foregoing and various other changes, omissions and additions in the form and detail thereof may be made therein without departing from the spirit and scope of the invention.

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Claims

1. Method, comprising the steps of:

receiving a message including a signaling flag indicative of whether to establish an instant messaging session for instant messages from and to a client user equipment (UE) or to simply forward a message from said UE, and

storing and forwarding an instant message from said UE after establishing said instant messaging session, or simply forwarding said message including said signaling flag from said UE depending on said signaling flag.

2. The method of claim 1, wherein said message includes a message body having a field and value together indicative of characteristics of said instant messages or said instant messaging session.

3. The method of claim 2, wherein said message is a SIP INVITE and said field is indicated in a session description protocol (SDP) by a single letter m followed by an equal sign followed by said value.

4. The method of claim 1, wherein said message is a SIP message including a content-disposition entity or similar header indicative of whether to store and forward said SIP message or to simply forward said SIP message without storage or using SIP message reception and delivery notification.

5. The method of claim 4, wherein said SIP message is a SIP MESSAGE or a SIP method with the same functionality (SIP NOTIFY).

6. The method of claim 5, wherein said content-disposition or similar header has a format: Content-Disposition: instant or Content-Disposition: store&fwd.

7. The method of claim 4, wherein said content-disposition header or similar has a format: Content-Disposition: instant or Content-Disposition: store&fwd.

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8. The method of claim 1, further comprising the step of:

determining availability of said UE for receiving said instant messages or for establishing said instant messaging session and carrying out said step of storing and forwarding or simply forwarding said message depending on said availability.

9. The method of claim 8, further comprising the step of:

sending a notification to said UE concerning a stored message after availability of said UE is determined.

10. The method of claim 9, wherein said sending a notification is carried out using a SIP method.

11. The method of claim 10, wherein said SIP method comprises a SIP MESSAGE or SUBSCRIBE/NOTIFY.

12. The method of claim 2, wherein said message is a SIP method and said field is indicated in a session description protocol (SDP).

13. The method of claim 12, wherein extensions to said SDP comprise media descriptors for indicating different types of messaging.

14. The method of claim 13, wherein said different types include instant messaging and session based messaging.

15. The method of claim 13, wherein said SDP is modifiable.

16. The method of claim 1, wherein said message is a SIP message having extensions for implementing instant messaging and store and forward messaging.

17. The method of claim 9, wherein said notification is carried out by an extension to a SIP method (MESSAGE).

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18. Apparatus, comprising:

means for receiving a message including a signaling flag indicative of whether to establish an instant messaging session for instant messages from and to a client user equipment (UE) or to simply forward a message from said UE, and

means for storing and forwarding an instant message from said UE after establishing said instant messaging session, or simply forwarding said message including said signaling flag from said UE depending on said signaling flag.

19. The apparatus of claim 18, wherein said message includes a message body having a field and value together indicative of characteristics of said instant messages or said instant messaging session.

20. The apparatus of claim 19, wherein said message is a SIP INVITE and said field is indicated in a session description protocol (SDP) by a single letter m followed by an equal sign followed by said value.

21. The apparatus of claim 18, wherein said message is a SIP message including a content-disposition entity or similar header indicative of whether to store and forward said SIP message or to simply forward said SIP message without storage or using SIP message reception and delivery notification.

22. The apparatus of claim 21, wherein said SIP message is a SIP MESSAGE or a SIP method with the same functionality.

23. The apparatus of claim 22, wherein said content-disposition header has a format: Content-Disposition: instant or Content-Disposition: store&fwd.

24. The apparatus of claim 21, wherein said content-disposition header has a format: Content-Disposition: instant or Content-Disposition: store&fwd.

25. The apparatus of claim 18, further comprising means for determining availability of said UE for receiving said instant messages or for establishing said

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instant messaging session wherein said means for storing and forwarding said instant message or simply forwarding said message does so depending on said availability.

26. The apparatus of claim 25, wherein a notification is sent to said UE concerning a stored message after availability of said UE is determined.

27. The apparatus of claim 26, wherein said notification is carried out using a SIP method.

28. The apparatus of claim 27, wherein said SIP method comprises a SIP MESSAGE or SUBSCRIBE/NOTIFY.

29. The apparatus of claim 19, wherein said message is a SIP method and said field is indicated in a session description protocol (SDP).

30. The apparatus of claim 29, wherein extensions to said SDP comprise media descriptors for indicating different types of messaging.

31. The apparatus of claim 30, wherein said different types include instant messaging and session based messaging.

32. The apparatus of claim 30, wherein said SDP is modifiable.

33. The apparatus of claim 18, wherein said message is a SIP message having extensions for implementing instant messaging and store and forward messaging.

34. The apparatus of claim 26, wherein said notification is carried out by an extension to a SIP method (MESSAGE).

35. A computer-readable medium encoded with a data structure for carrying out the steps of claim 1 when installed in a device responsive to said message including said signaling flag for storing and forwarding said instant message or simply forwarding said message depending on said signaling flag.

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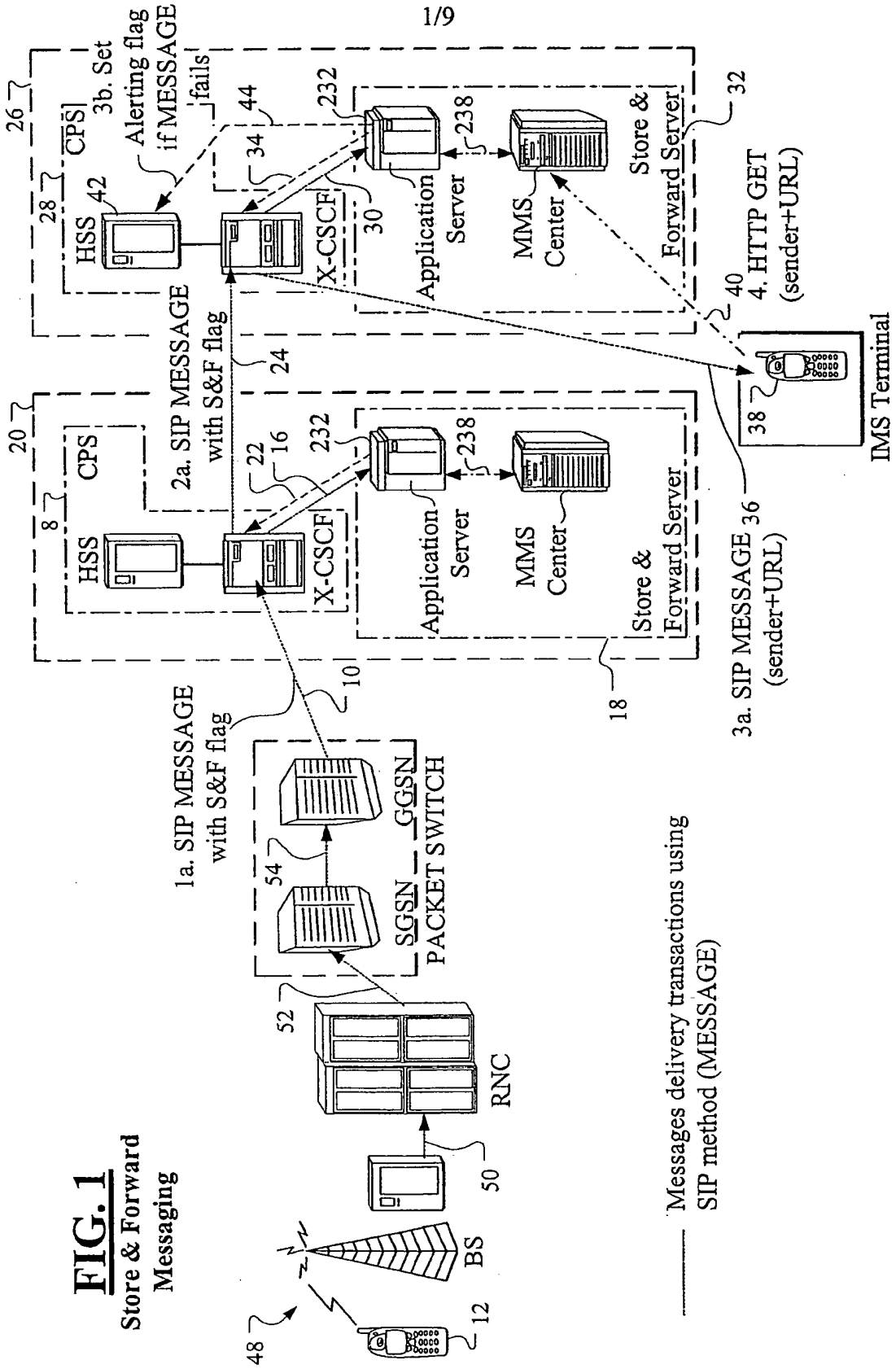

FIG. 1
Store & Forward Messaging

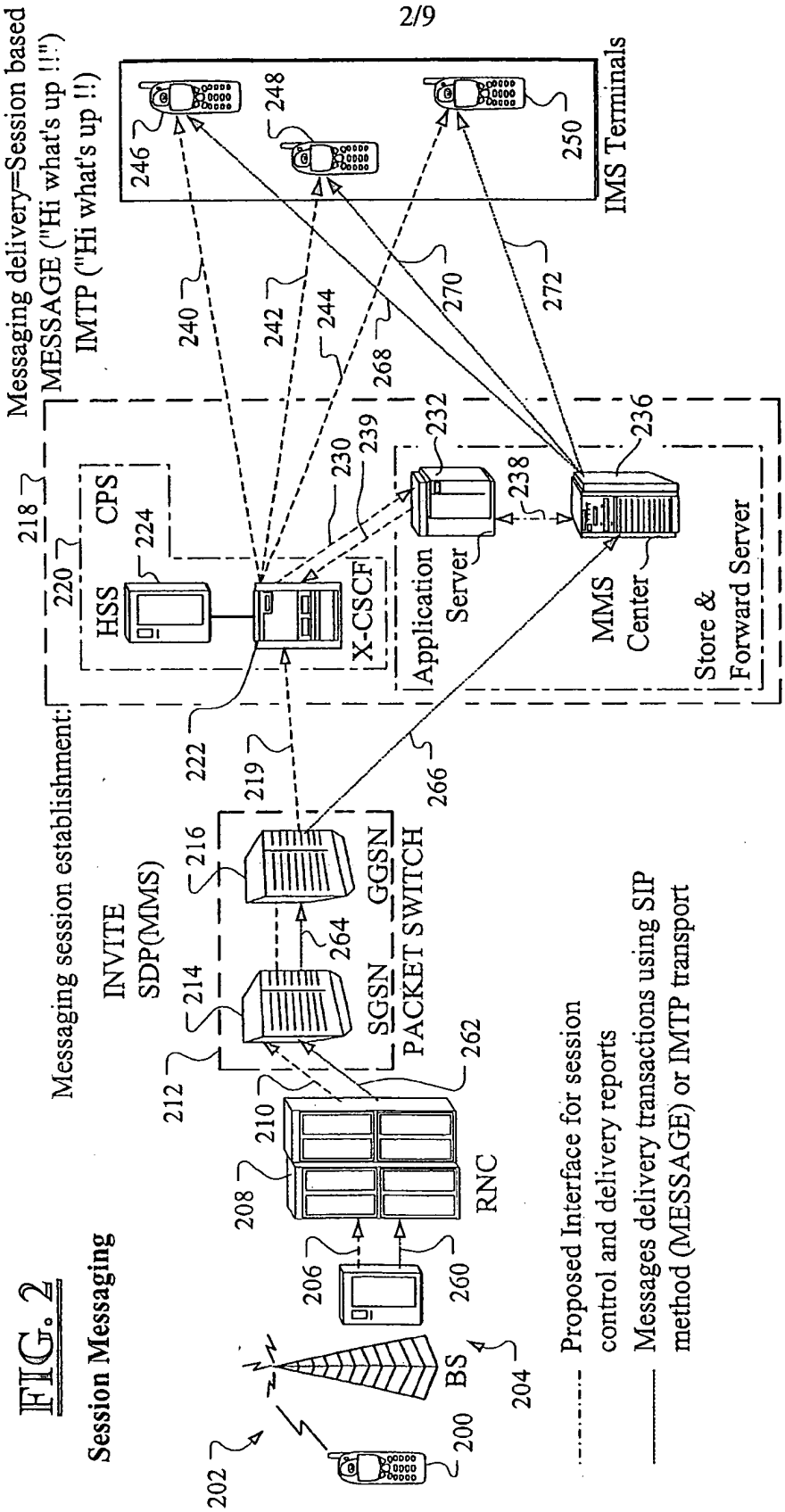

FIG. 2

Session Messaging

NOTE: The new functionality added to the MMS as relay and the interface between the Application Server and the MMSC defines the logical Store&Forward Server. The functionality could be split into network entities such as Application Server or MMSC but that is implementation issue.

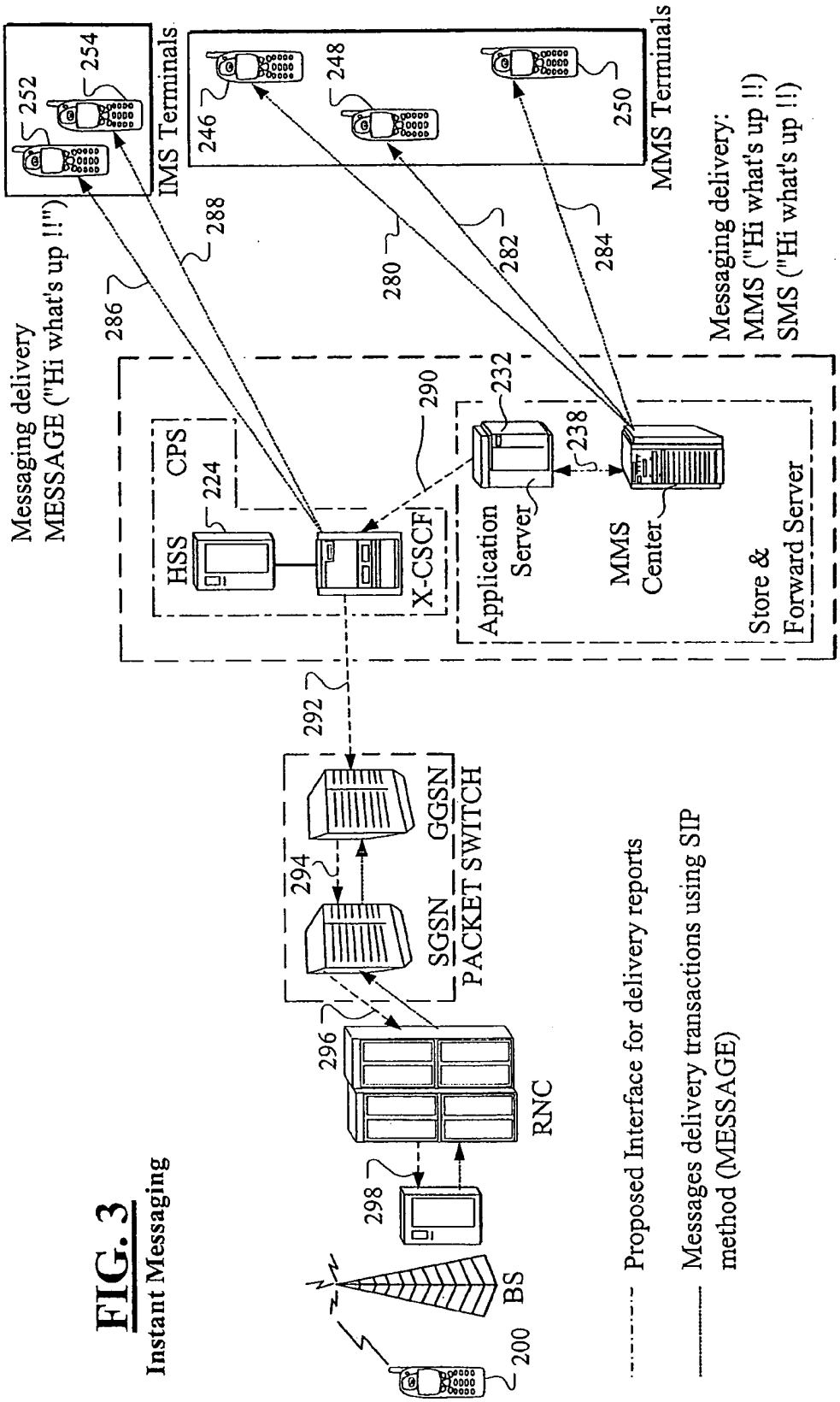

FIG. 3
Instant Messaging

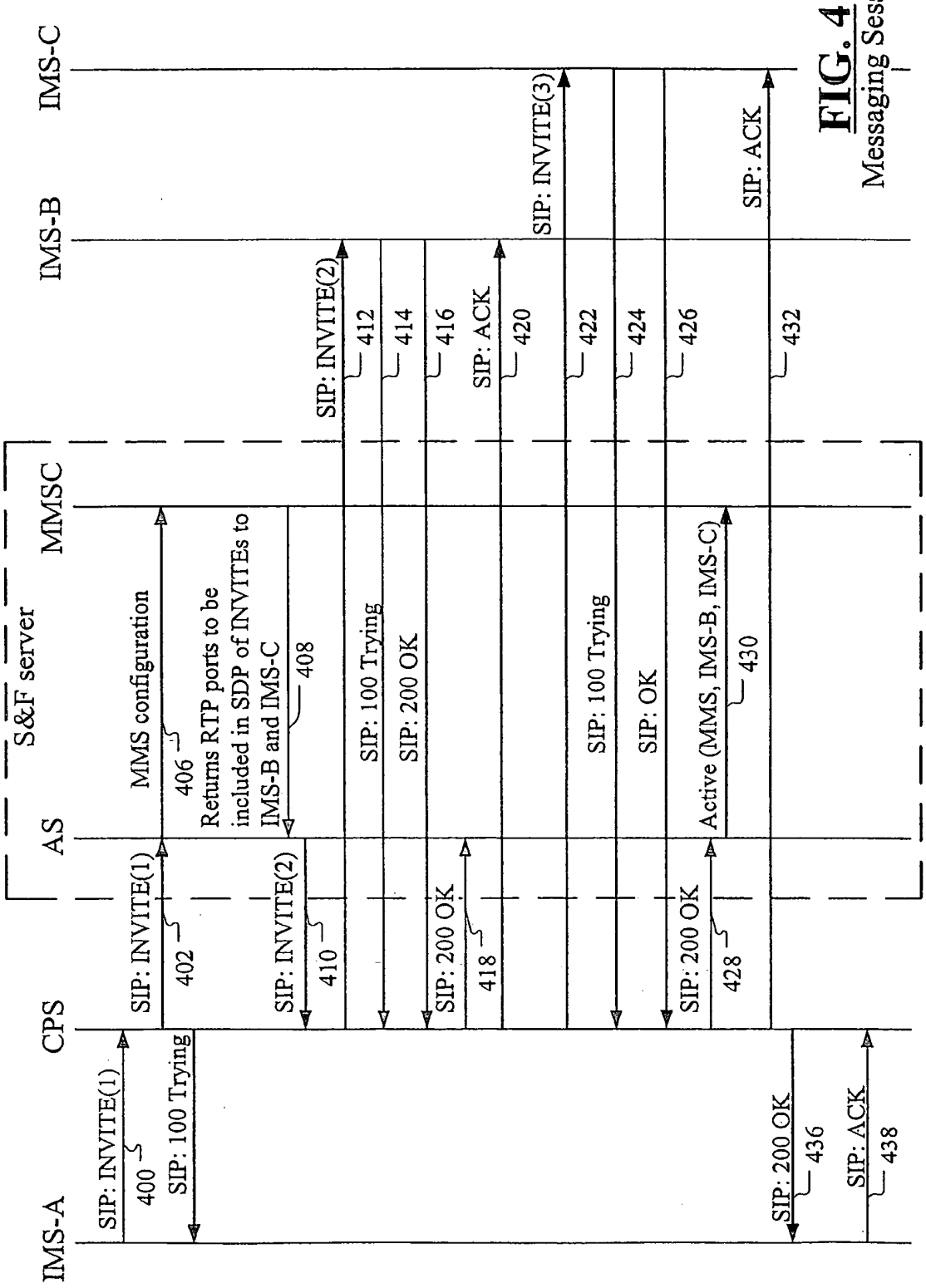

FIG. 4
Messaging Session

(1)

```
INVITE colleagues@conference.nokia.com SIP/2.0
Via: SIP/2.0/UDP IMS-A.nokia.com
To: colleagues@conference.nokia.com
From: Jose <sip:Jose@conference.nokia.com>
Call-ID: 7308601283464482@IMS-A.nokia.com
CSeq: 11 INVITE
Contact: Jose <sip:Jose@IMS-A.nokia.com>
Content-Type: application/sdp
Content-Length: 117

v=0
o=- 0 1 IN IP6 IMS-A.nokia.com
s=session
c=IN IP6 IMS-A.nokia.com
t=0 0
m=messaging 3456 IMTP/instant MESSAGE/instant html
```

FIG. 5

(2)

```
INVITE IMS-B@nokia.com SIP/2.0
Via: SIP/2.0/UDP conference.nokia.com
To: IMS-B@nokia.com
From: Jose <sip:Jose@conference.nokia.com>
Call-ID: 8308179283468563@Iconference.nokia.com
CSeq: 24 INVITE
Contact: Jose <sip:Jose@IMS-A.nokia.com>
Content-Type: application/sdp
Content-Length: 117

v=0
o=- 0 1 IN IP6 conference.nokia.com
s=session
c=IN IP6 conference.nokia.com
t=0 0
m=messaging 5680 IMTP/instant MESSAGE/instant html
```

FIG. 6

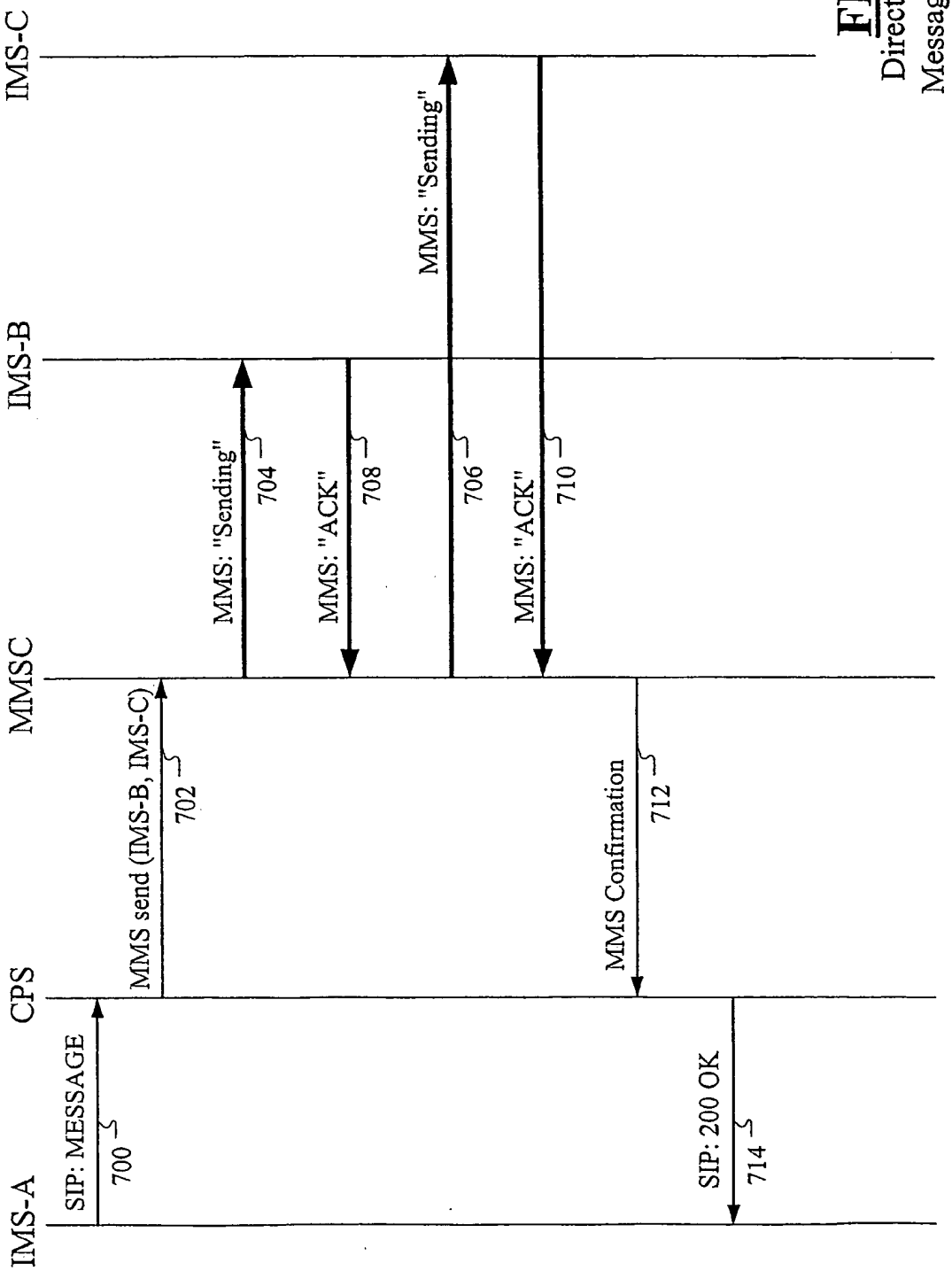

FIG. 7
Direct or Instant Messaging via AS

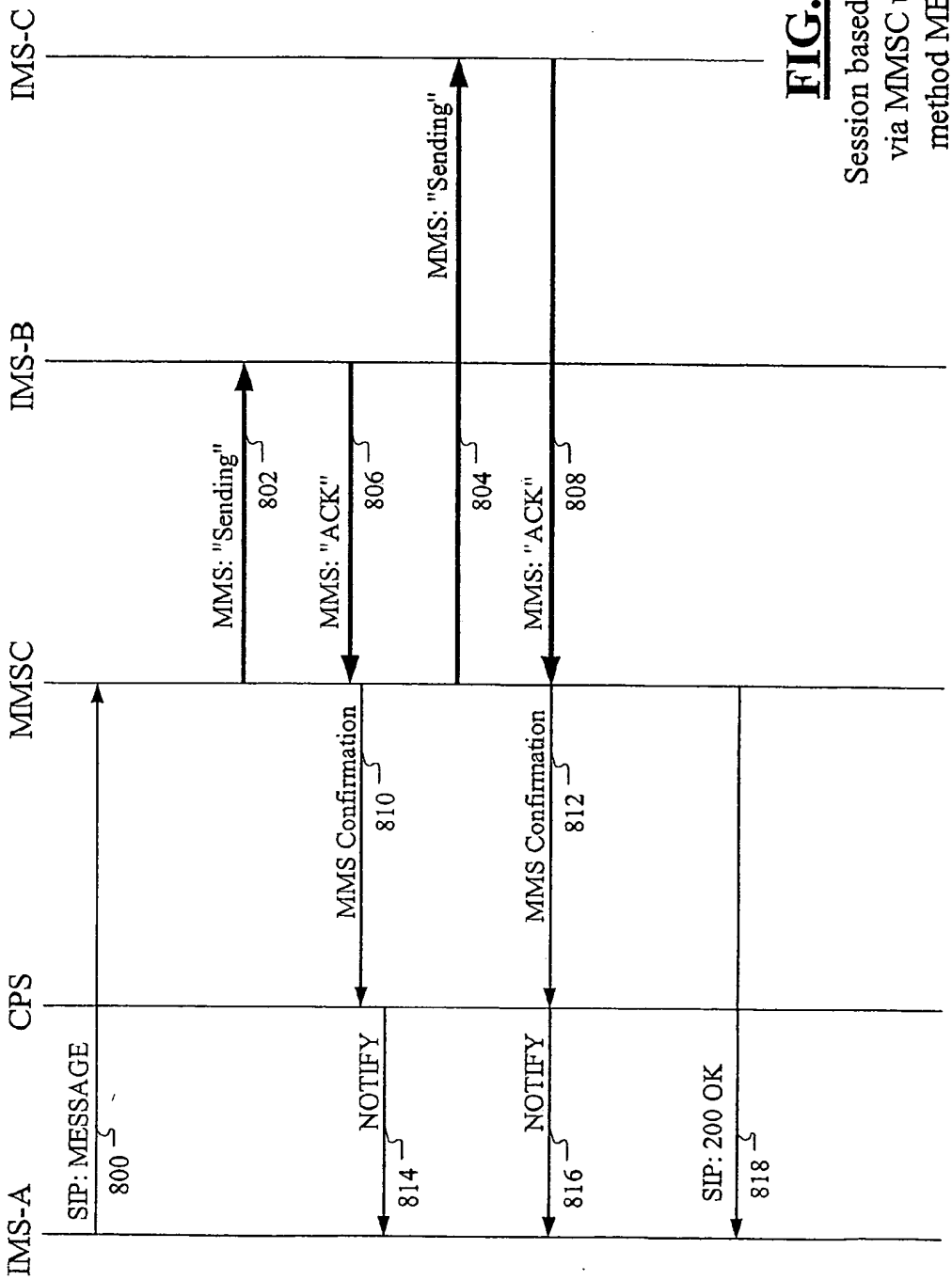

FIG. 8

Session based messaging via MMSC using SIP method MESSAGE

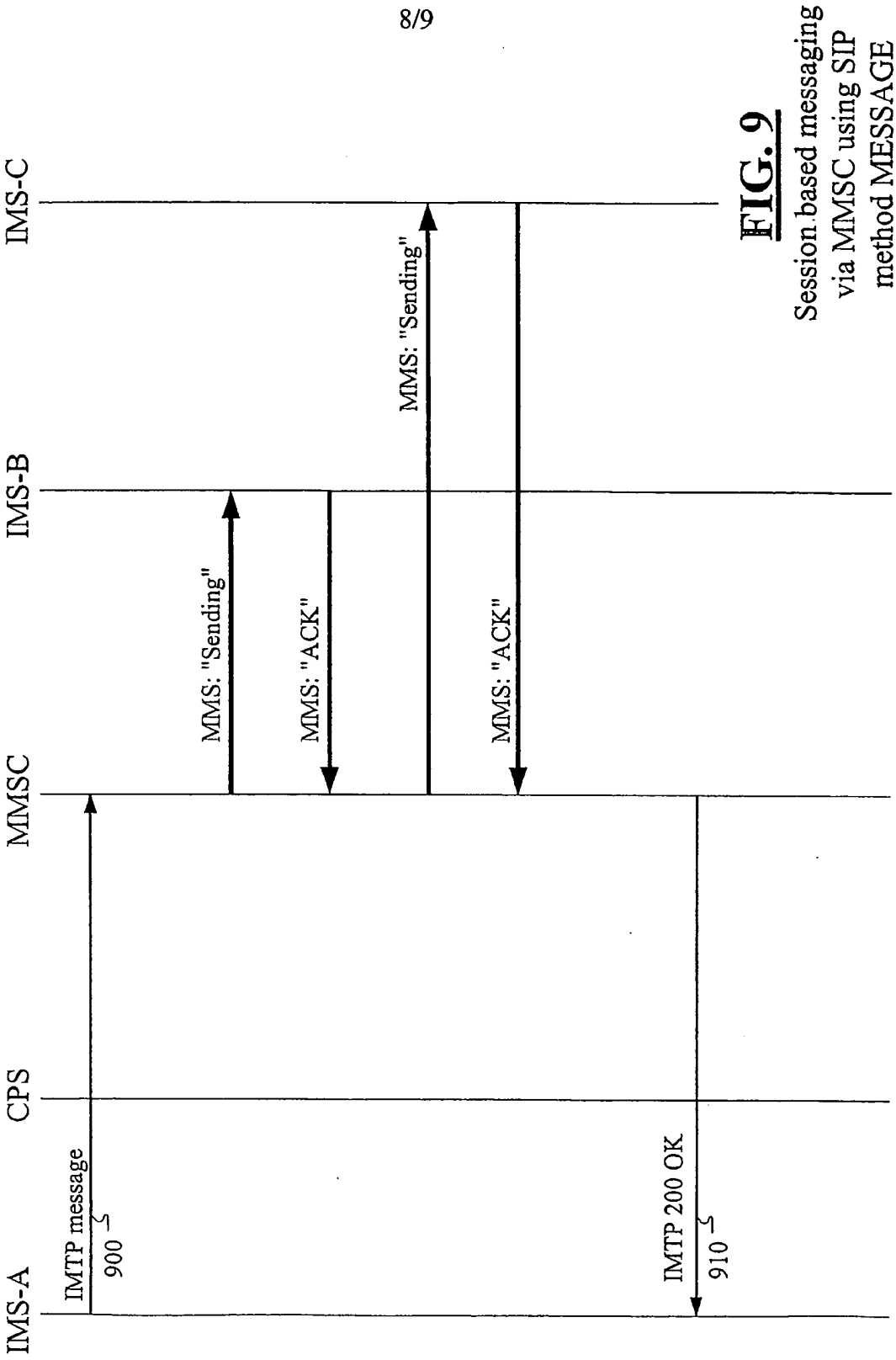

FIG. 9
Session based messaging via MMSC using SIP method MESSAGE

```
MESSAGE sip:conference.nokia.com SIP/2.0
Via: SIP/2.0/UDP IMS-A.nokia.com
To: colleagues@conference.nokia.com
From: Jose <sip:Jose@conference.nokia.com>
Call-ID: 7308601283464482@IMS-A.nokia.com
CSeq: 11 INVITE
Contact: Jose <sip:Jose@IMS-A.nokia.com>
Content-Type: text/html
Content-Disposition: instant
Content-Length: 12

What's up !!
```

FIG. 10

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:
MOSER, PATTERSON & SHERIDAN, LLP
Attn. Kim, Frederick
3040 Post Oak Blvd.
Suite 1500
Houston, TX 77056
UNITED STATES OF AMERICA

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference LIN/0002PCT	Date of mailing *(day/month/year)* 12/07/2005
International application No. PCT/US2005/009170	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
Applicant LIN, Daniel J.	International filing date *(day/month/year)* 18/03/2005

1. [X] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 740.14.35

   For more detailed instructions, see the notes on the accompanying sheet.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Stylianos Vasilakis

Form PCT/ISA/220 (January 2004)

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HOUSTON OFFICE

(See notes on accompanying sheet)

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
LIN/0002PCT		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/US2005/009170	18/03/2005	05/04/2004
Applicant		
LIN, Daniel J.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
      [ ] The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
   b. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box II).

3. [ ] **Unity of invention is lacking** (see Box III).

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant.
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant.
   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 2
      [X] as suggested by the applicant.
      [ ] as selected by this Authority, because the applicant failed to suggest a figure.
      [ ] as selected by this Authority, because this figure better characterizes the invention.
   b. [ ] none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (January 2004)

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2005/009170

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04Q7/22

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04Q H04L

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 331 786 A (AGERE SYSTEMS GUARDIAN CORPORATION) 30 July 2003 (2003-07-30)	1-3,5,6, 8,12-14, 16,17, 19,22, 23,25, 26,28
Y	paragraph '0018! - paragraph '0041! paragraph '0045! paragraph '0048! - paragraph '0055! figure 1	4,7, 9-11,15, 18,20, 21,24, 27,29,30

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

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

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

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 June 2005	12/07/2005

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Rabe, M

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Ex. 1004 - Page 137

International Application No
PCT/US2005/009170

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 03/087972 A (NOKIA CORPORATION; NOKIA INC) 23 October 2003 (2003-10-23) page 2, line 27 - page 5, line 4 page 11, line 6 - line 14 figure 2	4,7, 9-11,15, 18,20, 21,24, 27,29,30
A	US 2002/155826 A1 (ROBINSON B. ALEX ET AL) 24 October 2002 (2002-10-24) paragraph '0006! paragraph '0013! paragraph '0021! - paragraph '0023! paragraph '0027! - paragraph '0029! figure 1	1-30
A	US 2002/165000 A1 (FOK KENNY K) 7 November 2002 (2002-11-07) paragraph '0024! - paragraph '0032! paragraph '0037! figure 2	1-30

Form PCT/ISA/210 (continuation of second sheet) (January 2004)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US2005/009170

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1331786 A	30-07-2003	EP 1331786 A1	30-07-2003
		US 2003142654 A1	31-07-2003
WO 03087972 A	23-10-2003	US 2004103157 A1	27-05-2004
		AU 2003219355 A1	27-10-2003
		EP 1495387 A2	12-01-2005
		WO 03087972 A2	23-10-2003
US 2002155826 A1	24-10-2002	US 6714793 B1	30-03-2004
		AU 2003218478 A1	20-10-2003
		CA 2479937 A1	16-10-2003
		EP 1491061 A1	29-12-2004
		WO 03085996 A1	16-10-2003
		US 2004157586 A1	12-08-2004
		AU 4549701 A	17-09-2001
		CA 2400807 A1	13-09-2001
		CN 1428056 A	02-07-2003
		EP 1264413 A2	11-12-2002
		JP 2003526989 T	09-09-2003
		WO 0167622 A2	13-09-2001
		US 2004171396 A1	02-09-2004
US 2002165000 A1	07-11-2002	NONE	

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PATENT & TRADEMARK OFFICE

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PATENT
Atty. Dkt. LIN/0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2663
Serial No.: 10/817,994	§	
	§	Examiner: Chau T. Nguyen
Filed: 4/5/04	§	
	§	
For: Peer-to-Peer Mobile Instant Messaging Method and Device	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING
37 CFR 1.8

I hereby certify that this correspondence is being deposited on **August 17, 2005** with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

8/17/05 — Date
Frederick Kim

Dear Sir:

SUBMISSION OF FORMAL DRAWINGS

Attached please find two (2) substitute sheets of formal drawings, with gummed labels identifying the application for which they are submitted. The Examiner is requested to substitute these formal drawings for the formal drawings filed on March 18, 2005, which contained typographical errors that required correction.

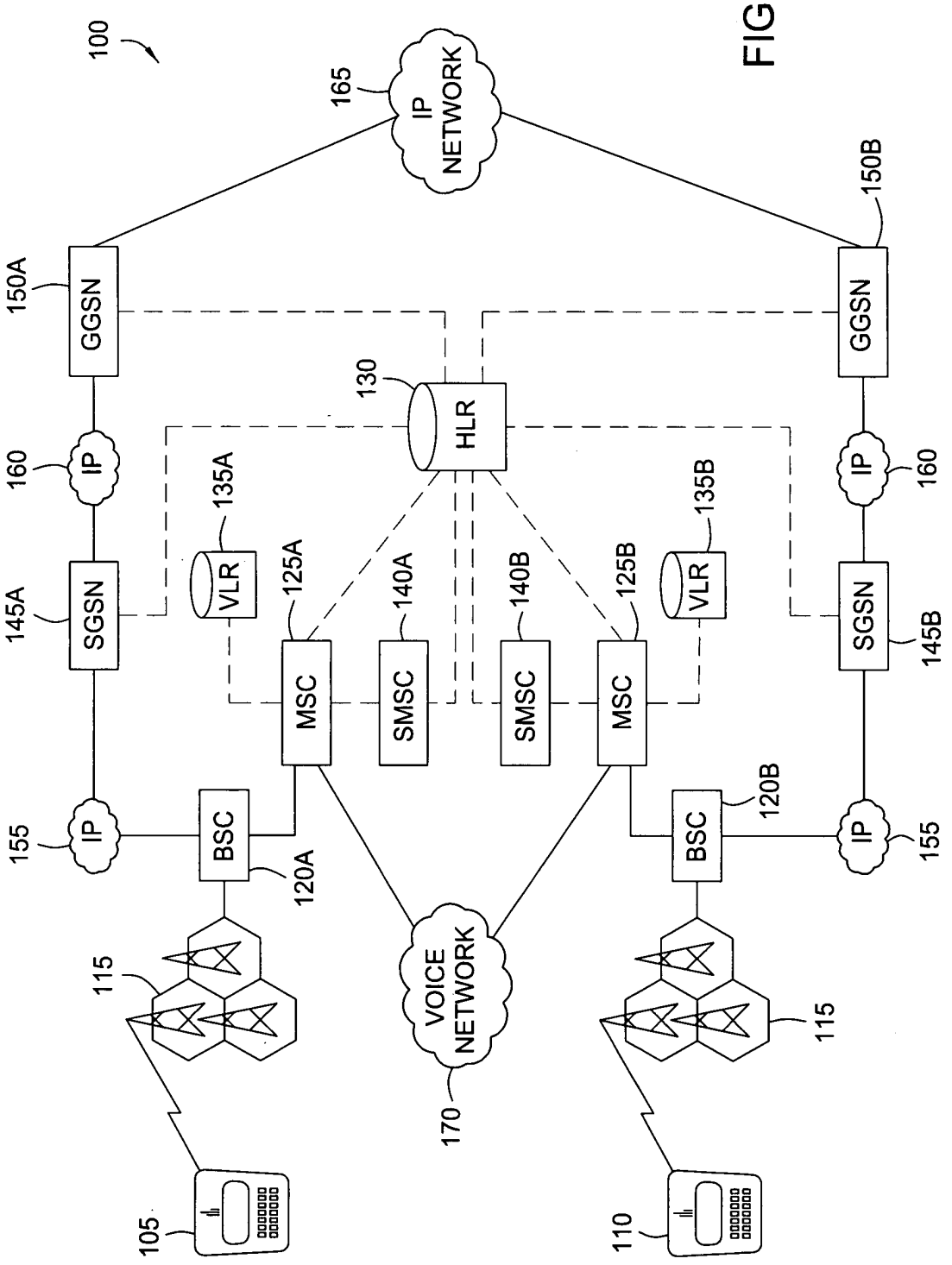
If any additional informalities are identified by the Examiner, please contact the undersigned attorney at 650.330.2310.

Respectfully submitted,

Frederick Kim
Registration No. 38,513
MOSER, PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (650) 330-2310
Facsimile: (650) 330-2314
Attorney for Applicant

OIPE JC182
AUG 19 2005
PATENT & TRADEMARK OFFICE

FIG. 1



OIPE JC182
AUG 19 2005
PATENT & TRADEMARK OFFICE

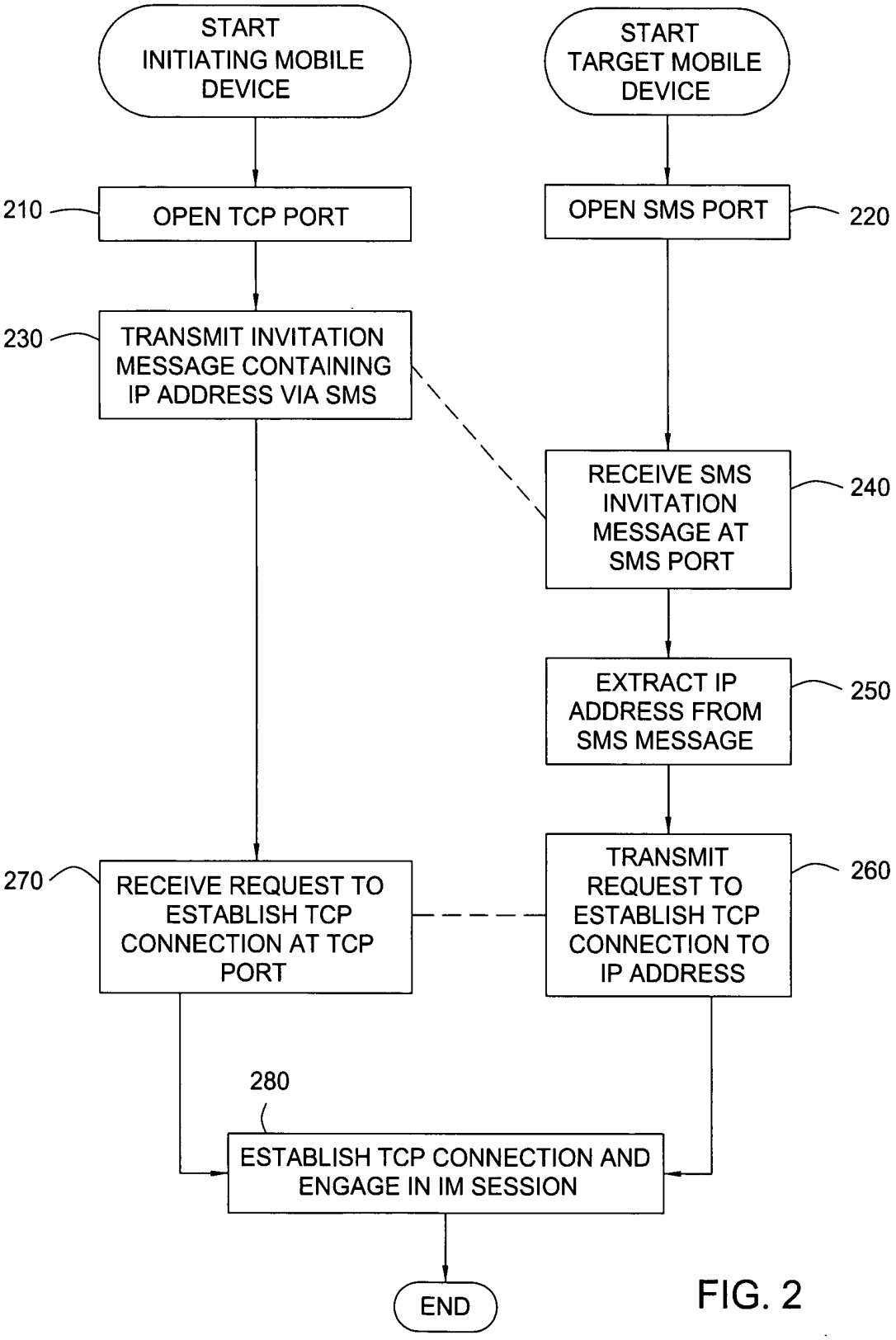


FIG. 2

OIPE
SEP 18 2006
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2663
Serial No.: 10/817,994	§	
	§	Examiner: Chau T. Nguyen
Filed: April 5, 2004	§	
	§	
For: Peer-to-Peer Mobile Instant Messaging Method and Device	§	
	§	
	§	
	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING 37 CFR 1.8

I hereby certify that this correspondence is being deposited on the date noted below with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

9/13/06
Date

Frederick Kim

Dear Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

The Applicant, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

While the information submitted in this Supplemental Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97, this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-SB08a.

In accordance with 37 C.F.R. §1.97(b)(3), this Supplemental IDS is being filed before the mailing of the first office action on the merits. Thus, a fee is not required for the Supplemental IDS.

Respectfully submitted,

Frederick D. Kim
Registration No. 38,513
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (650) 330-2310
Facsimile: (650) 330-2314
Attorney for Applicant

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PTO/SB/08a (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel J. Lin
Art Unit	2663
Examiner Name	Chau T. Nguyen
Attorney Docket Number	LIN/0002

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-			
		US-			
		US-			
		US-			
		US-			
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		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	A1	WO 2004/073288 A	08/26/2004	White		
	A2	EP 1 361 765 A	11/12/2003	Dehlin		
	A3	WO 01/69406 A	09/20/2001	Smith		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 August 2004 (26.08.2004)

PCT

(10) International Publication Number
WO 2004/073288 A3

(51) International Patent Classification[7]: H04M 3/56, H04Q 7/38

(21) International Application Number: PCT/EP2004/050115

(22) International Filing Date: 11 February 2004 (11.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0303080.6 11 February 2003 (11.02.2003) GB

(71) Applicant *(for all designated States except US)*: **MOBIX GLOBAL HOLDINGS LIMITED** [GB/GB]; 46 Clapham Common North Side, London SW4 0AA (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **WHITE, Christopher** [GB/GB]; 46 Clapham Common North Side, London SW4 0AA (GB). **COURTNEY, Peter** [GB/GB]; 46 Clapham Common North Side, London_ SW4 0AA (GB).

(74) Agents: **DERRY, Paul** et al.; Venner Shipley LLP, 20 Little Britain, London EC1A 7DH (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

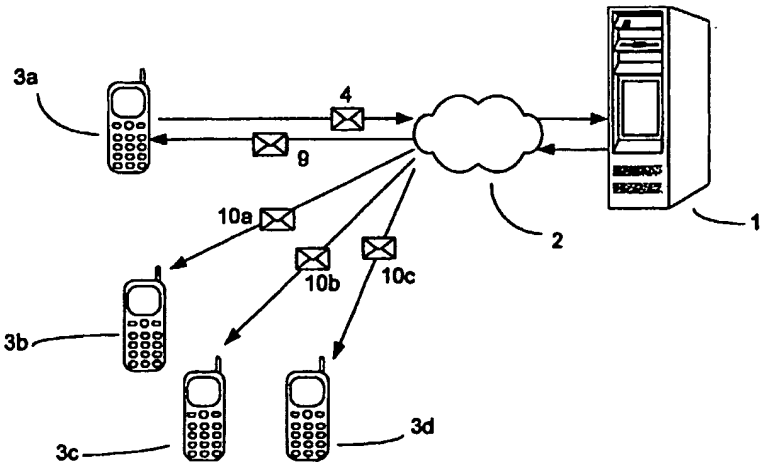
Published:
— *with international search report*
— *with amended claims*

(88) Date of publication of the international search report: 6 January 2005

Date of publication of the amended claims: 31 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONFERENCE CALL FACILITY



(57) Abstract: A conference call is established in response to receiving a request 4 from a first communication terminal 3a. The request 4 preferably is an SMS or MMS and comprises one or more identifiers 5, 6, 7, e.g. telephone numbers, relating to a plurality of other communication terminals 3b-3d. A conference call server I allocates a conference call channel and an associated identifier, such as a telephone number. Messages 10a-10c alerting the conference participants are then sent to the other communication terminals 3a-3c, each message including the identifier associated with the conference call channel. Access to the conference call may be restricted to authorised users by compating identifiers, such as CLIs, of incoming callers to the identifiers provided in the request 4 and allowing access only if there is a correspondence or match. In the event that an incoming caller has withheld their CLI, or it is otherwise nondeterminable, access is refused and a message may be sent reminding conference participants who have yet to join the conference call not to withhold this information. Alternatively, the server calls the participants at the appropriate time.

WO 2004/073288 A3

AMENDED CLAIMS

[received by the International Bureau on 16 November 2004 (16.11.04);
original claims 1-26 replaced by amended claims 1-24]

Claims

1. A method of establishing a conference call, comprising:

receiving a request at a conference call service provider from a first communication terminal; and

in response to the request, allocating a conference call channel, associating an identifier with the conference call channel and sending a message from the conference call service provider to said other communication terminals,

characterised by the request comprising plural identifiers each relating to one of a plurality of other communication terminals.

2. A method according to claim 1, comprising subsequently initiating from the conference call service provider a telephone call to each of said other communication terminals.

3. A method as claimed in claim 2, wherein the request identifies a time at which the conference call is to be started, and the initiating step occurs at substantially the conference call start time.

4. A method according to any preceding claim, wherein a message containing the identifier associated with the conference call channel is sent to the first communication terminal in response to the request.

5. A method according to any preceding claim, wherein the request is a short text message or a multimedia message.

6. A method according to any preceding claim, wherein each message sent by the conference call service provider to said other communication terminals is a short text message or a multimedia message.

7. A method according to claim 6, wherein a body of the short text or multimedia message includes the identifier associated with the conference call channel.

Apple Inc.
Ex. 1004 - Page 147

8. A method according to claim 6 or 7, wherein the short text or multimedia message further includes additional text, image and/or audio data forming part of the request.

9. A method according to any preceding claim, wherein the identifiers relating to the communication terminals are telephone numbers.

10. A method according to any preceding claim, wherein each message containing the conference call channel identifier as the message originator and preferably wherein the conference call channel identifier is a Calling Line Identification associated with the conference call channel.

11. A method according to any preceding claim, further comprising:

comparing an identifier associated with a communication terminal determined to be attempting to access the conference call channel with a list of identifiers relating to communication terminals allowed to access the conference call channel; and

allowing access to the conference call only if the identifier associated with said communication terminal corresponds to an identifier on said list.

12. A method according to claim 11, further comprising, in response to a determination that an identifier associated with a communication terminal attempting to access the conference call channel is withheld or is otherwise non-determinable, a further message is sent to all communication terminals identified in the request that are not connected to the conference call channel.

13. Apparatus for providing a conference call facility comprising:

a receiver for receiving a request from a first communication terminal,;

an allocator for allocating a conference call channel and associating an identifier with the conference call channel in response to the request; and

a message generator for preparing and sending a message to said other communication terminals,

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characterised by said request containing plural identifiers, each identifier relating to one of a plurality of other communication terminals.

14. Apparatus according to claim 13, wherein each message contains an indication that the message originates from the conference call channel, and preferably wherein the indication is a Calling Line Identification associated with the conference call channel.

15. Apparatus according to claim 13 or claim 14, further comprising an access restrictor configured to:

compare an identifier associated with a communication terminal determined to be attempting to access the conference call channel with a list of identifiers relating to communication terminals allowed to access the channel; and

allow access to the conference call only if the identifier associated with said communication terminal corresponds to an identifier on said list.

16. Apparatus according to claim 15, wherein the access restrictor is configured so that, in response to a determination that an identifier associated with a communication terminal attempting to access the conference call channel is withheld or is otherwise non-determinable, a further message is sent to all communication terminals identified in the request that are not connected to the conference call channel.

17. Apparatus according to any of claims 13 to 16, further comprising:

an initiator arranged to initiate a telephone call to each of said other communication terminals.

18. Apparatus as claimed in claim 17, wherein the request identifies a time at which the conference call is to be started, and the initiator is arranged to initiate the telephone calls at substantially the conference call start time.

19. Apparatus according to any of claims 13 to 18, wherein the message generator is configured to send a message containing the identifier associated with

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the conference call channel to the first communication terminal in response to the request.

20. Apparatus according to any of claims 13 to 19, wherein the receiver is a short text or multimedia message receiver.

21. Apparatus according to any of claims 13 to 20, wherein each message is a short text message or a multimedia message.

22. Apparatus according to claim 13 and claim 21, wherein the message generator is configured to include the conference call channel identifier in a body of each short text message or a multimedia message.

23. Apparatus according to any of claims 13 to 22 , wherein the message generator is configured to include additional text, image and/or audio data forming part of the request in a body of the short text message or a multimedia message.

24. Apparatus according to any one of claims 13 to 23, wherein the identifiers relating to the communication terminals are telephone numbers.

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(54) System and method for enabling instant messaging on a mobile device

(57) A method and system for enabling instant messaging on mobile devices is provided. A customized SMS message (400) is created (506) that awakens the mobile device so that instant messaging may be initiated. Once the mobile device is awakened by the customized SMS message (510), the mobile device responds to the customized SMS message and initiates processing (514). Based on information obtained, the mobile device creates a reply customized SMS message. The reply customized SMS message is translated into a reply instant message (614), which is transmitted over a persistent Internet connection to the sender responsible for awakening the mobile device. Alternatively, the mobile device may respond by creating an Internet connection (710) and establishing a chat session over the Internet connection (712). The chat session allows the exchange of instant messages between the mobile device and the sender responsible for awakening the mobile device (714).

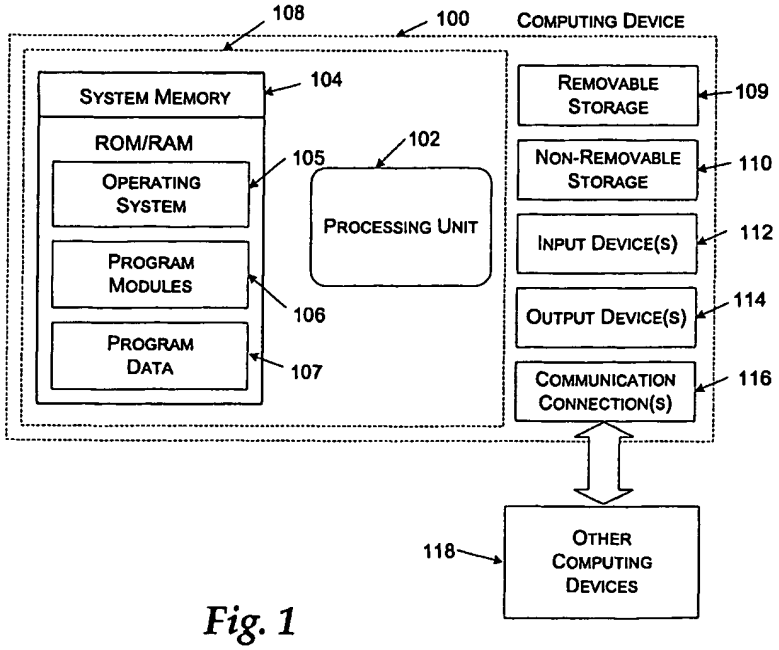

Fig. 1

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Description

Field of the Invention

[0001] The present invention relates generally to mobile computing, and more particularly to enabling instant messaging on a mobile device.

Background of the Invention

[0002] Instant messaging between individuals has become very popular. In general, instant messaging allows individuals to establish private chat sessions with each other through their respective personal computers. Typically, each individual creates a screen name and submits the screen name to an instant messaging system that stores the screen name in a database. Persons, who are interested in chatting with a particular individual, can add the screen name associated with that particular individual to their private list. Then, when any of the individuals listed on their private list are online, the instant messaging system sends an alert indicating that the individual is online and is available for chatting. A chat session may then be initiated through the Internet for chatting with the desired individual.

[0003] This instant messaging system works well for individuals using computing devices that maintain persistent connections to the Internet. These individuals may register their computing devices with the instant messaging system and inform the instant messaging system of their state (e.g., "online"). However, the instant messaging system does not work for mobile individuals using mobile devices. For one reason, mobile individuals do not typically maintain a persistent Internet connection on their mobile device for any significant duration. The reason for not maintaining a persistent Internet connection is typically driven by cost and battery-life considerations associated with their mobile device. For example, if a mobile device maintains a persistent Internet connection, its battery would most likely be expended after only a few hours. This would make the mobile device useless for other uses (e.g., phone conversations, emails, etc.).

[0004] Given the desirability of instant messaging, there is a need to extend instant messaging to mobile individuals using mobile devices.

Summary of the Invention

[0005] The present invention provides a method and system that enables mobile devices to send and receive instant messages. Because mobile devices do not typically maintain a persistent Internet connection, the mobile devices are not available to receive instant messages. In accordance with the present invention, a customized SMS message is created that awakens the mobile device so that instant messaging may be initiated. Once the mobile device is awakened by the customized SMS message, the mobile device may respond by transmitting a reply customized SMS message. The reply customized SMS message is transmitted over a cellular network. After the reply customized SMS message is translated into a reply instant message, the reply instant message is transmitted over a persistent Internet connection to the sender responsible for awakening the mobile device with the customized SMS message. Alternatively, the mobile device may respond by creating an Internet connection and establishing a chat session over the Internet connection. The chat session allows the sender responsible for awakening the mobile device and the mobile device to exchange instant messages over the Internet connection.

Brief Description of the Drawings

[0006]

FIGURE 1 illustrates an exemplary computing device that may be used in one exemplary embodiment of the present invention;

FIGURE 2 illustrates an exemplary mobile device that may be used in one exemplary embodiment of the present invention;

FIGURE 3 is a functional block diagram of one exemplary instant messaging system as implemented using the computing device shown in FIGURE 1 and the mobile device shown in FIGURE 2;

FIGURE 4 is a graphical representation of salient portions of a customized SMS message in accordance with the present invention;

FIGURE 5 is logical flow diagram generally illustrating an overview of a process for enabling instant messaging with a mobile device;

FIGURE 6 is a logical flow diagram generally illustrating a process for establishing a pseudo-chat session that is suitable for use in FIGURE 5; and

FIGURE 7 is a logical flow diagram illustrating a process for establishing a chat session that is suitable for use in FIGURE 5.

Detailed Description of the Preferred Embodiment

[0007] The present invention is directed at providing a system and method for enabling instant messaging on a mobile device. Briefly described, the present invention creates a customized Short Message Service (SMS) message that is transmitted to a mobile device. The customized SMS message is based on an instant message transmitted by a sender. Upon receipt of the customized SMS message, the mobile device determines that the customized SMS message is associated with an instant message. Based on this determination, the mobile device "wakes up" and responds to the instant message. The mobile device may respond by transmitting a reply customized SMS message that is addressed to the sender. Alternatively, the mobile device may respond by

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creating an Internet connection and establishing a chat session with the sender. These and other aspects of the invention will become apparent to those skilled in the art after reading the following detailed description.

[0008] The invention may be implemented in one or more components operating within a distributed computing network and a wireless computing network. The components may include software programs or applications operating on computing systems of various configurations. The following discussion first describes two general types of computing systems that can be used to implement the embodiments of the present invention. Those two general types of computing systems are illustrated in FIGURE 1 and FIGURE 2. Next, a detailed discussion of two illustrative implementations of the invention, illustrated in FIGURES 3-7, are described based on these two types of computing systems.

Illustrative Operating Environment

[0009] With reference to FIGURE 1, one exemplary system for implementing the invention includes a computing device, such as computing device **100**. In a very basic configuration, computing device **100** typically includes at least one processing unit **102** and system memory **104**. Depending on the exact configuration and type of computing device, system memory **104** may be volatile (such as RAM), non-volatile (such as ROM, flash memory, etc.) or some combination of the two. System memory **104** typically includes an operating system **105**, one or more program modules **106**, and may include program data **107**. This basic configuration is illustrated in FIGURE 1 by those components within dashed line **108**.

[0010] Computing device **100** may have additional features or functionality. For example, computing device **100** may also include additional data storage devices (removable and/or non-removable) such as, for example, magnetic disks, optical disks, or tape. Such additional storage is illustrated in FIGURE 1 by removable storage **109** and non-removable storage **110**. Computer storage media may include volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information, such as computer readable instructions, data structures, program modules, or other data. System memory **104**, removable storage **109** and non-removable storage **110** are all examples of computer storage media. Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information and which can be accessed by computing device **100**. Any such computer storage media may be part of device **100**. Computing device **100** may also have input device(s) **112** such as keyboard, mouse, pen, voice input device, touch input device, etc. Output device(s) **114** such as a display, speakers, printer, etc. may also be included. These devices are well know in the art and need not be discussed at length here.

[0011] Computing device **100** may also contain communication connections 116 that allow the device to communicate with other computing devices **118**, such as over a network. Communication connections **116** is one example of communication media. Communication media may typically be embodied by computer readable instructions, data structures, program modules, or other data in a modulated data signal, such as a carrier wave or other transport mechanism, and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media. The term computer readable media as used herein includes both storage media and communication media.

[0012] With reference to FIGURE 2, one exemplary system for implementing the invention includes a mobile device, such as mobile device **200**. The mobile device **200** has a processor **260**, a memory **262**, a display **228**, and a keypad **232**. The memory **262** generally includes both volatile memory (e.g., RAM) and non-volatile memory (e.g., ROM, Flash Memory, or the like). The mobile device **200** includes an operating system **264**, such as the Windows CE operating system from Microsoft Corporation or other operating system, which is resident in the memory **262** and executes on the processor **260**. The keypad **232** may be a push button numeric dialing pad (such as on a typical telephone), a multi-key keyboard (such as a conventional keyboard). The display **228** may be a liquid crystal display, or any other type of display commonly used in mobile devices. The display **228** may be touch-sensitive, and would then also act as an input device.

[0013] One or more application programs 266 are loaded into memory **262** and run on the operating system **264**. Examples of application programs include phone dialer programs, email programs, scheduling programs, PIM (personal information management) programs, word processing programs, spreadsheet programs, Internet browser programs, instant messaging programs, and so forth. The mobile computing device **200** also includes non-volatile storage **268** within the memory **262**. The non-volatile storage 268 may be used to store persistent information which should not be lost if the mobile computing device **200** is powered down. The applications **266** may use and store information in the storage 268, such as e-mail or other messages used by an e-mail application, contact information used by a PIM, appointment information used by a scheduling program, documents used by a word processing program,

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instant messaging information used by an instant messaging program, and the like.

[0014] The mobile computing device **200** has a power supply **270**, which may be implemented as one or more batteries. The power supply **270** might further include an external power source, such as an AC adapter or a powered docking cradle, that supplements or recharges the batteries.

[0015] The mobile computing device **200** is also shown with two types of external notification mechanisms: an LED **240** and an audio interface **274**. These devices may be directly coupled to the power supply **270** so that when activated, they remain on for a duration dictated by the notification mechanism even though the processor **260** and other components might shut down to conserve battery power. The LED **240** may be programmed to remain on indefinitely until the user takes action to indicate the powered-on status of the device. The audio interface **274** is used to provide audible signals to and receive audible signals from the user. For example, the audio interface **274** may be coupled to a speaker for providing audible output and to a microphone for receiving audible input, such as to facilitate a telephone conversation.

[0016] The mobile computing device **200** also includes a radio interface layer **272** that performs the function of transmitting and receiving radio frequency communications. The radio interface layer **272** facilitates wireless connectivity between the mobile computing device **200** and the outside world, via a communications carrier or service provider. Transmissions to and from the radio interface layer **272** are conducted under control of the operating system **264**. In other words, communications received by the radio interface layer **272** may be disseminated to application programs **266** via the operating system **264**, and vice versa.

Illustrative Instant Messaging System

[0017] FIGURE 3 is a functional block diagram generally illustrating an instant messaging system **300** for enabling instant messaging between two computing systems, one of which is a mobile device **320-322**. In one embodiment of the present invention, the two computing systems are a personal computer **310-312** and a mobile device **320-322**. The personal computer **310-312** is a computing device such as the one described above in conjunction with FIGURE 1, and the mobile device **320-322** is a mobile computing device such as the one described above in conjunction with FIGURE 2. Each personal computer **310-312** includes an instant message application **330**. In another embodiment of the present invention, the two computing systems may both be mobile devices **320-322**, such as the one described above in conjunction with FIGURE 2. In a further refinement of the invention, an instant message client application **340** resides on the mobile device **320-322**.

[0018] In addition, the instant messaging system 300 includes an instant message (IM) server **350** and an IM/SMS server **360**. The IM server **350** and the IM/SMS server **360** are both computing devices such as the one described above in conjunction with FIGURE 1. IM server **350** is configured to perform instant messaging services between two or more personal computers **310-312**. In one embodiment, IM server **350** is configured as a server, running Microsoft WINDOWS 2000 operating system, and running an IM server application **352**. The IM server application **352** is configured to maintain a database of user aliases and a state for each of the user aliases. Briefly, the instant messaging service enables two or more personal computers **310-312** to create a private chat room and exchange private messages in real-time. There are several instant messaging services currently available, such as the MSN MESSENGER instant messaging service from Microsoft Corporation. These messaging services are known to those skilled in the art and will be described only to the extent necessary for understanding of the present invention.

[0019] In one embodiment, the IM/SMS server **360** is configured as a server, running Microsoft WINDOWS 2000 operating system, and running an IM/SMS translation application **362**. In another embodiment, the IM/SMS translation application **362'** (shown in phantom) is a software component that resides on the IM server **350**. In addition, one skilled in the art will appreciate that the functionality provided by the IM/SMS translator application **362** may also be incorporated into the IM server application **352** without departing from the scope of the present invention. Briefly described, the IM/SMS translator application **362** is configured to alert the mobile device of an instant message and to support the exchange of instant messages with the mobile device.

[0020] The instant messaging system **300** includes a wide area network (WAN)/local area network (LAN) **370**, a cellular/pager network **380**, and a gateway **390**. Typically, WAN/LAN **370** transmits information between computing devices. One example of a WAN is the Internet which connects millions of computers over a host of gateways, routers, switches, hubs, and the like. An example of a LAN is a network used to connect computers in a single office. A WAN may connect multiple LANs. Cellular/pager network **380** is a network responsible for delivering messages to and receiving messages from wireless devices. The cellular/pager network **380** may include both wireless and wired components. For example, cellular/pager network may include a cellular tower that is linked to a wired telephone network. Typically, the cellular tower carries communication to and from cell phones, long-distance communication links, and the like. One example of a messaging service that would use cellular/pager network **380** is the Short Messaging Service (SMS) system that delivers short text messages to and from mobile devices, such as mobile phones and pagers. In accordance with the present invention, cellular/pager network **380** delivers customized SMS mes-

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sages **364** to and from mobile devices **320-322**. The customized SMS messages **364** are created and processed by the IM/SMS translation application **362**.

[0021] Gateway **390** routes messages between cellular/pager network **380** and WAN/LAN **370**. For example, a computer user may send an email that is addressed to a pager. Gateway **390** provides a means for transporting the email from the WAN/LAN **370** to cellular/pager network **380**. Conversely, a user with a device connected to a cellular network may be browsing the Web. Gateway **390** allows hyperlink text protocol (HTTP) messages to be transferred between WAN/LAN **370** and cellular/pager network **380**.

[0022] In one exemplary embodiment of the present invention, IM server **350**, IM/SMS server **360**, and personal computers **310-312** are connected to WAN/LAN **370**. Mobile devices **320-322** and IM/SMS server **360** are connected to cellular/pager network **380**. In addition, mobile devices may be connected directly to WAN/LAN **370**, as shown with mobile device **322**. For example, mobile device **322** may have a network interface that allows it to plug directly into WAN/LAN **370**. In other embodiments (not shown), IM server **350** and personal computers **310-312** may be connected to cellular/pager network **380**.

[0023] FIGURE 4 is a graphical representation generally illustrating the salient portions of a sample customized SMS message **400** suitable for use in the present invention. As an overview, Short Messaging Service (SMS) is a service that allows short text/data messages to be sent and received on Global System for Mobile Communications (GSM) cellular networks. Generally, there are three types of SMS messages: GSM character set-encoded messages (effectively 7-bit encoded text), UCS2-encoded messages (Unicode encoded 16-bit text), and 8-bit binary-encoded messages. Typically, GSM-encoded messages and UCS2-encoded messages are textual and are displayed to the user by a messaging application as soon as they are received, whereas 8-bit binary-encoded messages are generally directed at providing device-specific information, such as device configuration messages.

[0024] As shown, the sample customized SMS message **400** includes a User Data Header field **402**, a source field **404**, a destination field **406**, a concatenation field **408** and a message field 410. The User Data Header field **402** includes a message type field **412**. In accordance with the present invention, the message type field **412** stores an identifier identifying the SMS message **400** as an IM SMS message.

[0025] FIGURE 5 is logical flow diagram generally illustrating an overview of a mobile instant messaging process **500** for enabling instant messaging on a mobile device. The process **500** begins at block **502**, where a mobile user registers an alias with the instant messaging service. Registering an alias associates the alias with a mobile device. Typically, registering the alias is performed one time. As mentioned above, the instant messaging service maintains a list of aliases and their corresponding state in a database. The state corresponding to the alias for a mobile device will typically indicate offline. This offline state indicates to other IM aliases that the alias is not available for chatting. However, the instant messaging service allows an IM alias to send an IM message to an alias that appears offline.

[0026] At block **504**, an incoming IM message addressed to the alias (i.e., recipient alias) associated with the mobile device is received. The incoming IM message is generated from another individual on a first computing device. The other individual also has an alias stored with the instant messaging service. Typically, IM messages are exchanged through persistent Internet connections between two individuals on their personal computers. However, with a mobile device, a persistent Internet connection is not typically connected. Upon recognizing that the recipient alias corresponds to the mobile device, processing proceeds to block **506**.

[0027] At block **506**, the incoming IM message is translated into a customized SMS message. As mentioned above, SMS messages are sent over the cellular network to mobile devices. Typically, the SMS messages are short text messages. The customized SMS message in accordance with the present invention leverages existing SMS technology by including a message type field. For this embodiment of the invention, the message type field identifies the SMS message as an IM message type, which indicates that the SMS message originated from an IM message. Processing continues at block **508**.

[0028] At block 508, the customized SMS message is sent to the mobile device. In overview, the mobile device is typically in a "sleep" state unless actively engaged in some activity, such as a telephone call or using a Web browser. Even though the mobile device is in a "sleep" state, the mobile device may accept and receive SMS messages. Thus, at block **510**, the mobile device receives the customized SMS message.

[0029] At block **512**, the mobile device determines that the customized SMS message is not a standard SMS message, but is rather associated with an instant message. Processing continues at block **514**.

[0030] At block **514**, additional processing is performed based on the type of customized SMS message. Two embodiments for enabling instant messaging on the mobile device are illustrated in FIGURES 6 and 7 and described below. Processing is then complete.

[0031] FIGURE 6 is a logical flow diagram generally illustrating an IM/SMS process for establishing a pseudo-chat session between the mobile device and the first computing device over the cellular network using SMS. The IM/SMS process **600** is one embodiment of additional processing suitable for use in block **514** of FIGURE 5. The IM/SMS process **600** begins at block **602**, where the mobile device has already identified the type of customized SMS message. For the embodiment described below, the customized SMS message has been

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identified as an instant message type. Therefore, an IM client application is initiated on the mobile device. The IM client is initiated after determining the SMS message type so that battery power can be utilized more effectively.

[0032] At block **604**, the IM client parses the customized SMS message and retrieves sender information. As will become apparent after reading the complete description of the invention, the first computing device (i. e., the sender) is unaware that instant messaging is being performed with a mobile user. To the sender's perspective, instant messaging is being performed between two personal computers using a persistent Internet connection.

[0033] At block **606**, content of the customized SMS message is read and displayed on the mobile device for the mobile user. After reviewing the content, the mobile user may input information in response to the IM message. For example, the mobile user may select "reply" and type in a reply message using the input device associated with the mobile device. The mobile device accepts this input at block **608**.

[0034] At block **610**, the IM client creates a reply customized SMS message based on the sender information and input obtained above. The reply customized SMS message has a similar format as the customized SMS message that was received by the mobile device.

[0035] At block **612**, the IM client sends the reply customized SMS message to the sender over the cellular network. The reply customized SMS message identifies the sender and includes an IM message indicator in the message type field. An IM/SMS application receives the reply customized SMS message and translates the reply customized SMS message into a reply IM message at block **614**. At block **616**, the reply IM message is sent to the sender through the Internet connection established with the instant messaging service for instant messaging. Processing is then complete. The first computing device and the mobile device may exchange additional instant messages using the process described above in FIGURES 5 and 6.

[0036] FIGURE 7 is a logical flow diagram generally illustrating an IM process for establishing a chat session between the mobile device and the first computing device over an Internet connection. The IM process **700** is another embodiment of additional processing suitable for use in block **514** of FIGURE 5. The IM process **700** begins at block **702**, where the mobile device has already identified the type of customized SMS message. For the embodiment described below, the customized SMS message has been identified as an instant message type. Therefore, an IM client application is initiated on the mobile device. The IM client is initiated after determining the SMS message type so that battery power can be utilized more effectively.

[0037] At block **704**, the IM client parses the customized SMS message and retrieves sender information. At block **706**, content of the customized SMS message is read and displayed on the mobile device for the mobile user. After reviewing the content, the mobile user may input information in response to the IM message. For example, the mobile user may select "reply" and type in a reply message using the input device associated with the mobile device. The mobile device accepts this input at block **708**.

[0038] The above processing is similar to the processing described above in FIGURE 6. However, at block **710**, instead of creating a reply customized SMS message based on the sender information and input, the IM client establishes an Internet connection with the sender. The Internet connection may be established through a wireless LAN, Global System for Mobiles (GSM), and the like. The Internet connection allows a seamless connection to the sender.

[0039] At block **712**, the IM client establishes a chat session with the sender over the Internet connection. The sender and the mobile device may then exchange IM messages through the chat session until one or the other ends the chat session. Once the chat session is terminated, the processing described above in conjunction with FIGURES 5 and 7 needs to be performed again before another exchange of instant messages can occur. Processing is then complete.

[0040] Even though the above discussion describes the IM process for establishing a chat session between the mobile device and the first computing device over an Internet connection, the chat session may occur between two mobile devices without departing from the scope of the present invention. In this embodiment, the sending mobile device is connected via the Internet and acting in a similar fashion as a computing device.

[0041] The above specification, examples and data provide a complete description of the manufacture and use of the composition of the invention. Since many embodiments of the invention can be made without departing from the spirit and scope of the invention, the invention resides in the claims hereinafter appended.

Claims

1. A computer-implemented method for enabling instant messaging on a mobile device, comprising:

   receiving an incoming instant message from a first computing device that is destined for a mobile device;
   translating the incoming instant message into a customized message;
   sending the customized message to the mobile device;
   upon receiving the customized message on the mobile device, determining that the customized message originated from the incoming instant message and initiating processing with the first computing device based on the customized

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message.

2. The computer-implemented method of Claim 1, wherein the customized message includes a Short Message Service message.

3. The computer-implemented method of Claim 2, wherein the customized message is sent over a cellular network.

4. The computer-implemented method of Claim 1, wherein initiating processing includes creating a reply-customized message and sending the reply customized message to an IM server computer.

5. The computer-implemented method of Claim 4, wherein the IM server computer translates the reply customized message into a reply instant message that is sent to the first computing device.

6. The computer-implemented method of Claim 5, wherein the reply instant message is sent over an Internet connection to the first computing device.

7. The computer-implemented method of Claim 1, further comprising establishing an Internet connection in response to receiving the customized message.

8. The computer-implemented method of Claim 7, further comprising establishing a chat session for sending instant messages between the mobile device and the first computing device over the Internet connection.

9. The computer-implemented method of Claim 8, wherein the Internet connection is via a wireless LAN.

10. An instant messaging system that enables instant messaging on a mobile device, the system comprising:

a mobile device;
a first computing device for sending an instant message to an alias associated with the mobile device; and
an instant message server for receiving the instant message and translating the instant message into a customized SMS message for delivery over a cellular network to the mobile device;

wherein the mobile device receives the customized SMS message and recognizes that the customized SMS message originated from the instant message sent from the first computing device.

11. The instant messaging system of Claim 10, further comprising a client application residing on the mobile device that is configured to create a reply customized SMS message in response to user input on the mobile device and to send the reply customized SMS message through the cellular network to the instant message server.

12. The instant messaging system of Claim 10, wherein the instant message server translates a reply customized SMS message from the mobile device into a reply instant message and sends the reply instant message to the first computing device through an Internet connection.

13. The instant messaging system of Claim 10, further comprising a client application residing on the mobile device that is configured to create an Internet connection and to establish a chat session with the first computing device over the Internet connection.

14. A mobile device, comprising:

a processor;
a display;
a memory into which a plurality of computer-executable instructions are loaded, the computer-executable instructions performing a method comprising:

receiving a customized SMS message;
determining that the customized SMS message originated from an instant message sent from a first computing device; and
initiating processing with the first computing device based on the customized SMS message.

15. The mobile device of Claim 14, wherein initiating processing includes creating a reply-customized message and sending the reply customized message to an IM server computer.

16. The mobile device of Claim 14, wherein initiating processing includes establishing an internet connection and establishing a chat session for sending instant messages between the mobile device and the first computing device over the internet connection.

17. An instant messaging server, comprising:

a processor;
a memory into which a plurality of computer-executable instructions are loaded, the computer-executable instructions performing a method comprising:

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receiving an incoming instant message from a first device;
detecting that the incoming instant message is destined for a mobile device;
translating the incoming instant message into a customized SMS message; and
sending the customized SMS message to the mobile device over a cellular network.

18. The instant messaging server of Claim 17, further comprising receiving a reply customized SMS message from the mobile device in response to the customized SMS message and translating the reply customized SMS message into a reply instant message that is sent to the first computing device over an internet connection.

19. A computer-readable medium encoded with computer-executable instructions for performing a method comprising:

receiving an incoming instant message from a first device;
detecting that the incoming instant message is destined for a mobile device;
translating the incoming instant message into a customized SMS message; and
sending the customized SMS message to the mobile device over a cellular network.

20. A computer-readable medium encoded with computer-executable instructions for performing a method comprising:

receiving a customized SMS message;
determining that the customized SMS message originated from an instant message sent from a first computing device; and
initiating processing with the first computing device based on the customized SMS message.

21. The computer-readable medium of Claim 20, wherein initiating processing includes creating a reply-customized message and sending the reply customized message to an IM server computer.

22. The computer-readable medium of Claim 20, wherein initiating processing includes establishing an internet connection and establishing a chat session for sending instant messages between the mobile device and the first computing device over the internet connection.

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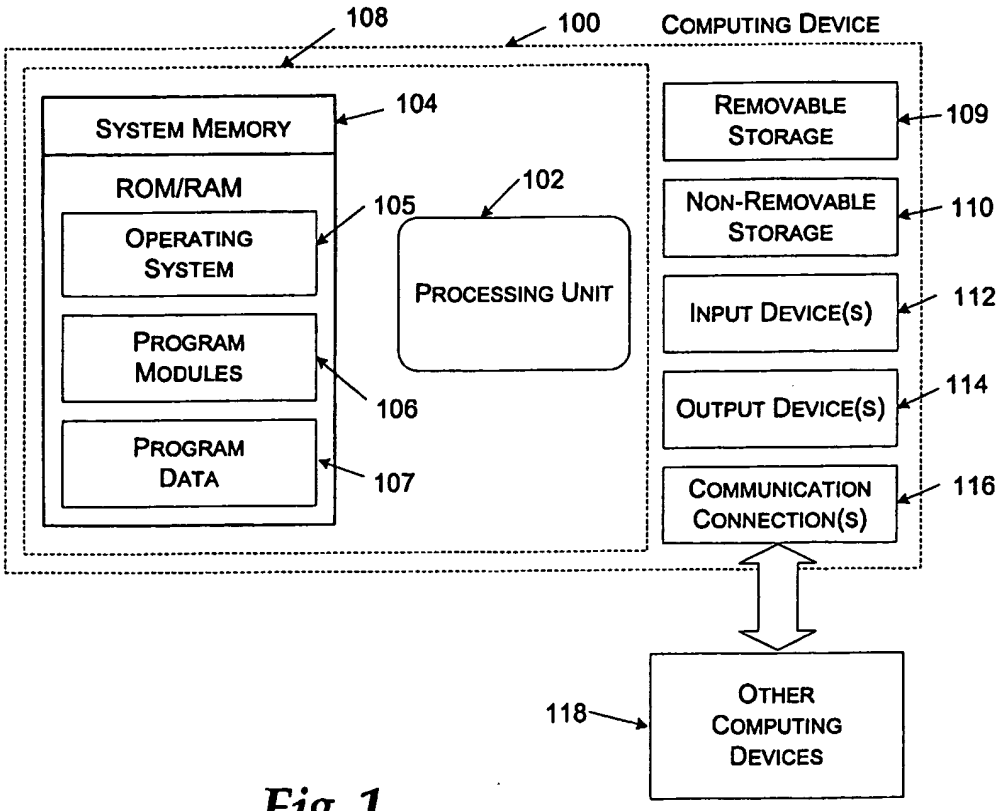

Fig. 1

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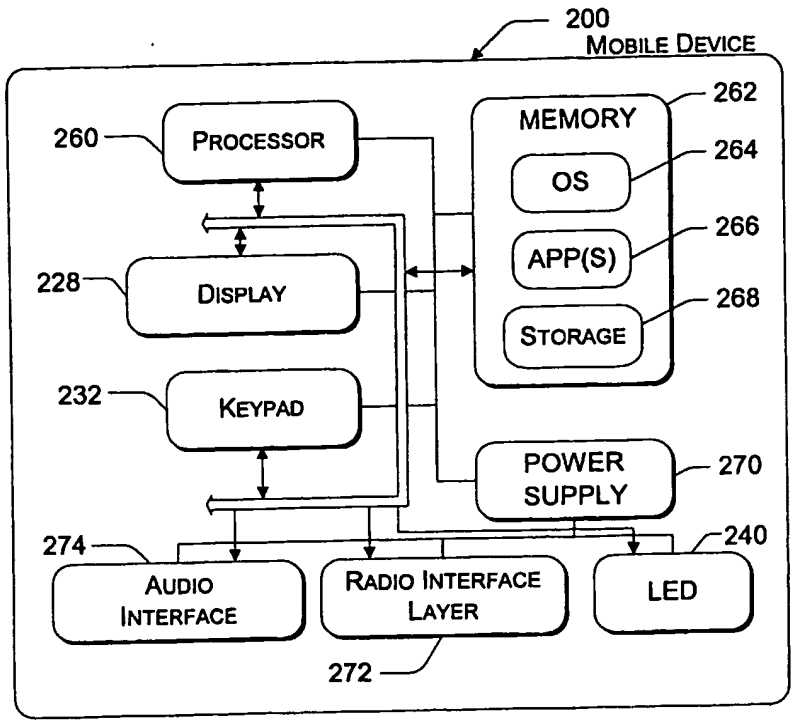

Fig. 2

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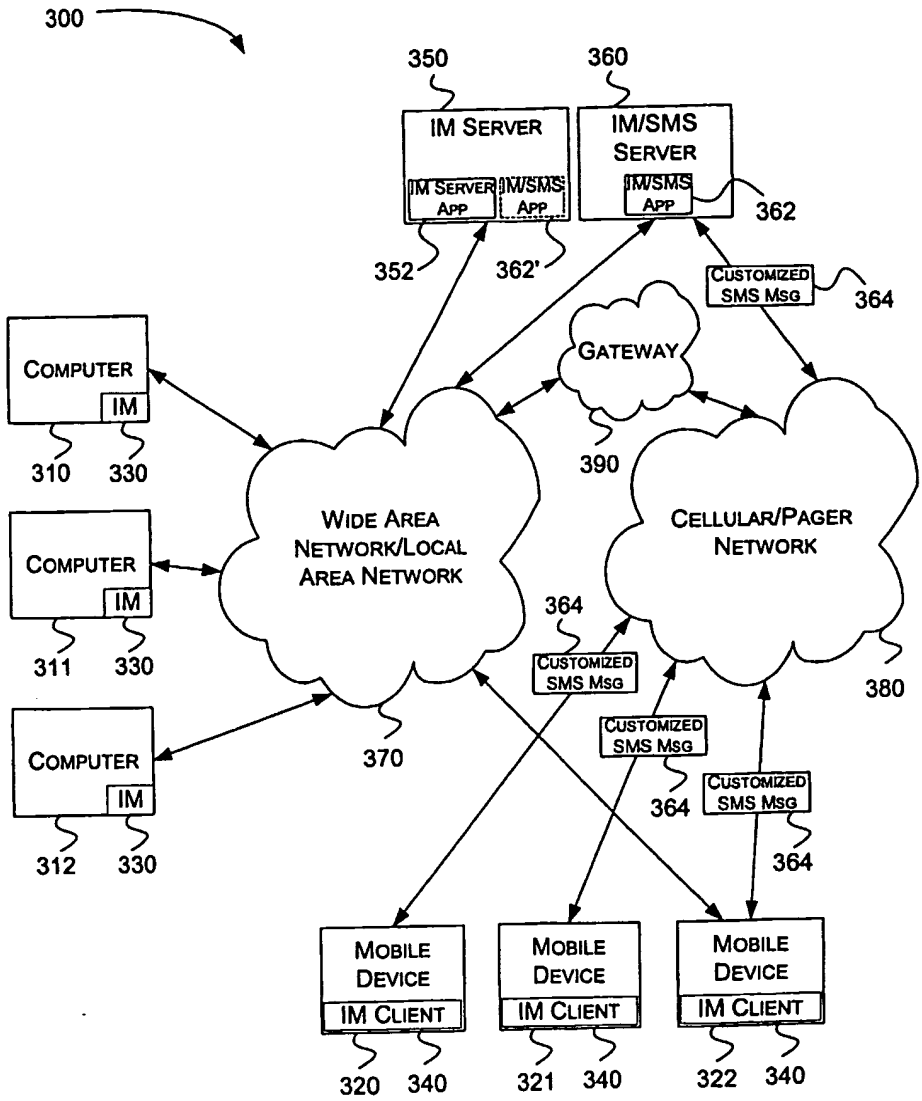

Fig. 3

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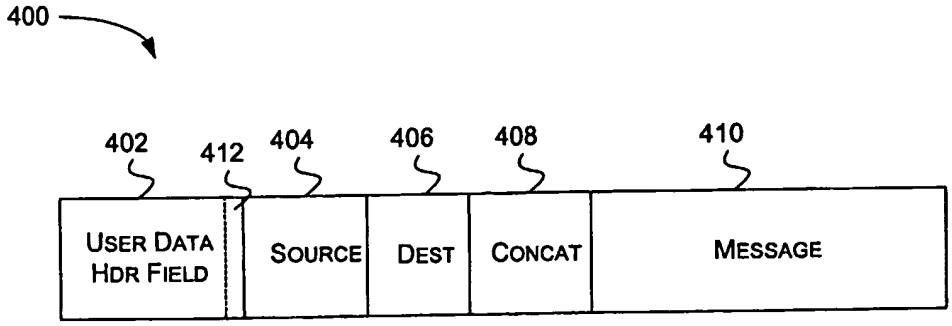

Fig. 4

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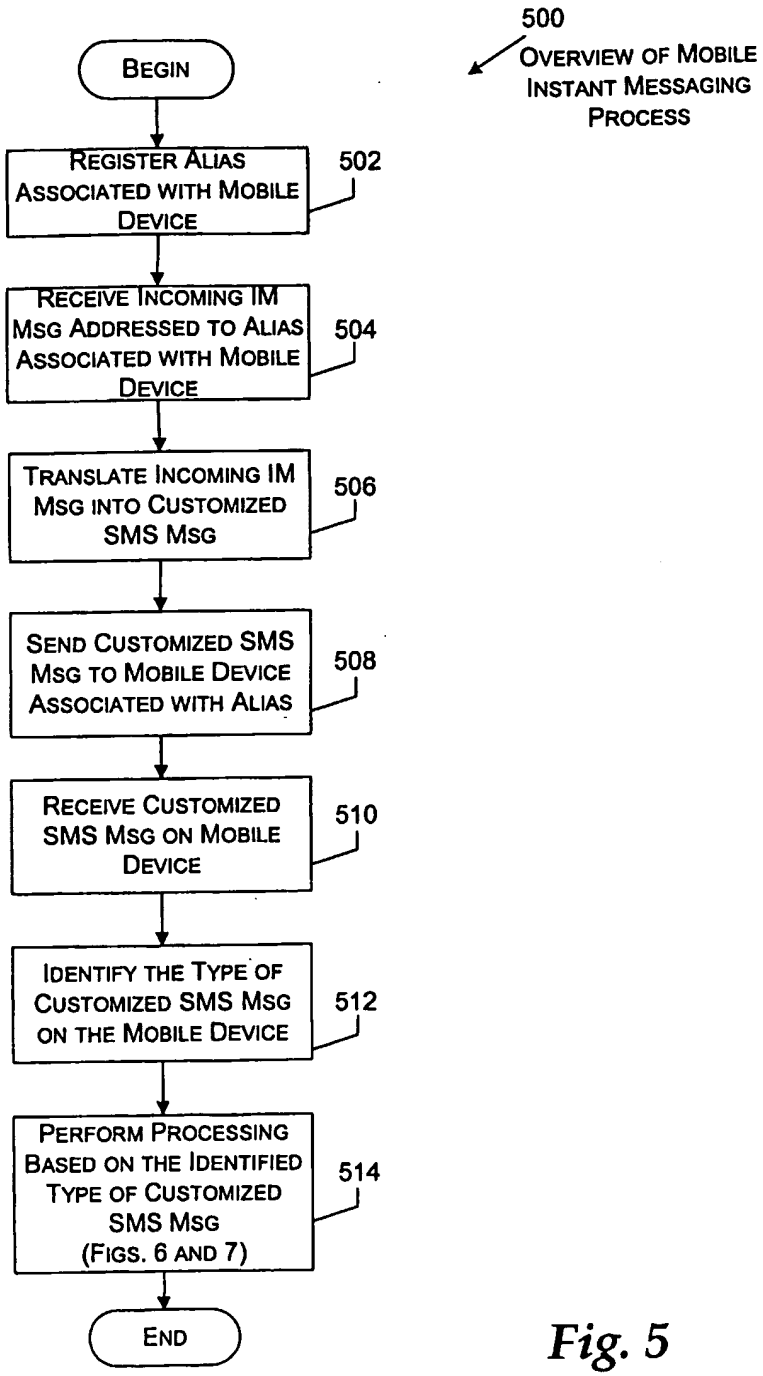

Fig. 5

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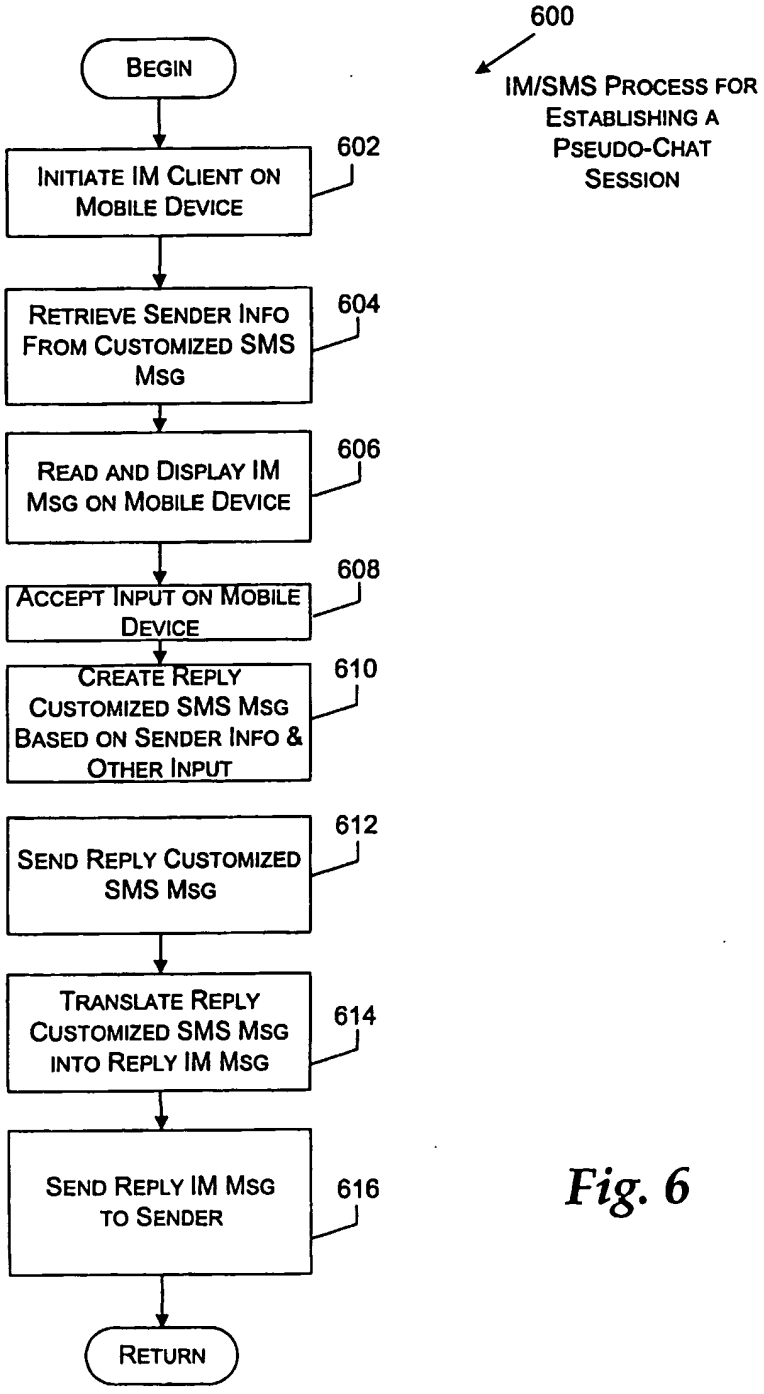

Fig. 6

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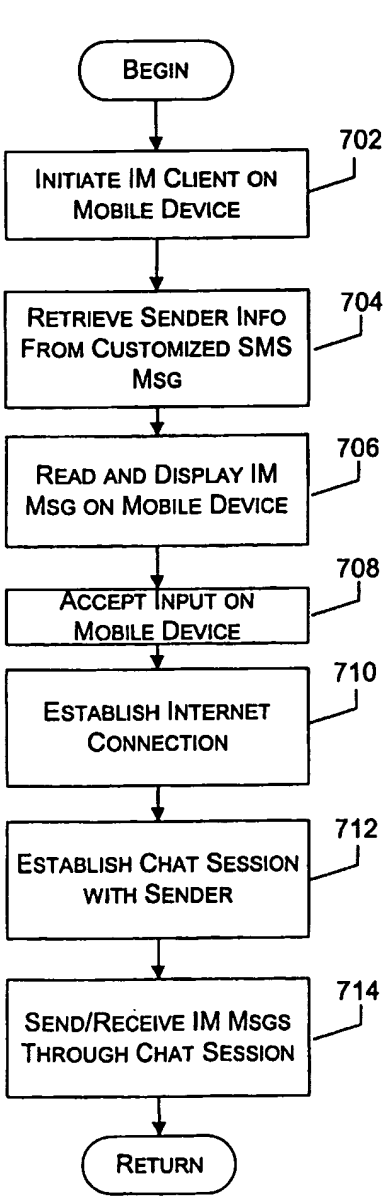

Fig. 7

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European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 01 0198

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Y	US 6 377 798 B1 (SHAFFER SHMUEL ET AL) 23 April 2002 (2002-04-23) * abstract * * column 1, line 56 - line 63 *	7-9,13, 16,22	
P,X	US 2002/165000 A1 (FOK KENNY K) 7 November 2002 (2002-11-07) * abstract * * paragraphs [0007]-[0012] *	1-22	
A	US 2002/035605 A1 (KHALIL JOSEPH ET AL) 21 March 2002 (2002-03-21) * paragraphs [0004],[0048],[0052],[0053],[0092] *	1-22	
A	WO 01 67622 A (TEGIC INC) 13 September 2001 (2001-09-13) * the whole document *	1-22	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)
H04Q
H04L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	29 August 2003	Chêne, X

CATEGORY OF CITED DOCUMENTS
X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 01 0198

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29-08-2003

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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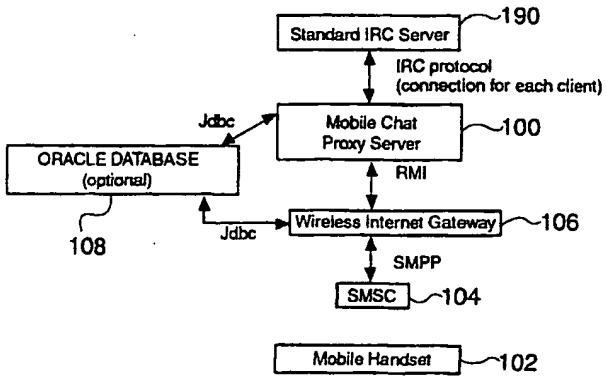
Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MOBILE ORIGINATED INTERNET RELAY CHAT



(57) Abstract: Internet Relay Chat is provided for mobile devices (e.g., mobile telephones) using an IRC proxy approach. The mobile chat proxy server (100) facilitates 2-way text conversations between users of cell phones, web browser users, and/or other chat group users, e.g., Instant Messaging service users. In the IRC proxy approach, SMPP and/or Interworking Function (IWF) interfaces are used to provide Internet Relay Chat functionality to mobile handsets (102).IRC proxy is provided by a mobile chat proxy server (100), also referred to as a "mobile originated chat server" or "chat server", and/or under its trademark name of a "MOChat proxy server". The mobile chat proxy server (100) exchanges message objects with a wireless Internet gateway. The mobile chat proxy server (100) uses standard IRC protocol in communications with the standard or conventional IRC server (190) supporting the relevant chat group. The mobile chat proxy server (100) maintains a real-time proxy connection to the conventional IRC server for each mobile device. In operation, the mobile chat proxy server (100) interprets chat messages from mobile devices, and determines if and how they should be forwarded to the conventional IRC server (190). The mobile chat proxy server (100) utilizes an RMI interface between the mobile chat proxy server (100) and the wireless Internet gateway for sending messages to chat group participants using mobile handsets (102).

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MOBILE ORIGINATED INTERNET RELAY CHAT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to wireless telecommunication, Instant Messaging, and Internet chat applications and systems.

2. Background of Related Art

Internet Relay Chat (IRC), ICQ, and Instant Messaging are digital techniques allowing users of computers to communicate textual messages to one another in a real-time environment.

IRC ("Internet Relay Chat") is a system for chatting that involves a set of rules and conventions and client/server software. Unlike older chat systems, IRC is not limited to just two participants. Conventionally, an IRC client can be downloaded to a user's computer (e.g., PC or Palm Pilot™).

IRC is based on a client-server model, or network, as shown in Fig. 18. A user must connect to an IRC server in an IRC network to start or join an IRC chat group. As shown in Fig. 18, an IRC network is a collection of servers linked together. When you log onto an IRC network, you are connecting to one of the servers on that network. All servers on the IRC network share and have access to the same information. Thus, each server knows who is on the network, which chat rooms the users are currently in, and which servers the users are using as well.

Using IRC, a new chat group can be started, or an existing chat group can be joined. There is a protocol for discovering existing chat groups and their members. Perhaps the most common IRC networks are IRCnet (mostly European), Efnet (mostly North American), Undernet, and Dalnet. Popular IRC clients include mIRC for Windows, IRCle for MacOS, and irc2 (the original client) for UNIX-based operating systems.

The IRC protocol uses Transmission Control Protocol (TCP). TCP is a connection-oriented protocol used along with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping

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track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

ICQ ("I Seek You") is a program you can download that will let you know when friends and contacts are also online on the Internet, page them, and chat with them. In order to get maximum benefit from ICQ, both parties must have downloaded the ICQ program and have received a user identification number (UIN). The download and registration procedure are simple and enable you to send messages, files (single, multiple or whole directories), and URLs directly to your friends' desktops. In addition, you can initiate an IRC-style chat session or voice and video-voice connection and play games with other ICQ members that you are in touch with. Your contact is signaled of an incoming event as soon as it arrives and has immediate access to it.

Instant Messaging is a type of communications service that enables you to create a private chat room with another individual. Typically, an instant messaging system alerts you whenever somebody on your private list is online. You can then initiate a chat session with that particular individual.

Currently, there are several competing instant messaging systems, and no standard. Therefore, anyone a computer user would want to send an instant message to must use the same instant messaging system that the sender uses.

Conventionally, IRC, ICQ, and Instant Messaging are generally limited for use by users having a personal computer (PC) attached to the Internet.

More recently, there have been general announcements by some manufacturers of plans to develop Instant Messaging for use in a mobile handset. However, the proposed solutions apparently utilize new, vendor-specific handsets (e.g., from MOTOROLA) and a proprietary chat protocol (e.g., AOL's Instant Messenger). Thus, a user desiring to utilize such a new service must by a new mobile handset from the particular vendor including functionality to operate the necessary proprietary chat protocol.

There have also been announcements of plans to develop browser-specific software for chat. However, such solutions require a mobile handset manufacturer to load special software on the handsets, which is not a procedure that can be performed easily or properly by many consumers or carriers.

Conventional approaches or plans allowing implementation of Instant Messaging or other chat functionality in mobile handsets (e.g., wireless

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telephones using analog, TDMA or CDMA RF technology) do not provide for chat participation by older, currently existing mobile telephones (i.e., "mobile terminated telephones"). Moreover, the conventional approaches do not allow standard mobile telephones (i.e., not having browser-specific chat software or other proprietary software loaded) to originate a chat message.

There is a need for a technique and apparatus which allows standard mobile telephones to participate in Internet chat groups such as those provided by Instant Messaging, Internet Relay Chat (IRC), or ICQ.

SUMMARY OF THE INVENTION

In accordance with the principles of the present invention, a device and method for providing access to a channel of an Internet Relay Chat group to a mobile device comprises placing a mobile chat proxy server in a communication path between a standard Internet Relay Chat server and a wireless gateway server supporting the mobile device. The mobile chat proxy server forwards chat commands from the mobile device to the standard Internet Relay Chat server.

Another device and method of handling chat group commands between a mobile device and a chat group server in accordance with another aspect of the present invention comprises examining non-standard chat group commands transmitted by a mobile device. The standard chat group commands are forwarded based on the non-standard chat group commands to the chat group server.

BRIEF DESCRIPTION OF THE DRAWINGS

Features and advantages of the present invention will become apparent to those skilled in the art from the following description with reference to the drawings, in which:

Fig. 1 shows an exemplary chat system using a proxy chat server between a standard IRC server and a service provider gateway such as a wireless internet gateway, in accordance with the principles of the present invention.

Fig. 2 shows exemplary types of interfaces used to interconnect the various devices shown in Fig. 1.

Fig. 3 shows how the invention is able to support various types of clients for Chat services. The software allows other applications, such as web servers and WAP Servers, to enroll participants in Chat groups.

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Fig. 4 shows an overview of the communications between the user of the mobile device, the short messaging system controller, the mobile chat proxy server, the database, the conventional IRC server, and IRC clients participating in a chat group, in accordance with the principles of the present invention.

Fig. 5 shows an exemplary top level sequence of events in an initial mobile originated connection using a mobile chat proxy server, in accordance with the principles of the present invention.

Fig. 6 shows an exemplary top level sequence of events in a mobile originated conversation using a mobile chat proxy server, in accordance with the principles of the present invention.

Fig. 7 shows an exemplary top level sequence of events for an improperly formatted mobile originated message using a mobile chat proxy server, in accordance with the principles of the present invention.

Fig. 8 shows an exemplary processing of a message queue of a mobile chat proxy server, in accordance with the principles of the present invention.

Fig. 9 shows an exemplary sequence of events in an Applet-based conversation, in accordance with the principles of the present invention.

Fig. 10 illustrates the components of an IRC chat group solution allowing IRC-enabled mobile handsets to participate in IRC chat groups using an Interworking Function (IWF) connection (in place of the SMPP connection shown in Fig. 1), in accordance with the principles of the present invention.

Fig. 11 shows an initial connection to the IRC server shown in Fig. 10, in accordance with the principles of the present invention.

Fig. 12 is a detailed process flow showing the validation of the mobile user in the mobile chat system shown in Fig. 11.

Fig. 13 shows an update of the provisioning database in the system of Fig. 10, in accordance with the principles of the present invention.

Fig. 14 shows an exemplary process of an IRC "Notice" command, in accordance with the principles of the present invention.

Fig. 15 shows an exemplary IRC "Notify" command having special properties for an SMS, in accordance with the principles of the present invention.

Fig. 16 shows a special "Ghost" command to enable a user to monitor an IRC chat group (or channel) via the short message service (SMS)

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without maintaining a connection to the conventional IRC server, in accordance with the principles of the present invention.

Fig. 17 shows the implementation of a special IRC "Invite" command to provide the mobile user with the opportunity to use SMS to extend chat invitations to other mobile users, in accordance with the principles of the present invention.

Fig. 18 shows a conventional Internet Relay Chat (IRC) group based on a client-server model, or network, wherein a user connects to an IRC server in an IRC network to start or join an IRC chat group (channel).

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The present invention allows mobile and other devices to participate in Internet Relay Chat (IRC) groups, ICQ, and/or Instant Messenger groups using open standards (e.g., IRC). The solution allows standard mobile originated, WAP, and HDML handsets to both read (e.g., "lurk") and to participate in chat groups, and allows standard mobile terminated handsets and pagers to read (i.e., "lurk") in chat groups. It also allows a user to distribute a Chat session across two mobile devices: one for posting messages (e.g. a Palm VII) and one for receiving messages (e.g., a mobile-terminated phone).

Fig. 1 shows an exemplary chat system using a proxy chat server **100** between a standard IRC server **190** and a service provider gateway such as a wireless internet gateway **106**, in accordance with the principles of the present invention.

In particular, Fig. 1 shows an architecture using a 'best of breed' component-based approach, utilizing a third party standard IRC server **190**, a wireless Internet gateway **106**, and an (optional) Oracle database **108**.

An appropriate wireless Internet gateway **106** is commercially available from TeleCommunication Systems, Inc. in Annapolis, Maryland. The wireless internet gateway **106** is accessed by a subscriber mobile handset **102** through a servicing short message servicing center (SMSC) **104**.

Importantly, as shown in Fig. 1, a mobile chat (MOChat™) proxy server **100** is provided between the standard IRC server **190** and the relevant wireless internet gateway **106**. The mobile chat proxy server 100 is also referred to as a "mobile originated chat server", and/or under its trademark name of a "MOChat™ proxy server". The mobile chat proxy server **100** integrates the

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components shown in Fig. 1 by serving as a proxy between the wireless Internet gateway **106** and the standard IRC server **190**.

Fig. 2 shows exemplary types of interfaces used to interconnect the various devices shown in Fig. 1.

In particular, Fig. 2 shows the insertion of a mobile chat proxy server **100** between a conventional IRC server **190a** and a wireless Internet gateway **106**. Thus, the solution utilizes a two-tiered IRC server approach-one conventional (IRC server **190a**), and an inventive proxy server (MO Chat™ server **100**), to allow wireless device (e.g., mobile handset **102**) users to read and/or participate in chat groups. Note the presence of the Internet **202** and wireless network **204**.

In Fig. 2, all IRC communications are according to IRC request for comments (RFC) 1459. Moreover, as shown, all SMPP communications are according to the v3.3 specification published by Aldiscon. SMPP v3.4 can also be supported.

Communication between the mobile chat proxy server **100** and the wireless Internet gateway **106** uses the Java Remote Invocation Protocol (RMI). RMI is a distributed computing protocol that allows separate programs, potentially on separate computers, to exchange software objects. Using a special implementation of this protocol, a very powerful and flexible mechanism is provided for external applications (such as the mobile chat proxy server **100**) to interact in an object-oriented fashion with the SMSC **104** and wireless handsets **102**.

Any conventional IRC server can be used as the standard IRC server **190a** shown in the Figs. 1 and 2. Although some IRC servers can be modified for special needs, a strength of the principles of the present invention is that the use of the mobile chat proxy server **100** allows chat room participation to conform to open standards. Exemplary RFC and IRC architecture can be found at http://www.ietf.org/rfc/rfc1459.txt.

After binding to the wireless Internet gateway **106**, the mobile chat proxy server **100** exchanges message objects with the wireless Internet gateway **106**. The messages are of various types, including text messages to and from wireless devices such as the wireless mobile handset **102** shown in Fig. 2. By binding to the wireless Internet gateway **106**, the mobile chat proxy server **100** can receive messages from mobile (i.e., wireless) devices, and/or send messages

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to other mobile (i.e., wireless) devices, providing the basis for chat group participation by mobile devices.

The interface to the conventional IRC server **190a** from the mobile chat proxy server **100** uses standard IRC protocol. Thus, the present invention allows the continued use of existing IRC servers **190a**, with the added functionality of allowing mobile users to participate in chat groups by simply adding a mobile chat proxy server **100** as an interface device to a wireless network.

The mobile chat proxy server **100** maintains a real-time proxy connection to the conventional IRC server **190a** for each mobile device, e.g., mobile handset **102**. From the perspective of the IRC server **190a**, connections through the mobile chat proxy server **100** appear as regular (e.g., standard conforming) IRC clients. Accordingly, chat messages from the conventional IRC server **190a** are sent to a connection in the mobile chat proxy server **100**, which are in turn forwarded through the wireless Internet gateway **106** to the mobile devices, e.g., mobile handset **102**.

In operation, the mobile chat proxy server **100** interprets chat messages from mobile devices, and determines if and how they should be forwarded to the conventional IRC server **190a**.

For example, a message with content "#ABC" will cause the mobile chat proxy server **100** to send a command to the conventional IRC server **190a** that will enroll the relevant device in the #ABC chat group. At that point, the relevant mobile user will be participating in the #ABC chat group, and all other group members, Internet based or otherwise, will be aware of the new participant.

Once registered in a chat group, any non-command based messages from a mobile device will be directly forwarded by the mobile chat proxy server **100** to the conventional IRC server **190a**, where they will be broadcast to all chat group members. Messages from other members of the chat group will be sent from the conventional IRC server **190a** to a connection in the mobile chat proxy server **100**, then to the wireless Internet gateway **106**, and then finally to the mobile handset **102**.

The interface between the mobile chat proxy server **100** and the wireless Internet gateway ("gateway") **106** is unique in that the gateway acts as wireless messaging middleware in which the details of reliable transmission to the wireless destination (e.g., mobile handset **102**) are hidden from the chat group clients.

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In particular, using Java's RMI protocol between the mobile chat proxy server **100** and the wireless Internet gateway **106**, mobile chat group clients can directly access the Queue and SMPP objects within the wireless Internet gateway **106**. Most simply, mobile chat group clients can create a message object and insert it into a remote queue of the wireless Internet gateway **106**. Upon doing so, the wireless Internet gateway **106** will synchronously return a unique message tracking number. The remote queue can later be queried to determine the status of delivery.

In this exemplary scenario, details regarding message delivery can be completely hidden from the mobile chat group client; whether it is delivered by SMPP, TNPP, or the Web does not matter. The mobile chat proxy server **100** utilizes the RMI interface between the mobile chat proxy server **100** and the wireless Internet gateway **106** for sending messages to the chat group participants using mobile handsets.

The mobile chat proxy server **100** also utilizes the remote SMPP interface of the wireless Internet gateway **106**, which communicates with the short messaging system controller (SMSC) **104**. A suitable SMSC is commercially available from TeleCommunication Systems Inc. in Annapolis, Maryland.

The remote SMPP interface allows mobile chat group clients to directly interact with the SMPP messaging traffic of the SMSC **104**, and thus allows a mobile chat group client to send and receive SMPP message objects of various types. In the disclosed embodiment, the SMPP message types are object-oriented.

In the disclosed embodiment, an object or module named "MobileReceiver" binds to the SMPP interface of the wireless Internet gateway **106** to allow reception of mobile chat group messages. Similarly, an object or module named "MobileSender" utilizes the remote queue to allow delivery of chat group messages to wireless devices (e.g., mobile handsets) serviced by the wireless network **204**.

The mobile chat proxy server **100** is able to receive SMPP messages through the remote SMPP interface from the wireless Internet gateway **106** that represent mobile originated messages from the mobile device (e.g., mobile handset **102**). The mobile chat proxy server **100** is therefore able to receive chat group messages from the mobile handset **102**, interpret them in the

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IRC context, and send appropriate standardized IRC commands to the conventional IRC server **190a**.

This solution has applicability beyond regular chat groups. For instance, to subscribe to various pre-defined chat groups (i.e., Information Cafe™ chat groups), only a predefined application in the mobile chat proxy server **100** may publish messages to these chat groups. Information Café™ chat groups can be created according to the type of information that will be published by the predefined application. For example, Information Café™ chat groups might exist for hourly news updates.

Use of an IRC proxy gateway in accordance with the principles of the present invention provides front-end services to a standard IRC server. For example. the IRC proxy gateway (i.e., mobile chat proxy server **100**) can provide user validation, special short messaging system (SMS) handling for certain commands (e.g., Notify, Notice, Mode, Ghost, etc.), and/or customer-requested metrics. Moreover, a mobile chat proxy server **100** provides mobile enhancements to standard IRC commands. The mobile chat proxy server **100** can utilize any appropriate operating system, e.g., UNIX or WINDOWS NT.

A core notion of the present invention is the placement of a proxy between an otherwise conventional Internet Relay Chat (IRC) server and the wireless components of a mobile system. Moreover, features such as summoning other mobile users to join a mobile originated chat group, and/or ghosting a chat session remain the same.

Figure 3 shows how the Chat Server integrates with other Server Software to provide Chatting capabilities to a greater number of mobile devices, including PALM VII and phone browser clients. The Chat Server offers an open software interface based on the Remote Method Invocation protocol. Using this interface, TCS has enabled Palm VII, WML, and HDML handset browsers to interact with the Chat Server. These three devices interact with the Chat Server by way of a Web Server with Java Servlet support. The phone browsers must also communicate through an Unwired Planet Server or WAP Server for HDML and WML browsers, respectively. The devices interact with a Servlet running on the Web Server. Using the Chat Server's RMI connection, the Servlet is able to pass chat messages between the Chat Server and the browser device. The result is that all of these devices can participate in the same chat groups and can have awareness of one another.

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Figure 3 also illustrates how standard IRC enabled clients can interact directly with the Chat Server. The Chat Server is thereby able to provide consistent user authentication and special services to the IRC clients. IRC clients are available for most major computer systems as well as small devices such as Palm Pilots and Windows CE devices. It is also also possible to run IRC client software natively on mobile phones. In which case, as a standard IRC client, the phone directly interacts with the Chat Server. Figure 11 illustrates this scenario, which is described in greater detail later in this document.

Finally, Figure 3 also shows integration between the Chat Server and external Chat Services such as AOL's Instant Messenger (AIM) and ICQ. The Chat Server is designed to accommodate gateway services that translate between these proprietary systems and IRC. Since the Chat Server is the central messaging hub, multiple devices from multiple services can all intercommunicate and be aware of one another.

When integrating with Mobile Originated handsets through the Wireless Internet Gateway and SMSC, users may issue special chat commands. In accordance with the principles of the present invention, rather than requiring upgrading of an existing IRC server base, a mobile chat proxy server **100** can be interjected between the participating client and the relevant conventional IRC server **190**. In this way, the mobile chat proxy server **100** intercepts the special commands, interprets the special commands, and either acts on the special commands or forwards the special commands to the conventional IRC server **190**.

For example, a chat group user may issue the command "alias*Fred". This special command will be intercepted by the mobile chat proxy server **100**, and interpreted to cause the mobile chat proxy server **100** to send an appropriate command to the conventional IRC server **190** to change the alias for the relevant mobile user to 'Fred'.

As another example, the "summon" command may be used to allow mobile users to request other mobile users to join a particular chat group. The "summon" command is processed by the mobile chat proxy server **100** and acted on itself, without forwarding the same to the standard IRC server **190**.

The specifics of the actual command strings to be entered for interpretation by the mobile chat proxy server **100** (e.g., 'alias', 'summon', etc.) may be configured by the administrator.

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System requirements and analysis of the exemplary mobile chat proxy server **100** follow, together with a more detailed description of the relationship between the mobile chat proxy server **100** and the conventional IRC Server **190**.

The mobile chat proxy server **100** facilitates 2-way text conversations between users of cell phones **102**, web browser users **330**, and/or other chat group users, e.g., Instant Messaging service users.

Several possible scenarios are accommodated by the mobile chat proxy server **100**, in accordance with the principles of the present invention.

Scenario A: Peer to Peer user chats

1. Mobile (i.e., wireless) user A @MIN (4102631111) would like to send an individual message to another member in the Chat community.
2. Using her phone, mobile user A sends a mobile originated message to '3428' (CHAT) with body "@<alias> <message_content>."
3. The content is sent to the IRC Server as a private message, where it is delivered only to the specified recipient. If the recipient happened to be a mobile user, then the message would arrive on the recipient's mobile device.

Scenario B: Mobile user creates/initiates participation in chat group

1. Mobile user A would like to participate in a chat group (#LB). They enter the command "#LB" to destination CHAT.
2. The SMSC **104** forwards the message to the mobile chat proxy server **100** for handling. If the group #LB was already created, then the mobile chat proxy server **100** adds mobile user A to the chat group and forwards messages sent to that chat group their way. If that chat group is not yet created, then that chat group is automatically created and they are added.

Scenario C: Web browser user joins chat group and requests mobile user's participation.

1. Web browser user C would like to conduct a text based conversation within chat group #LB.

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2. Using any IRC capable application, the web browser user C connects to the mobile chat proxy server **100**, e.g., using the TCP/IP port 6700 (or other specified port).
3. Once connected to the conventional IRC Server **190**, the user joins the #LB chat group.
4. The mobile chat proxy server **100** sends mobile user A a Reply Requested message asking them if they would like to engage in a chat with web browser user C at chat group #LB. If mobile user A accepts, then mobile user A is added to the LB chat group, thus allowing mobile user A and web browser user C to conduct a text based conversation.
5. If mobile user A rejects, then web browser user C is notified, but the #LB chat group continues to exist with web browser user C as a participant.

Scenario D: Web browser user initiating privat chat only with a mobile user.

1. Web browser user C wants to initiate a private chat only with mobile user A.
2. Web browser user C submits A's MIN, and their desire to conduct a private chat with mobile user A, to the mobile chat proxy server **100**.
3. The mobile chat proxy server **100** creates a new chat group with web browser user C's name (or a unique derivative), and enters web browser user C into the newly created chat group.
4. The mobile chat proxy server **100** sends mobile user A a Reply Requested message asking for confirmation to participate in a private chat with web browser user C.
5. Mobile user A's response is shown to web browser user C.
6. If mobile user A accepts, mobile user A is added to the chat group and any outgoing messages to 'CHAT' from mobile user A will be sent to web browser user C.
7. If mobile user A is already in another chat group, then mobile user A must specify the destination of the message [[#]group_name[*]message. Alternatively, the mobile chat proxy server **100** can prompt the mobile user A for the identity of the desired chat group.

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The mobile chat proxy server **100** allows mobile users to be in multiple chat groups simultaneously. However, if so, the mobile user must identify the name of the chat group a particular message is destined for. If the mobile user does not identify the name of the chat group, the mobile chat proxy server **100** can send a message back to the mobile user requesting that they identify the name of the chat group for which the message is destined. The chat server can also be configured to limit users to joining only a single chat group at a time.

Upon joining a chat group, the mobile chat proxy server **100** can send a message to the mobile user notifying him/her the name of the chat group which they have joined, e.g., "You've joined group KB as 1234". The administrator can disable this behavior by the chat server. Unless an alias has been provided, mobile users may be identified by, e.g., the last 4 digits in their MIN (or unique derivative).

The mobile user has the ability to create an alias. The alias may be in effect for the current chat session(s). A default alias may be used, e.g., if the mobile user has defined an alias through another web provisioning application. If so, the *ALIAS* command may be used to override the default alias for the duration of the chat session in that group. The administrator can disable the user alias feature.

The mobile user's MIN number may be made invisible if the mobile user wishes. However, for mobile device-to-mobile device chat group conversation, the MIN should be present to provide the required call back information.

Preferably, the mobile chat proxy server **100** can maintain statistics, e.g., regarding the number of chat messages sent/received by each MIN, just as the SMSC **104** typically does.

The mobile chat proxy server **100** is able to connect to multiple IRC Servers by simple changes in a configuration file. All operational parameters for the Chat Server are controlled through a configuration file.

Exemplary classes which can be implemented in accordance with the principles of the present invention are shown in the following table. Of course, these classes are for exemplary purposes only. Additional and/or alternative classes may be implemented within the scope of the present invention.

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MESSAGE HANDLER CLASSES
Message Class
IRC Session Class
Mobile Command Decoder
Active Session Container
Chat Server
Mobile Sender
Mobile Receiver
MOChat Defined Exception

Preferably, the mobile chat proxy server **100** is implemented to function while sharing a link ID, either with the wireless Internet gateway **106** or on its own. Moreover, the mobile chat proxy server **100** is preferably able to identify incoming chat requests, and to differentiate from other incoming messages (e.g., Delivery Receipts and MOE-mail requests).

Based on a particular application, mobile users may be configured or otherwise controlled to not receive a copy of chat group messages that they've sent.

In the disclosed mobile chat proxy server **100**, chat group messages to mobile devices may be limited to a predetermined number of characters, e.g., as defined by the administrator. Preferably, otherwise conventional gateway services, e.g., message truncation and linking, can be utilized.

Fig. 3 shows how the invention is able to support various types of clients for Chat services. The software allows other applications, such as web servers and WAP Servers, to enroll participants in Chat groups.

Fig. 4 shows an overview of the communications between the user of the mobile device **102**, the short messaging system controller **104**, the mobile chat proxy server **100**, the database **108**, the conventional IRC server **190**, and IRC clients **502** participating in a chat group, in accordance with the principles of the present invention.

In particular, as shown in Fig. 4, Mobile originated Chat allows a mobile user **102** using a cell phone to start a chat group. The mobile user **102** generates a chat message **502**, which is transmitted to the SMSC **104**. The SMSC forwards the mobile originated message **504** to the mobile chat proxy server **100**. The mobile chat proxy server **100** conducts user validation with

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message **506**, user options with message **508**, and allows validated users to enter the chat group of the conventional IRC server **190** with message **510**. The mobile user's chat group messages are copied to all chat group participants (IRC clients) **502**. Acknowledgements may be provided back from the IRC clients **502** to the conventional IRC server **190**, to the mobile chat proxy server **100**, to the SMSC **104**, and to the mobile user **102**.

On startup, the disclosed exemplary embodiment of a mobile chat proxy server **100** creates instances of the following primary objects for a ChatServer. These objects delegate to subclass and other objects for help.

OBJECT	DESCRIPTION
MessageHandler	Queue Based Thread that will process and dispatch all messages entering system.
ConfirmationSession Container	Whenever the MessageHandeler encounters an in-complete or ambiguous handheld message it will be the task of this object to clarify the message with the user. Once the message has been clarified it will then be sent back to the MessageHandeler.
Logger	Process for logging errors/notices to a central location. Each top-level object created by the ChatServer will receive a reference to this object. This will be an instantiation of the Logger class defined in the WebGateway.
MessageSender	Abstract class which details the necessary methods anyone wishing to implement a new chat service must implement to integrate with MOChat seamlessly.
MobileReceiver	The object is responsible for receiving and disseminating all messages received from the SMSC. MobileReceiver implements the SMPPListener interface and communicates to the gateway using RMI. Upon creation MobileReceiver will create the MobileSender class.
MobileSender	Implements the MessageSender interface and is responsible for transmitting all messages to the SMSC.
Config	This object encapsulates all access to MOChat Configuration information.
MobileCommandDecoder	This class will parse and return requested parts of Mobile Command. All new mobile commands added to MOChat must be implemented here.
WebProvisionInfo	Returns requested information from the Web Proivisioning database about a user when given a MIN.

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Message	Primarily a data class that encapsulates all information about MOChat messages in system. Class also has the ability to read/save properties to an XML document.
ReplyRequestMessage	Subclass of Message. Used when sending reply requested messages to mobile user for Confirmation.
IRCSession	The IRCSession is a mini IRC Client. It encapsulates all conversations between the user and the IRC Server.

The Config class will load the configurable parameters from a properties file, e.g., a "MOCHAT.properties" file. Preferably, the mobile chat proxy server **100** will be configurable through user options. In the disclosed embodiment, configuration information may be retrieved using the Config object class.

Exemplary Format of Mobile Commands

Transactions from cell phones may be initiated by sending a mobile originated (MO) message to address 3428 (CHAT) with the following format options:

Join a group	#<Group ID>
To join all pre-defined favorite Chat Groups. A Web interface allows users to define their favorite groups	J*
Send a message: If only in one group If in multiple groups	 <message> #<Group ID> <message>
Assign an alias	A*<new alias>
Summon another mobile user to join	S*<MIN>
Obtain information about groups: Which groups user has joined Who is in a group	 I* I*<Group ID?
Prevent announcements from being made when joining/exiting groups	H*
Exit Chat To exit from all groups To exit a particular Chat Group	 B* B*<Group ID>
Ghost chat messages to a MT device. To support MT devices, ghost requests can be sent from a web page or WAP/UP browser.	G*<MIN>

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Top Level Processing Logic for Mobile Chat Proxy Server

Fig. 5 shows an exemplary top level sequence of events in an initial mobile originated connection using a mobile chat proxy server, in accordance with the principles of the present invention.

Of particular note in Fig. 5, the IRemoteSMPPProxy process forwards the message to the MobileReceiver's receiveMessage method. This method will ensure that that the message is a mobile originated message. If it's a valid mobile originated message (i.e., not a delivery/read receipt, etc.), then the chat message is added to the MessageHandler's queue.

At that point, it is the job of the MessageHandler in conjunction with the ActiveSessionContainer to instantiated an instance of the IRCSession class to provide the services required by that mobile user.

Fig. 6 shows an exemplary top level sequence of events in a mobile originated conversation using a mobile chat proxy server, in accordance with the principles of the present invention.

In particular, as shown in Fig. 6, the IRemoteSMPPProxy process forwards the message to the MobileReceiver's receiveMessage method. This method ensures that that the message is a mobile originated message. If it's a valid mobile originated mMessage (i.e., not a delivery/read receipt, etc.), then the message is added to the MessageHandler's queue. The MessageHandler class in conjunction with the ActiveSessionContainer delivers the message to the users personal IRCSession for handling a sequence of events for an improperly formatted mobile originated message.

Fig. 7 shows an exemplary top level sequence of events for an improperly formatted mobile originated message using a mobile chat proxy server, in accordance with the principles of the present invention.

In particular, as shown in Fig. 7, an exemplary sequence of events for handling an improperly formatted message may be very similar to those of a mobile originated conversation as shown in Fig. 6. However, one difference in processing occurs when the MessageHandler processes the message. If the MessageHandeler is unable to accurately deliver the message, it transfers processing of the message to a ConfirmationSession. It is the responsibility of the ConfirmationSession to query the user for help in the appropriate processing of the message. The message will be discarded if the ConfirmationSession is unable to correct the message in a system defined time period.

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Fig. 8 shows an exemplary processing of a message queue of a mobile chat proxy server, in accordance with the principles of the present invention.

In particular, as shown in Fig. 8, the MessageHandler is responsible for dispatching messages to the individual IRCSession or chat source.

In theMessageHandler, once a message has been validated, it is added to the internal message queue **310**. The processQueue method of the MessageHandler checks the thread periodically (e.g., every x milliseconds) or when notified of a new item. The method processQueue dispatches the message to the appropriate recipient.

In the disclosed embodiment, the message queue **310** is a first-in, first-out (FIFO) type queue. Preferably, in the message queue **310**, if the message is ambiguous, it is preferably dispatched to the ConfirmationSession Container for further processing. If the message is a SUMMON with the recipient ID indicating a mobile number, then a summon SMS message will be sent to the recipient. If the message proceeds through the ambiguity test and the SUMMON test, then it will be sent to the sender's IRCSession for further handling.

In the disclosed embodiment, the MobileSummon executes within the same thread as the processQueue, but this need not necessarily be the case.

Fig. 9 shows an exemplary sequence of events in an Applet-based conversation, in accordance with the principles of the present invention.

In particular, as shown in Fig. 9, IRC clients (i.e., chat group participants) may connect to the conventional IRC server **190** using a conventional IRC chat group infrastructure or the Internet. Mobile users **102** may connect to the conventional IRC server **190** using a network or Internet connection including a mobile chat proxy server **100** in accordance with the principles of the present invention.

The invention also supports mobile handsets that are natively running an IRC client. IN this case, the handset does not communicate through the SMSC but directly interacts with the chat server. Fig. 10 illustrates the components of an IRC chat group solution allowing IRC-enabled mobile handsets **102** to participate in IRC chat groups using an Interworking Function (IWF) connection (in place of the SMPP connection shown in Fig. 1), in accordance with the principles of the present invention.

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The IRC chat group solution using an IWF connection as shown in Fig. 10 includes specialized IRC servers, a Local Director 416, and customer-provided IRC chat clients. The IRC Servers support the IRC protocol as defined by RFC 1459 and as enhanced for Unicode support through the 1998 Microsoft draft IRCX proposal. Any IRC client is able to attach to the chat solution. Mobile clients do not attach directly to an IRC server. Rather, clients attach to a single virtual server as represented by the Local Director. The Local Director load-balances the traffic across multiple IRC proxy servers. Proxy servers perform special actions that are applicable for mobile users, such as sending notices via SMS to users who are not connected to the chat server. If any proxy server becomes unavailable, then the Local Director automatically removes it from the pool of available servers. The Local Director will also automatically re-add servers that later become accessible. Interoperation between multiple servers is defined by the IRC specification.

An IRC software module in the mobile user handset **102** allows mobile users to participate in chat sessions. This IRC software module is configured to automatically connect via IWF to a specified number. Customer provided 'ISP hardware' such as the Ascend TNT can convert traffic from the destination modem to a direct TCP/IP connection to the Local Director. Once a connection is established, the phone appears as any standard IRC client.

Fig. 11 shows an initial connection to the IRC server shown in Fig. 10, in accordance with the principles of the present invention.

In particular, when the mobile user **102** initially connects, the IRC Proxy will validate whether that user has access to the specified service. Thus, user access to packet and e-chat services may be validated against the customer database **108** upon initial connection of that mobile user **102**.

Fig. 12 is a detailed process flow showing the validation of the mobile user **102** in the mobile chat system shown in Fig. 11.

In particular, as shown in Fig. 12, the mobile chat proxy server **100** queries the provisioning database **108** for the access rights of the currently connected mobile user **102**. If that mobile user **102** has access to the specified resources, then a connection to the conventional IRC server **190** will be initiated. Otherwise, the mobile user **102** may be informed of the reason for their denial via the mobile chat proxy server **100**. Password validation can also be provided at this point.

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After validating the mobile user **102**, the mobile chat proxy server **100** will forward all IRC traffic from the mobile user **102** to the conventional IRC server **190**, after examination of all IRC commands for the mobile specific implementation.

Fig. 13 shows an update of the provisioning database in the system of Fig. 10, in accordance with the principles of the present invention.

In particular, short messaging system (SMS) administrators may be presented with an appropriate web page or web page link to connect them to the provisioning database of the Internet gateway **1101** (Fig. 10). From such a web page, the administrator may update relevant user information regarding chat group use.

For instance, administrators may assign chat privileges to subscribers by accessing a custom link in the SMS web interface. This link may activate a preformatted form for assigning chat access to a particular MIN.

SMS special enhancements may be implemented to the IRC to enhance the mobile-user's experience.

For instance, Fig. 14 shows an exemplary process of an IRC "Notice" command, in accordance with the principles of the present invention.

In particular, the IRC "Notice" command may be used to initiate SMS messages to mobile handset users. This IRC "Notice" command may be used, e.g., to broadcast a message across multiple groups in an attempt to reach the destination party.

In one implementation, the mobile chat proxy server **100** will determine if the destination address for the Notice command is a MIN. If so, the Notice may be sent via the SMS to the mobile handset by way of the wireless Internet gateway **106**. The wireless Internet gateway **106** can ensure that the message is successfully delivered to the mobile handset. If the Notice destination is not a MIN, then it is handled normally.

IRC allows a user to issue commands. In the disclosed embodiment, example Notice commands to transmit a message to an identified user may be formatted as:

NOTICE <user> <message>; and

PRIVMSG <user> <message>

The mobile chat proxy server **100** may enable these commands by using the SMS to notify the mobile recipient of messages directed to them.

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Fig. 15 shows an exemplary IRC "Notify" command having special properties for an SMS, in accordance with the principles of the present invention.

In particular, as shown in Fig. 15, a NOTIFY <user> command allows a mobile user to request notification from the SMS when a specified user connects. When the user connects, an SMS message is sent to the requesting user identifying the connected user and channel. This 'buddy list' notification allows any of the devices connected to the chat server to be notified of other users when they are available.

With the Notify command, a mobile user can request to be notified when another user accesses the conventional IRC server **190**. Mobile users can utilize this feature by having SMS messages delivered to them when another user logs onto the conventional IRC server **190**. In this way, mobile users can be notified when their friends are ready to chat.

Preferably, notification requests remain active for only a specified period of time on the server.

Fig. 16 shows a special "Ghost" command to enable a user to monitor an IRC chat group (or channel) via the short message service (SMS) without maintaining a connection to the conventional IRC server **190**, in accordance with the principles of the present invention.

In particular, the Ghost command may be considered to be equivalent to the IRC "mode +i" command, as it is an IRC proxy implementation of the IRC "mode +i" command. Specifically, the user enters the "GHOST" command and disconnects from the conventional IRC server **190**. Once disconnected, the mobile chat proxy server **100** will forward all messages received in the chat group (or channel) to the user via SMS messages through the wireless Internet gateway **106**. This forwarding may be performed as long as desired, e.g., for a pre-configured, authorized, requested, or other period of time. The period of time may be system dependent.

Fig. 17 shows the implementation of a special IRC "Invite" command to provide the mobile user with the opportunity to use SMS to extend chat invitations to other mobile users, in accordance with the principles of the present invention.

In particular, as shown in Fig. 17, IRC protocols allow a user to issue the commands NOTICE <user> <message> and PRIVMSG <user> <message> to transmit a chat message to an identified user. In accordance with the principles of

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the present invention, the mobile chat proxy server **100** may enhance these commands with an INVITE command. Using the INVITE command, the mobile chat proxy server **100** uses the short message service (SMS) to notify mobile users of messages directed to them.

With the "Invite" command, the mobile user can request that the mobile chat proxy server **100** notify the specified user of a request to chat via SMS messaging. If the destination user is currently connected to IRC, they may be notified using the IRC protocol.

Preferably, a mobile chat proxy server **100** in accordance with the principles of the present invention supports the core messaging features of conventional IRC protocol as defined in RFC 1459 and as enhanced for Unicode support in the 1998 Draft IRCX specification by Microsoft. In accordance with the principles of the present invention, mobile devices (e.g., mobile handsets) desiring to lurk in a chat group, or participate in a chat group, include a native IRC client application which supports the IRC specification as defined in RFC 1459 and supporting Unicode as defined in, e.g., Microsoft Corporation's draft specification.

Preferably, the native IRC client application in the mobile device maintains a constant connection to the conventional IRC server **190** via the mobile chat proxy server **100** using the IWF for the duration of the chat session, during which time native IRC commands may be exchanged between the mobile user client and the conventional IRC server **190** as interpreted by the intervening mobile chat proxy server **100**.

Preferably, a TCP/IP socket connection will be established between the terminating IWF modem and the mobile chat proxy server **100**. The conventional IRC server **190** preferably has TCP/IP access to the wireless Internet gateway **106** for delivering short message system messages. The mobile handsets and the IRC client software in the conventional IRC server **190** will properly establish an IWF connection when an SMS message with appropriate callback is received and the user presses 'talk'. A full-time Internet connection may be made available if Internet-based IRC clients will be accessing the mobile chat proxy server **100**.

The invention has applicability for use by, e.g., wireless carriers, and as a portal site for mobile-terminated ghosting of chat groups.

While the invention has been described with reference to the exemplary embodiments thereof, those skilled in the art will be able to make

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various modifications to the described embodiments of the invention without departing from the true spirit and scope of the invention.

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CLAIMS

What is claimed is:

1. A method of providing access to a channel of an Internet Relay Chat group to a mobile device, comprising:

placing a mobile chat proxy server in a communication path between a standard Internet Relay Chat server and a wireless gateway server supporting said mobile device;

wherein said mobile chat proxy server forwards chat commands from said mobile device to said standard Internet Relay Chat server.

2. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, wherein:

said access includes participation in said channel by said mobile device.

3. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, wherein:

said mobile device comprises a mobile telephone.

4. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 3, wherein:

said mobile telephone is a mobile originated telephone with respect to said accessed channel of said Internet Relay Chat group.

5. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, wherein:

said mobile chat proxy server interprets Internet Relay Chat commands from said mobile device.

6. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, wherein:

said mobile chat proxy server passes communications with said mobile device through an SMPP interface in a direction toward said mobile device.

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7. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, wherein:

said mobile chat proxy server passes communications with said mobile device through an Interworking Function (IWF) interface in a direction toward said mobile device.

8. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, further comprising:

including a short message system controller between said mobile chat proxy server and said mobile device.

9. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, further comprising:

including a wireless Internet gateway between said mobile chat proxy server and said mobile device.

10. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 8, further comprising:

including a wireless Internet gateway between said mobile chat proxy server and said short message system controller.

11. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, further comprising:

summoning at least one other mobile device to join said Internet Relay Chat group.

12. The method of providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 1, further comprising:

ghosting said channel of said Internet Relay Chat group.

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13. A method of handling chat group commands between a mobile device and a chat group server, said method comprising:

examining non-standard chat group commands transmitted by a mobile device; and

forwarding standard chat group commands based on said non-standard chat group commands to said chat group server.

14. The method of handling chat group commands between a mobile device and a chat group server according to claim 13, wherein:

said chat group server is an IRC server.

15. The method of handling chat group commands between a mobile device and a chat group server according to claim 14, wherein:

said standard chat commands are standard IRC commands.

16. The method of handling chat group commands between a mobile device and a chat group server according to claim 14, wherein:

said non-standard chat commands are non-standard IRC commands.

17. The method of handling chat group commands between a mobile device and a chat group server according to claim 13, further comprising:

intercepting said chat group commands from said mobile device before reception by said chat group server.

18. The method of handling chat group commands between a mobile device and a chat group server according to claim 13, further comprising:

validating a user of said mobile device before forwarding said chat commands to said chat group server.

19. The method of handling chat group commands between a mobile device and a chat group server according to claim 18, wherein:

said chat commands are IRC commands.

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20. Apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device, comprising:

a mobile chat proxy server in a communication path between a standard Internet Relay Chat server and a wireless gateway server supporting said mobile device;

wherein said mobile chat proxy server forwards chat commands from said mobile device to said standard Internet Relay Chat server.

21 The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, wherein:

said access includes participation in said channel by said mobile device.

22. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, wherein:

said mobile device comprises a mobile telephone.

23. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 22, wherein:

said mobile telephone is a mobile originated telephone with respect to said accessed channel of said Internet Relay Chat group.

24. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, wherein:

said mobile chat proxy server interprets Internet Relay Chat commands from said mobile device.

25. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, wherein:

said mobile chat proxy server passes communications with said mobile device through an SMPP interface in a direction toward said mobile device.

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26. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, wherein:

said mobile chat proxy server passes communications with said mobile device through an Interworking Function (IWF) interface in a direction toward said mobile device.

27. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, further comprising:

a short message system controller between said mobile chat proxy server and said mobile device.

28. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, further comprising:

a wireless Internet gateway between said mobile chat proxy server and said mobile device.

29. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 27, further comprising:

a wireless Internet gateway between said mobile chat proxy server and said short message system controller.

30. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, further comprising:

means for summoning at least one other mobile device to join said Internet Relay Chat group.

31. The apparatus for providing access to a channel of an Internet Relay Chat group to a mobile device according to claim 20, further comprising:

means for ghosting said channel of said Internet Relay Chat group.

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32. Apparatus for handling chat group commands between a mobile device and a chat group server, comprising:

means for examining non-standard chat group commands transmitted by a mobile device; and

means for forwarding standard chat group commands based on said non-standard chat group commands to said chat group server.

33. The apparatus for handling chat group commands between a mobile device and a chat group server according to claim 32, wherein said chat group server comprises:

an IRC server.

34. The apparatus for handling chat group commands between a mobile device and a chat group server according to claim 33, wherein:

said standard chat commands are standard IRC commands.

35. The apparatus for handling chat group commands between a mobile device and a chat group server according to claim 33, wherein:

said non-standard chat commands are non-standard IRC commands.

36. The apparatus for handling chat group commands between a mobile device and a chat group server according to claim 32, further comprising:

means for intercepting said chat group commands from said mobile device before reception by said chat group server.

37. The apparatus for handling chat group commands between a mobile device and a chat group server according to claim 32, further comprising:

means for validating a user of said mobile device before forwarding said chat commands to said chat group server.

38. The apparatus for handling chat group commands between a mobile device and a chat group server according to claim 37, wherein:

said chat commands are IRC commands.

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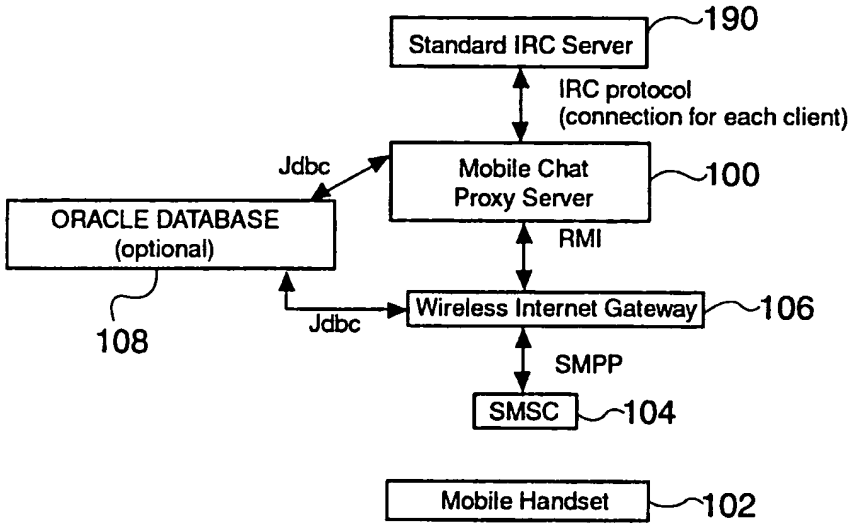

FIG. 1

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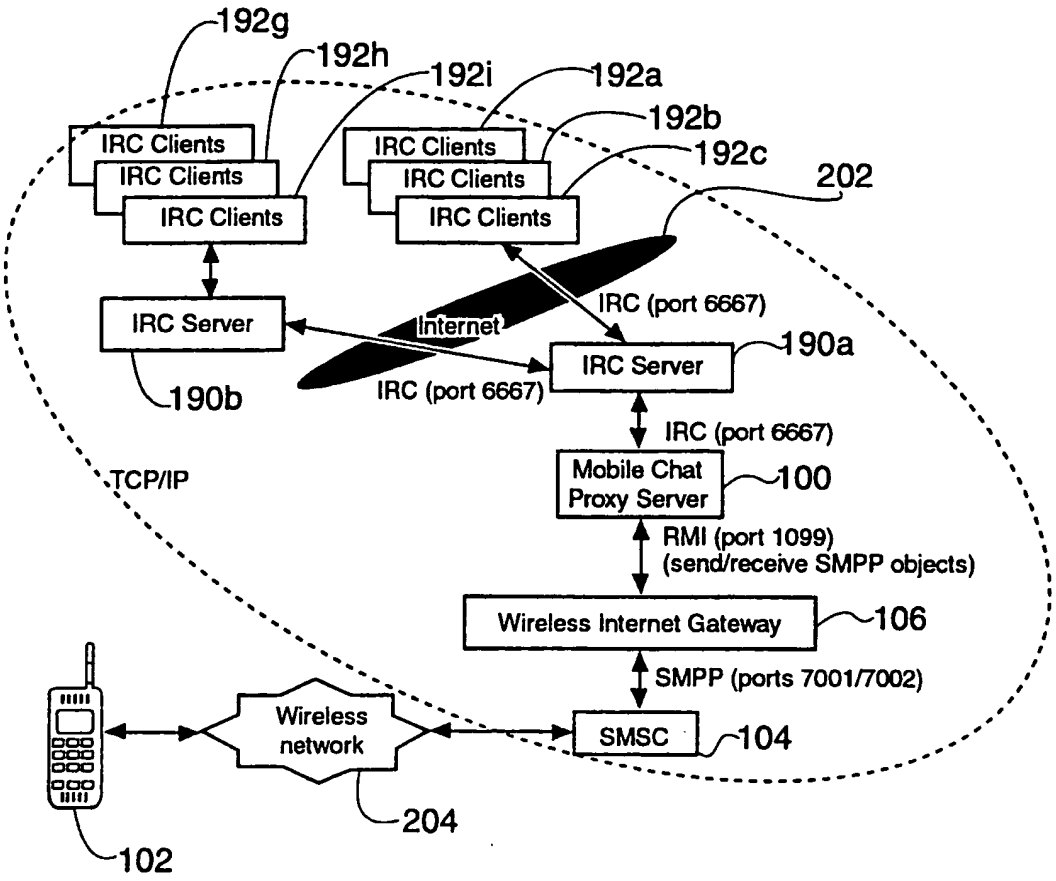

FIG. 2

Apple Inc.
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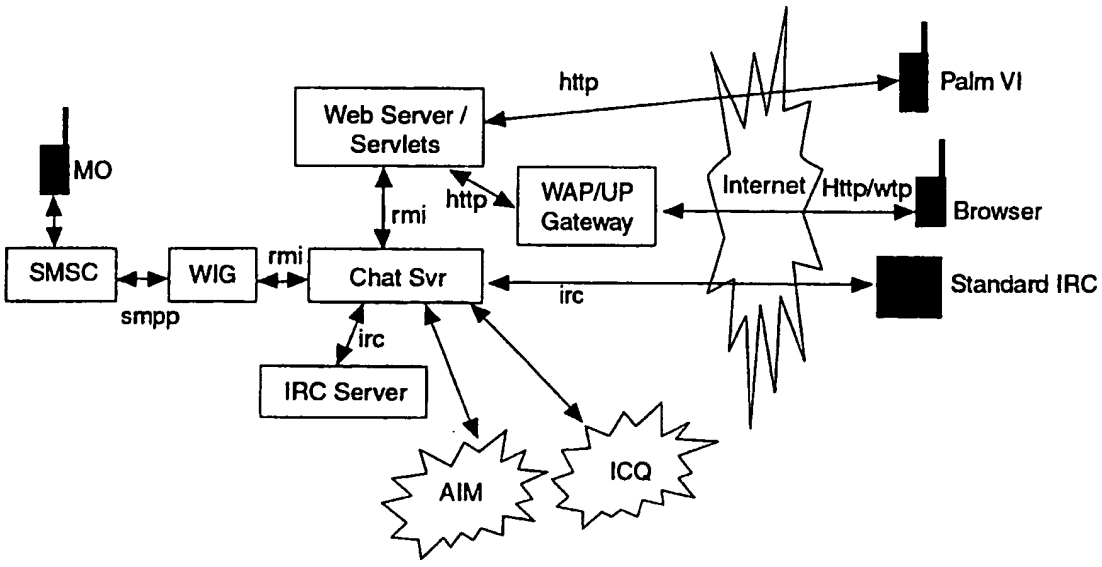

FIG. 3

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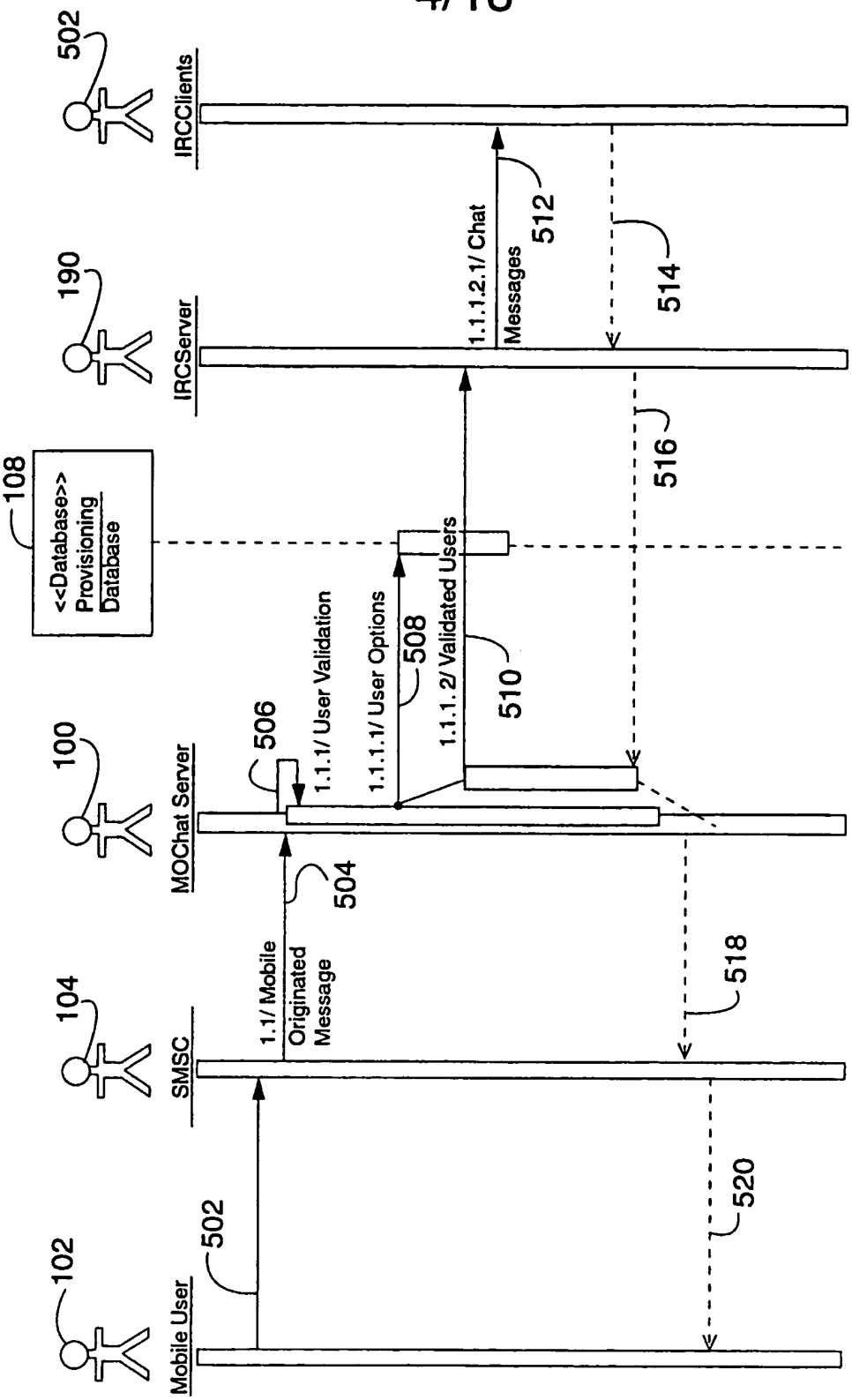

FIG. 4

OVERVIEW OF MOBILE ORIGINATED CHAT SERVER

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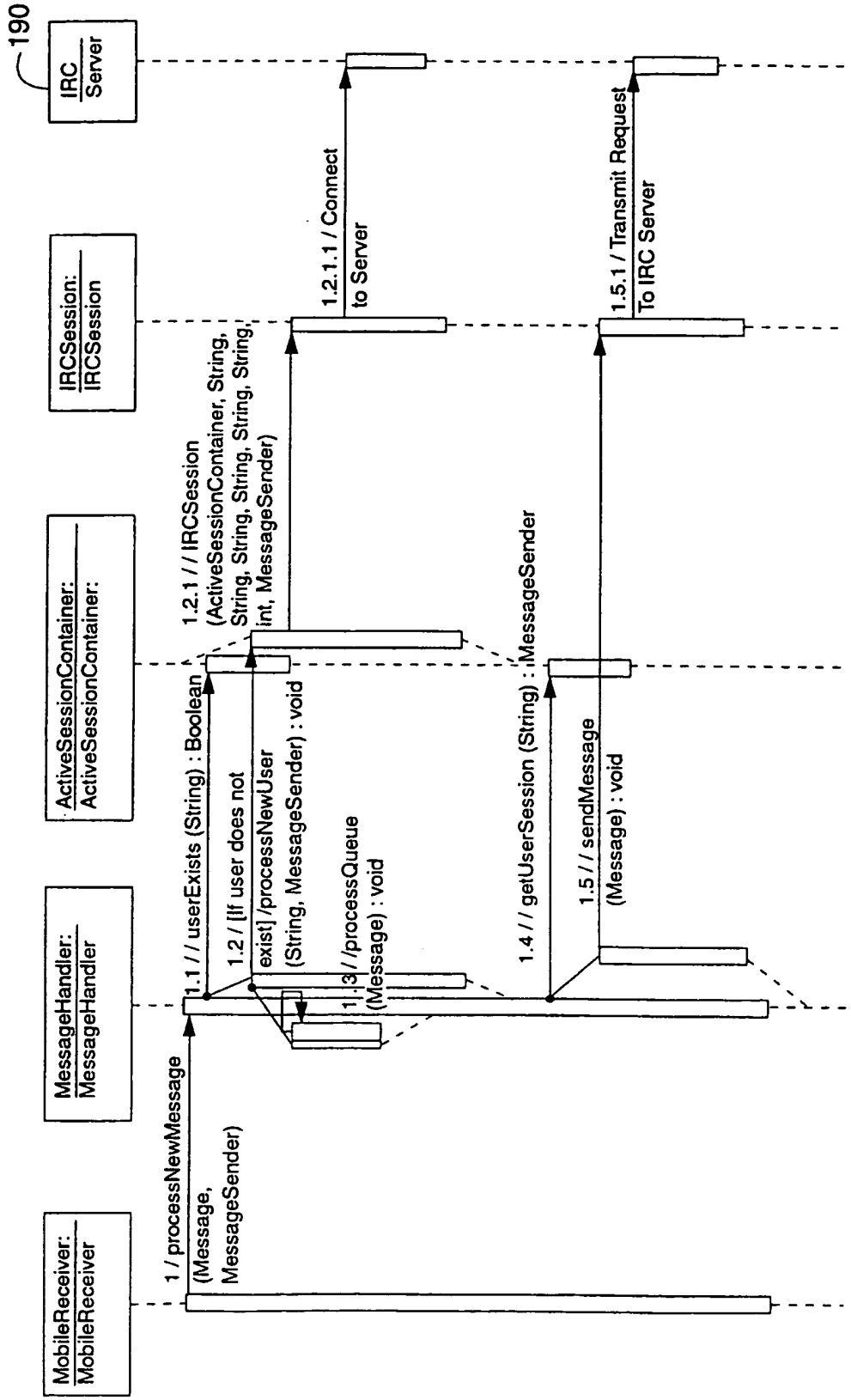

FIG. 5

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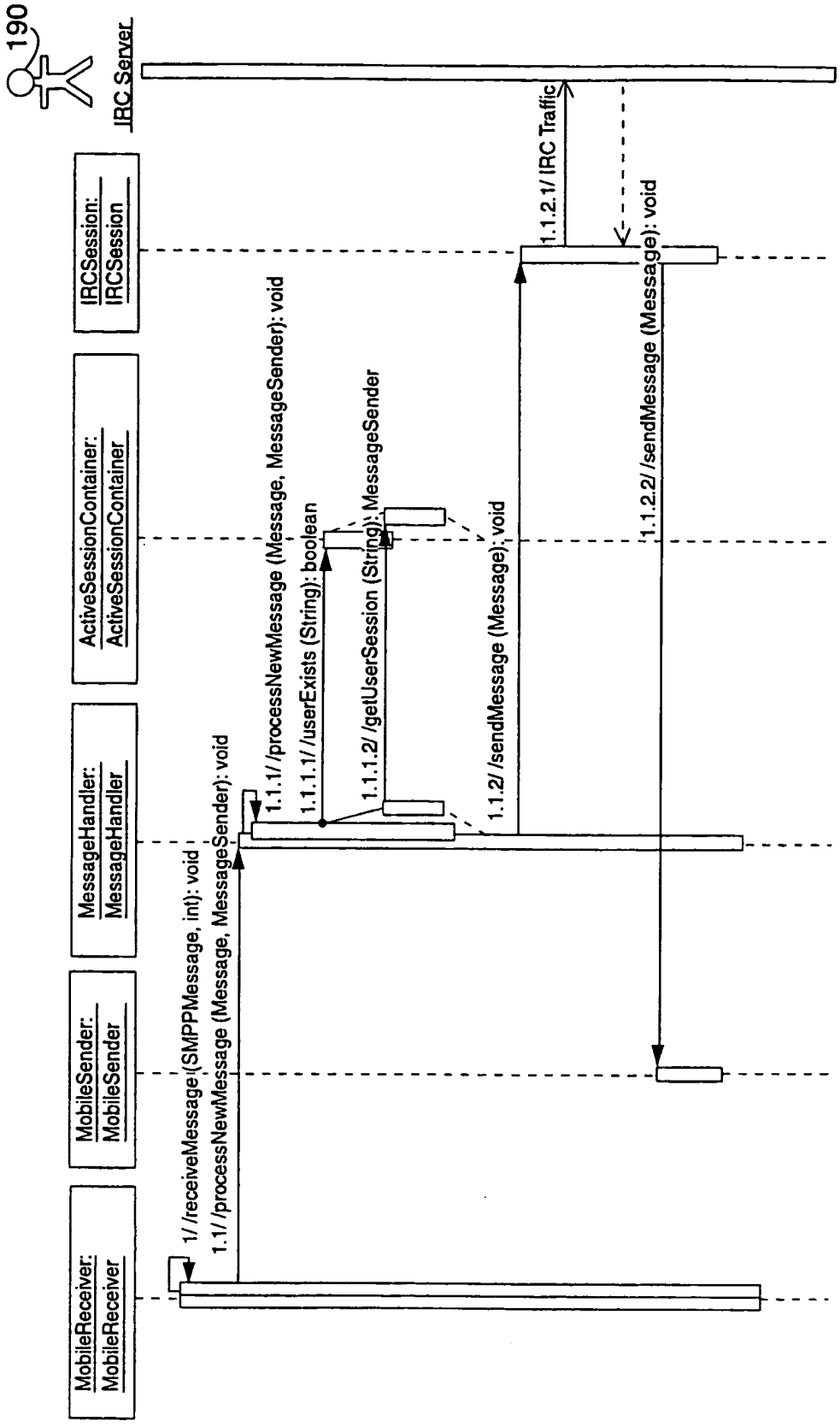

FIG. 6

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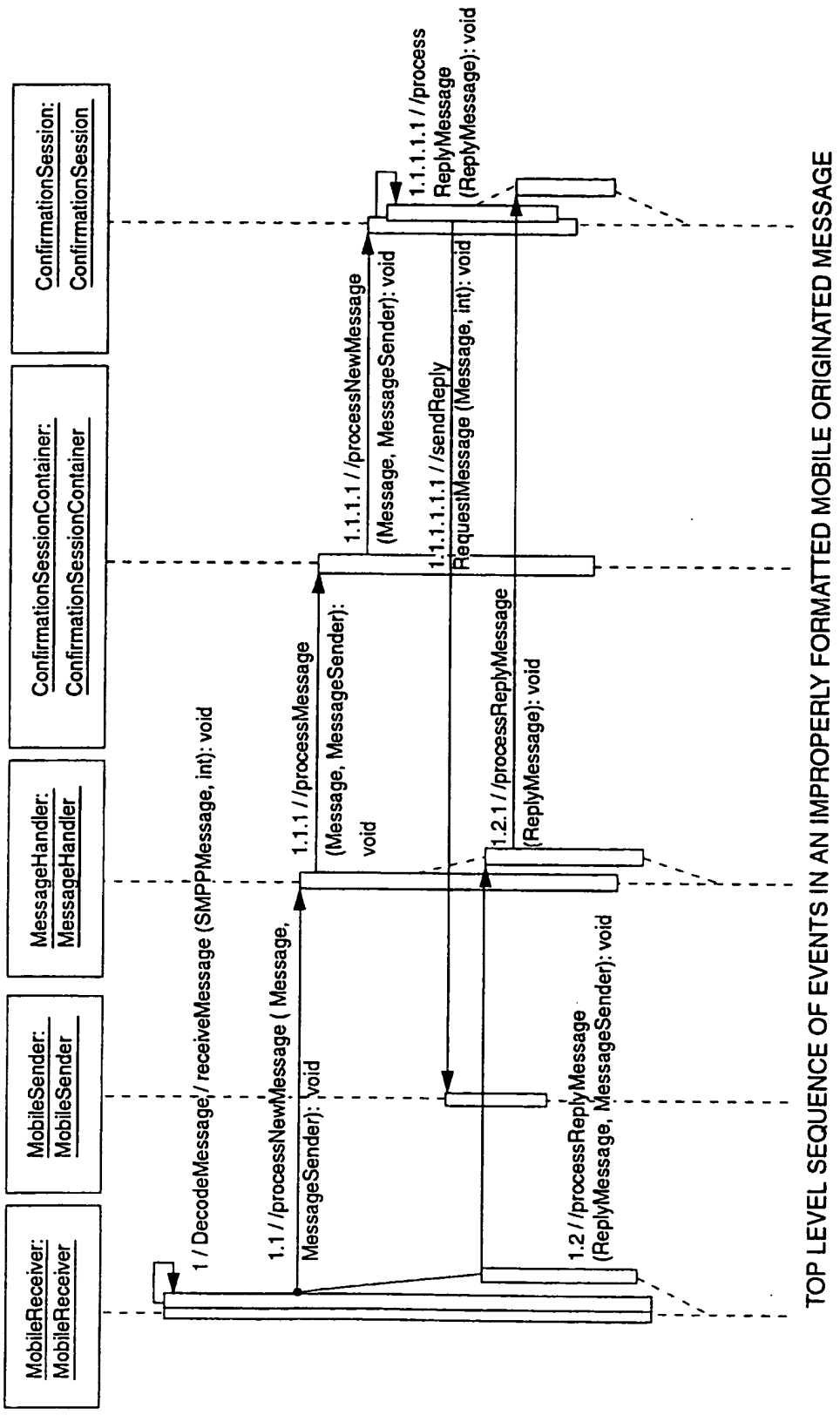

FIG. 7

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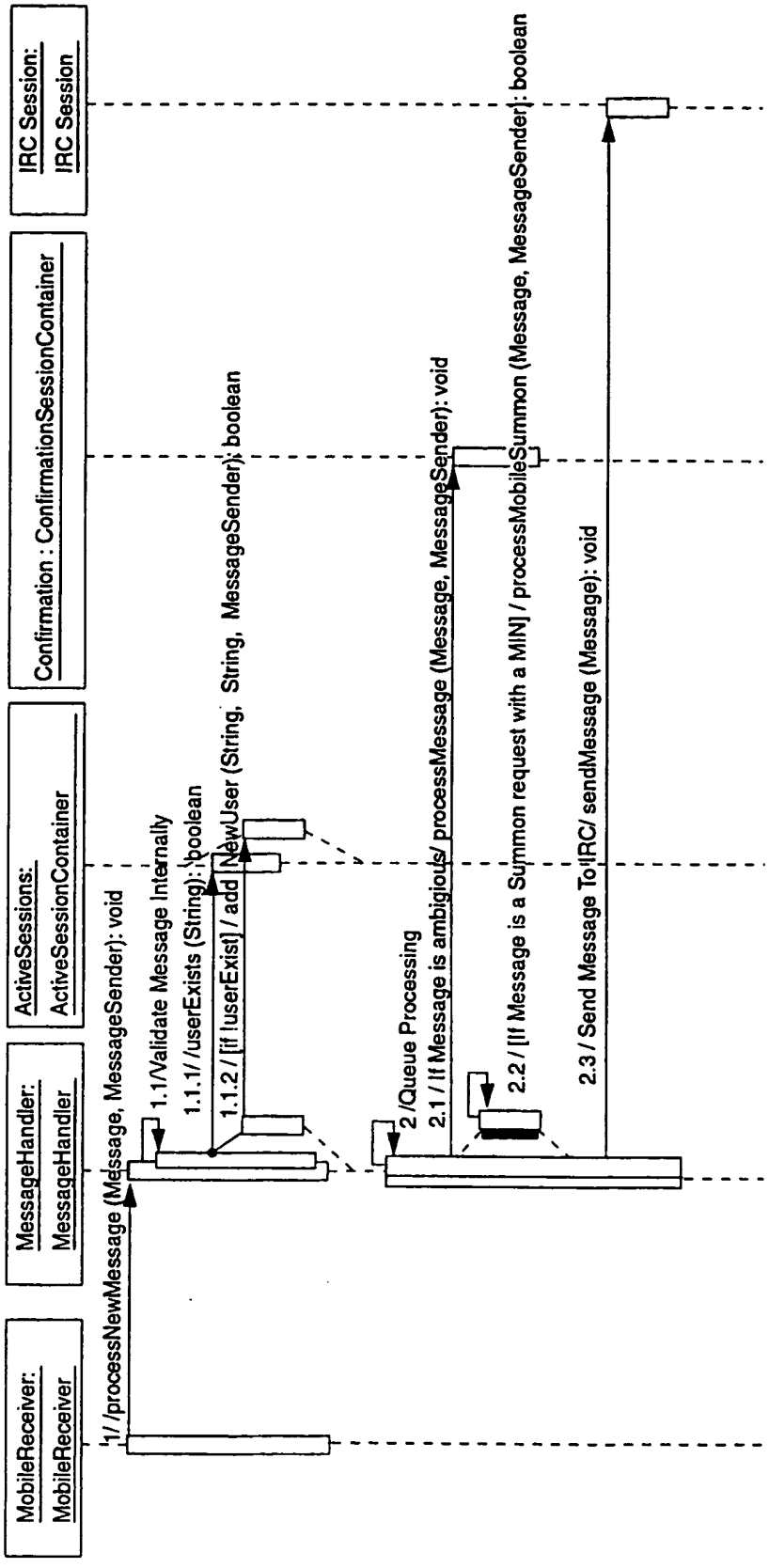

PROCESSING OF MESSAGE QUEUE

FIG.8

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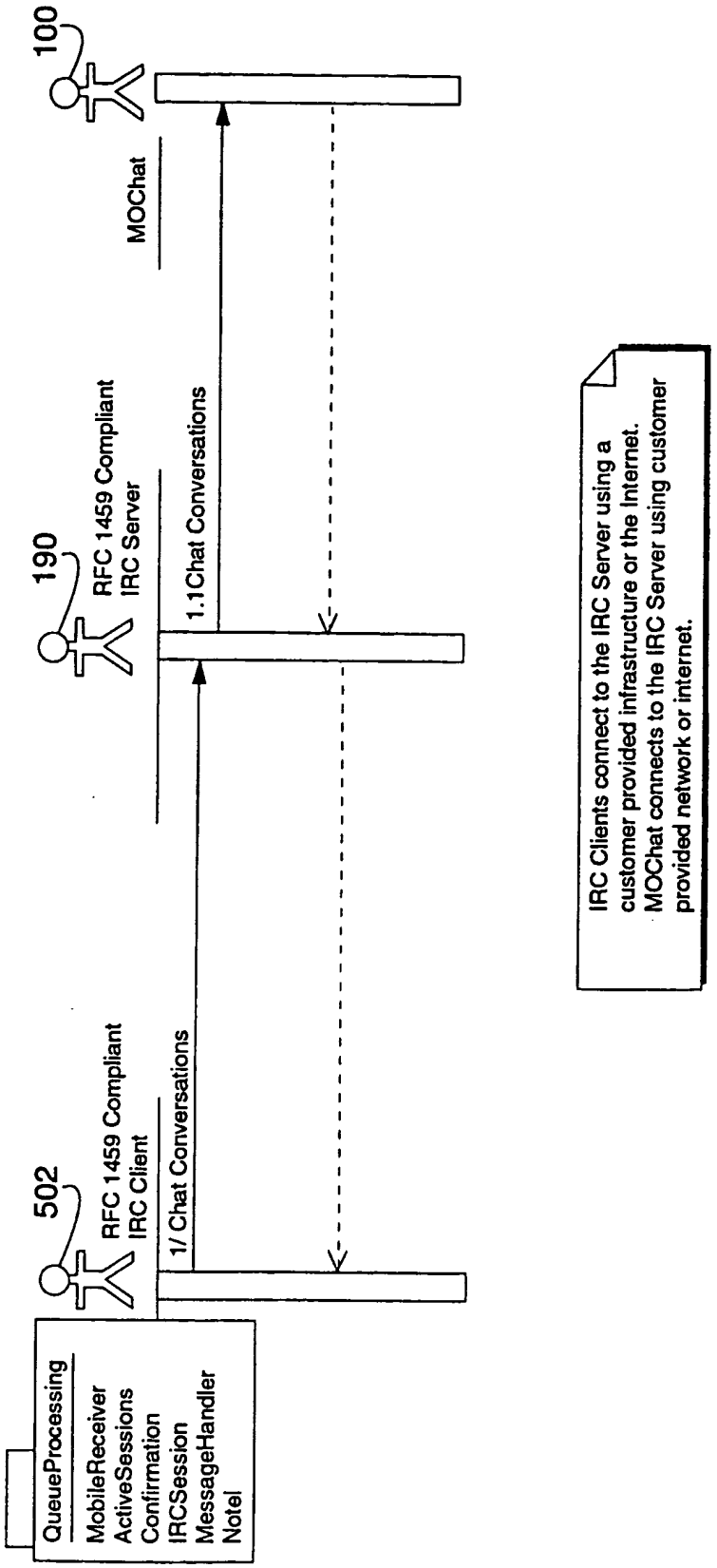

SEQUENCE OF EVENTS IN AN APPLET BASED CONVERSATION

FIG. 9

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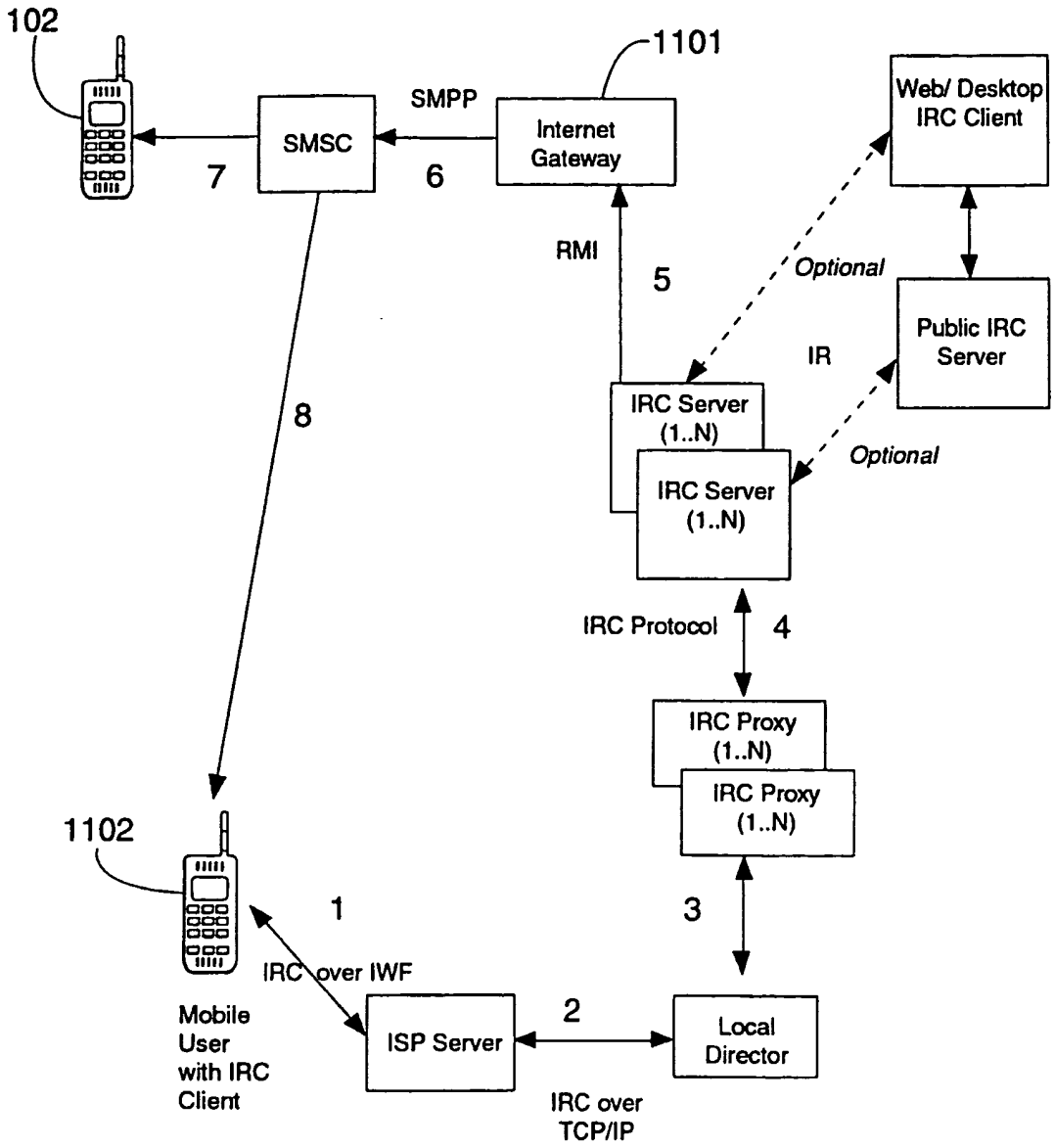

FIG. 10

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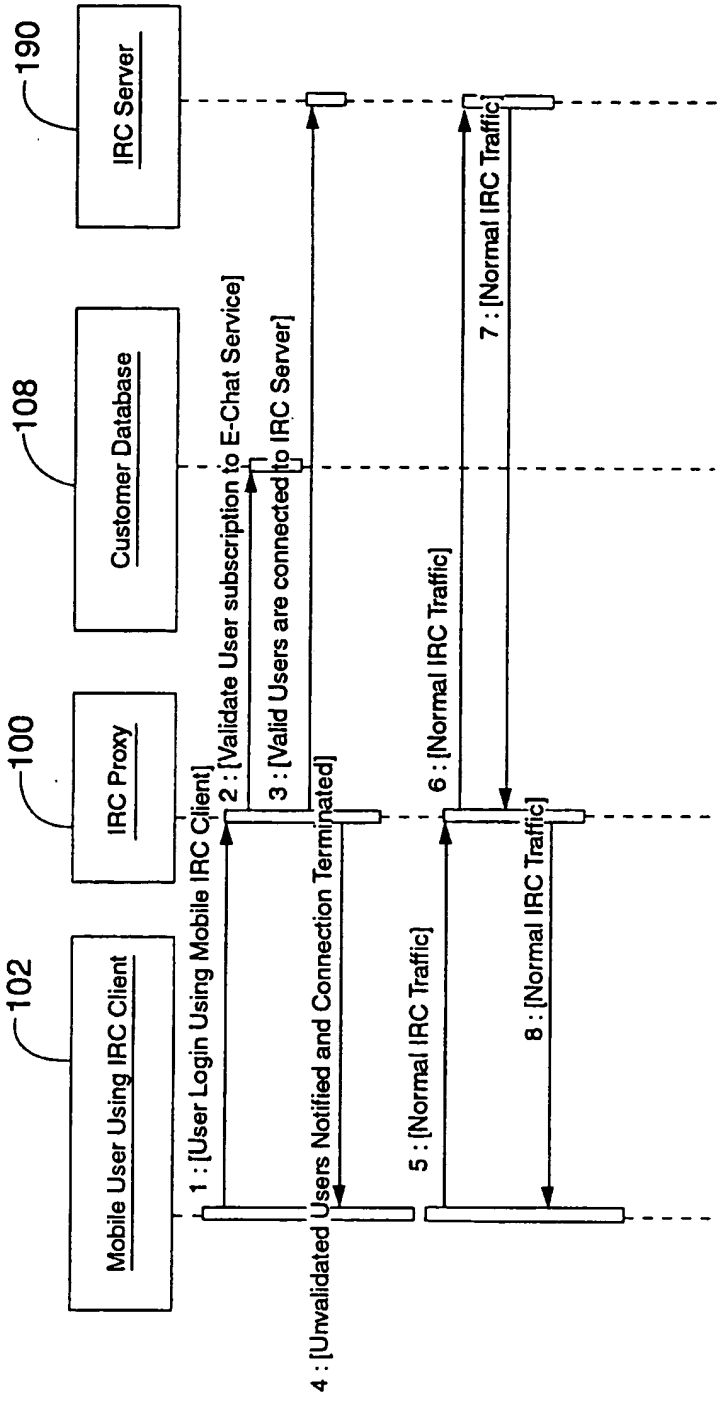

INITIAL CONNECTION TO IRC SERVER

FIG. 11

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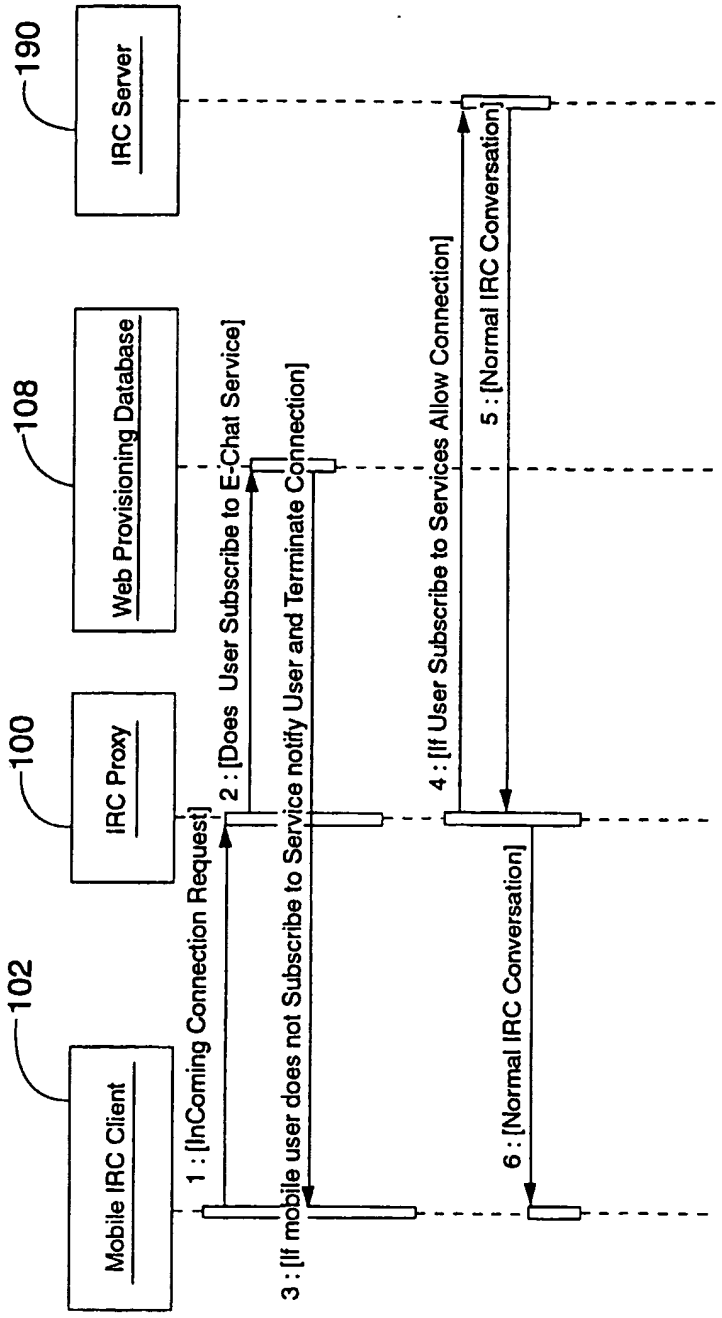

FIG. 12

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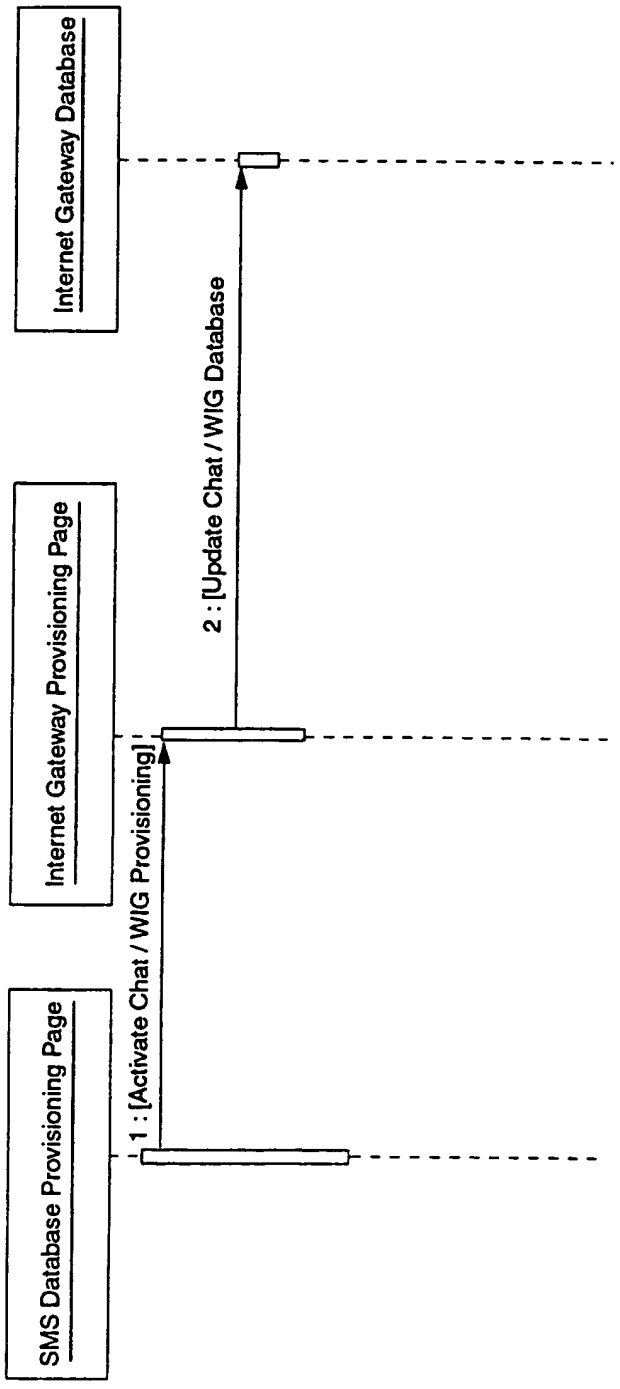

FIG. 13

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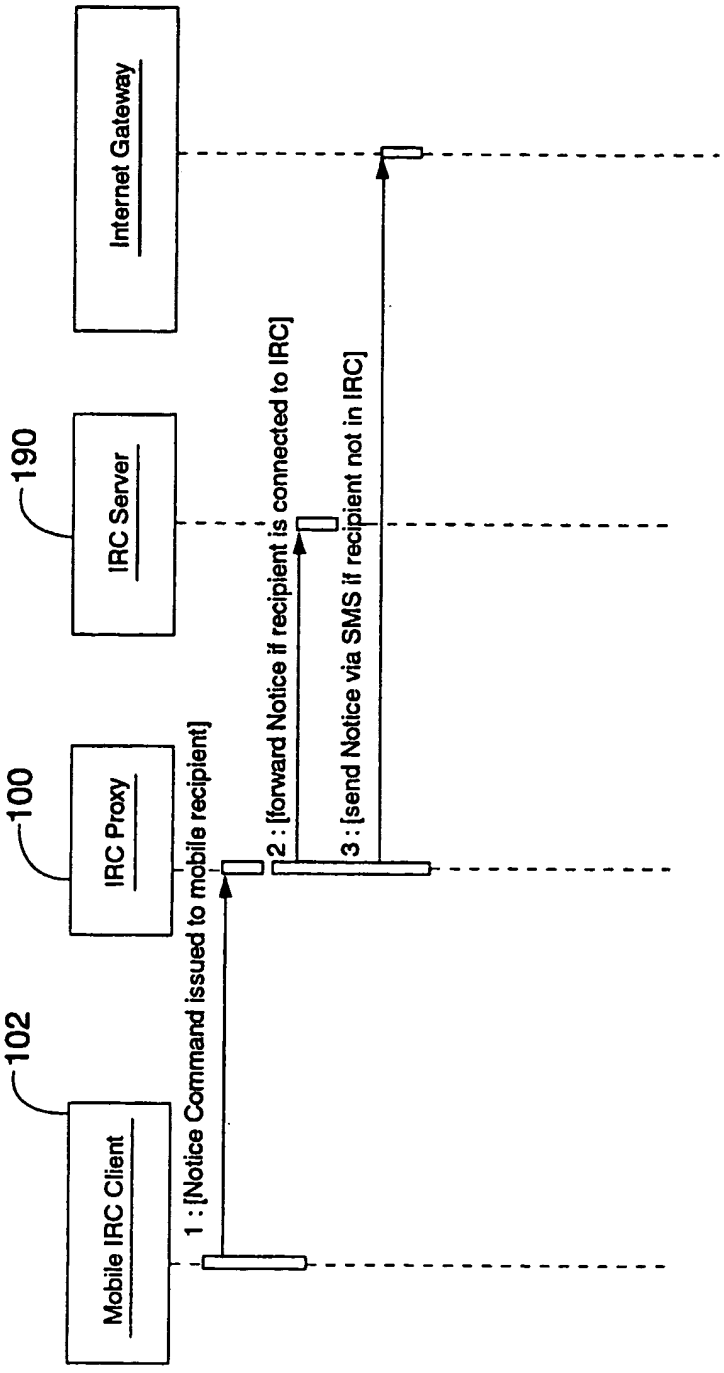

FIG. 14

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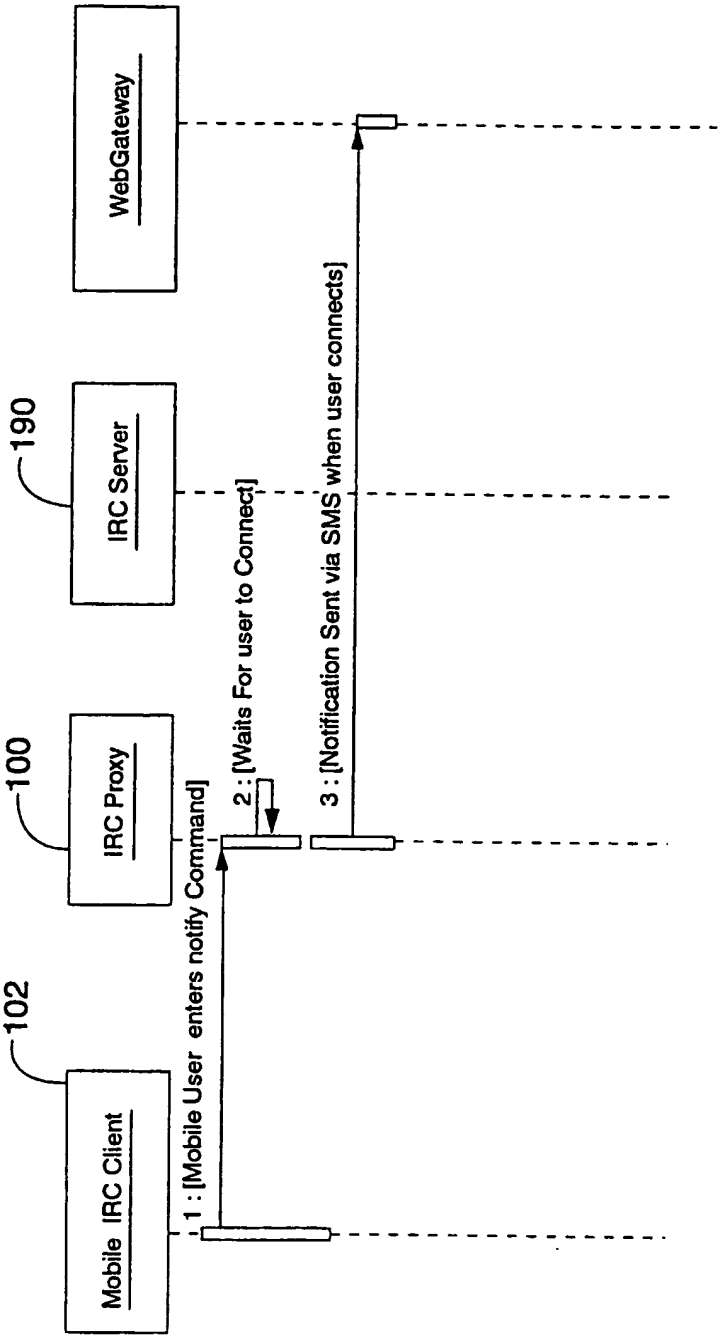

FIG. 15

Apple Inc.
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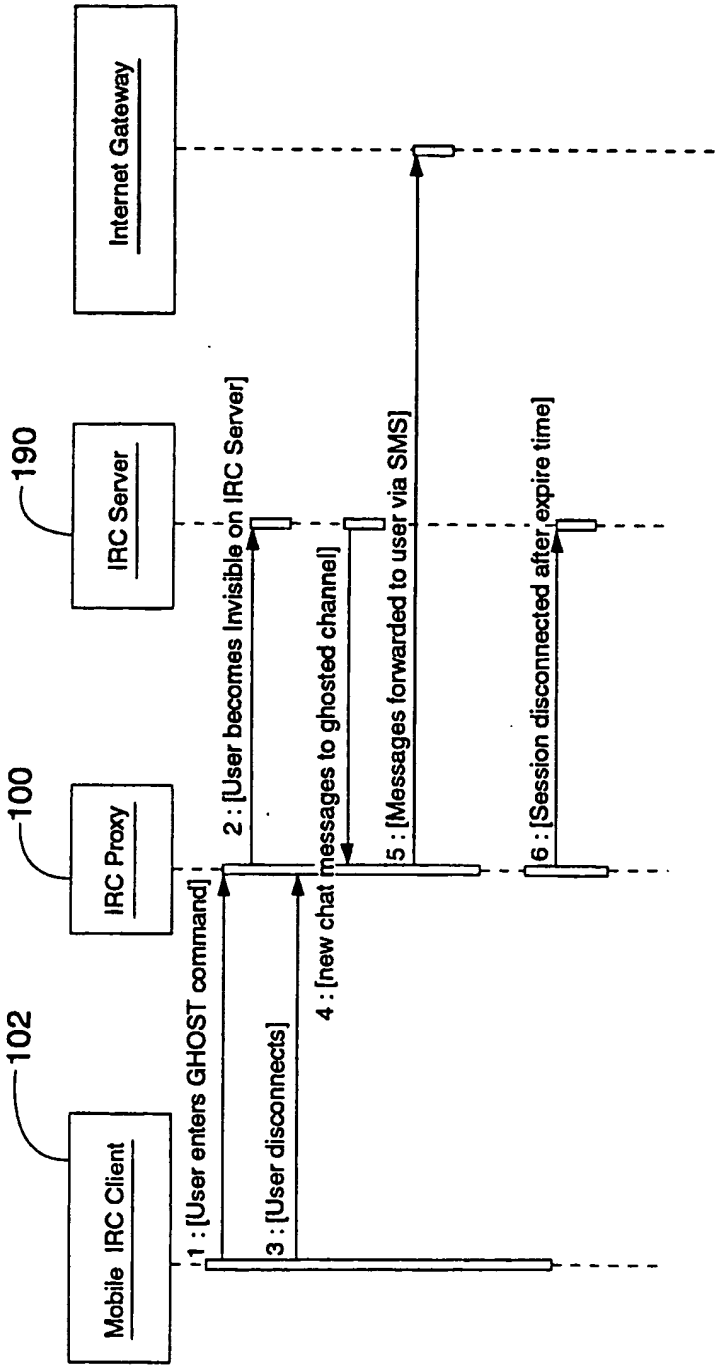

FIG. 16

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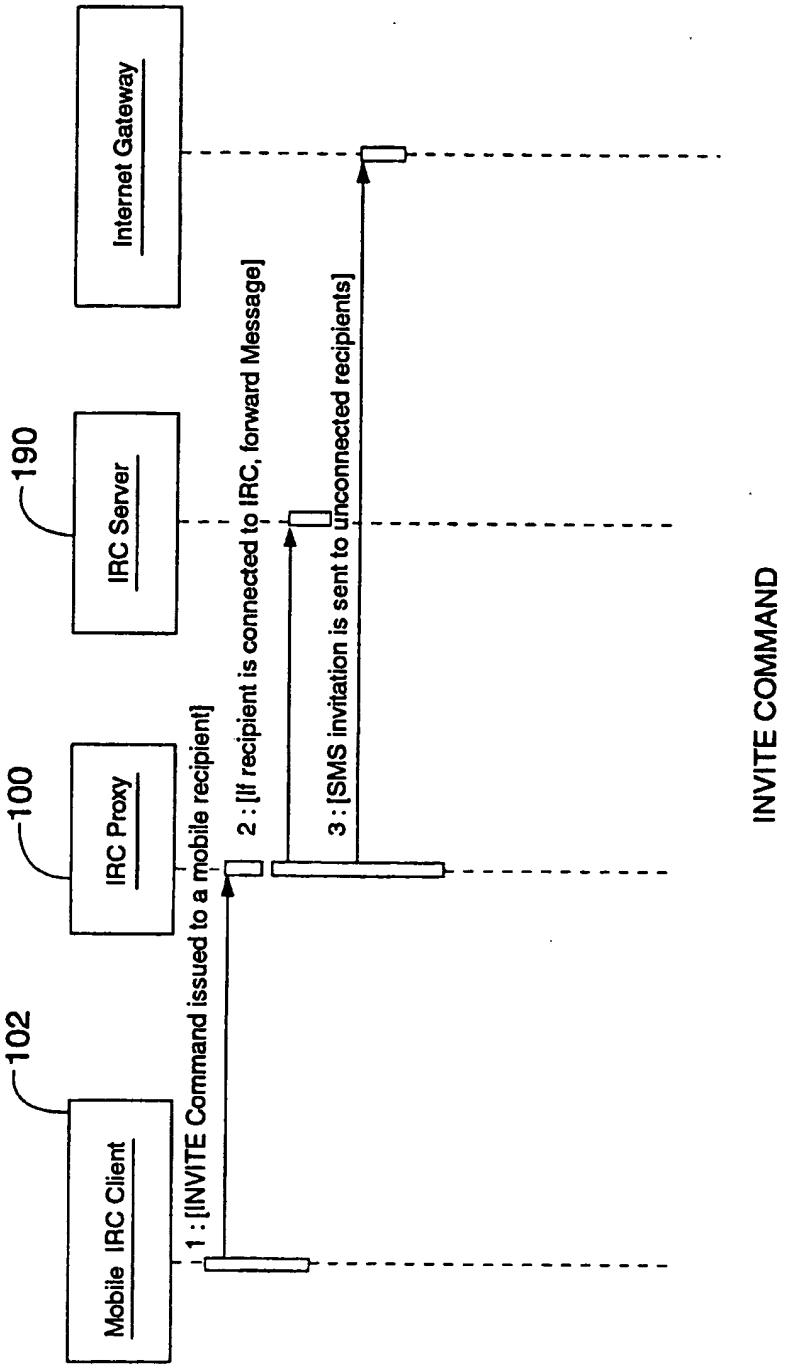

FIG. 17

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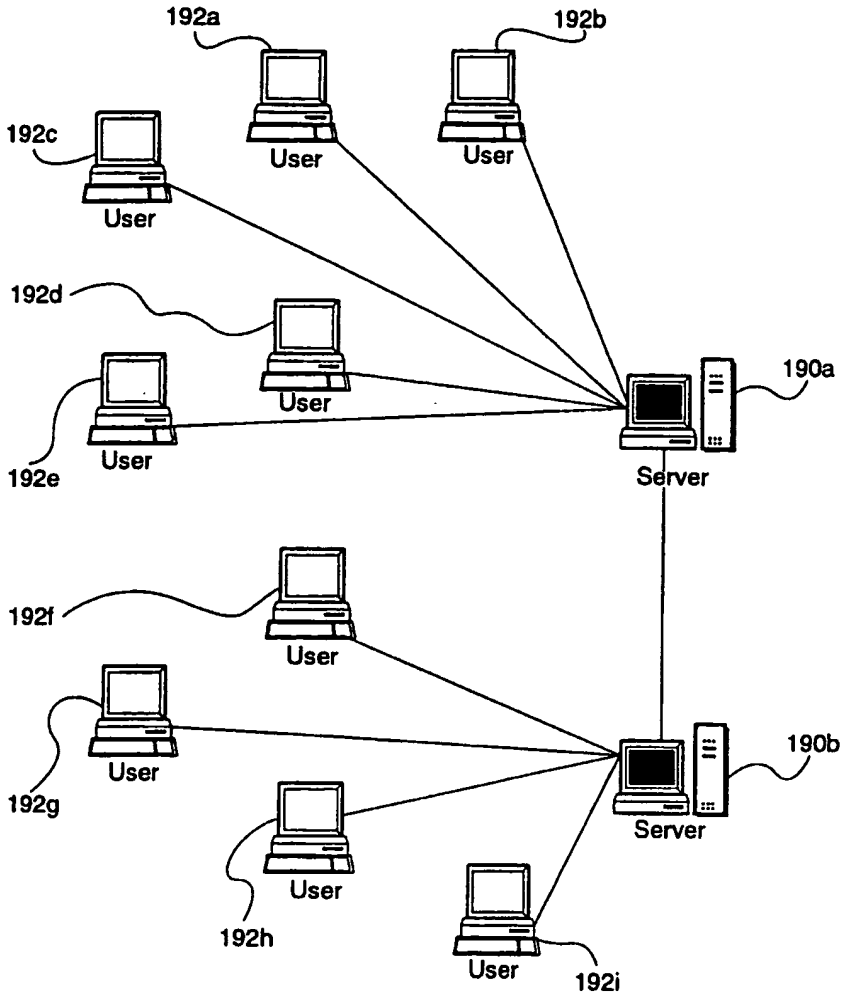

FIG. 18 Prior Art

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/08212

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 15/16
US CL :709/204, 227, 228, 229
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 709/204, 227, 228, 229

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

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

EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,960,074 A (CLARK) 28 September 1999, col. 3, lines 1-10, col. 5, lines 44-65.	1-6, 7, 9-24, 26, 28, 30-38 --- 6, 8, 25, 27, 29
Y,P	US 6,178,331 B1 A (HOLMES et al.) 23 January 2001, col. 2, lines 45-65, col. 11, lines 16-65.	6, 8, 25, 27, 29
A,P	US 6,185,602 B1 A (BAYRAKERI) 06 February 2001, col. 3-col. 11.	1-38
A,P	US 6,078,583 A (TAKAHARA et al.) 20 June 2000, col. 4-col. 10.	1-38

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 04 MAY 2001	Date of mailing of the international search report 07 JUN 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer TOD KUPSTA James R. Matthews Telephone No. 703-305-2655

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/08212

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,966,663 A (GLEASON) 12 October 1999, col. 10-col. 30.	1-38
A	US 5,949,326 A (WICKS et al.) 07 September 1999, col. 3-col. 5.	1-38
A	US 5,867,495 A (ELLIOT et al.) 02 February 1999, see all.	1-38

Form PCT/ISA/210 (continuation of second sheet) (July 1998)*

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	("20030112823").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 14:10
S2	1	("6452910").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 14:55
S3	13913	(instant messag$3) and (data or packet)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:01
S4	2262	(transmi$7 near3 (messag$3)) same tcp/ip	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:00
S5	145	S3 and S4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:00
S6	630	S3 and (initiat$3 same target)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:01
S7	4	S4 and S6	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:04
S8	61	S5 and (@ad<"20040405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:07
S9	32	S8 and mobile	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:23

EAST Search History

S10	173	address and tcp/ip and (initiat$4) and (455/466).ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:25
S11	160	S10 and ((packet or data) same mobile)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 15:26
S12	17	S11 and (messag$3 session)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:26
S13	1359	((instant messag$3) near3 session) and (data or packet)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:28
S14	119	transmi$7 near3 (invitation messag$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:29
S15	9	S13 and S14	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:31
S16	147175	transmi$7 near3 messag$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:32
S17	552	S13 and S16	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:32

EAST Search History

S18	30258	sms and telephon$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:33
S19	109	S17 and S18	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:33
S20	47	S19 and (@ad<"20040405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/09/27 16:34
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S24	1	("20040132468").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 17:26
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S28	1	("20050021645").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 17:27
S29	1	("20030126213").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 17:28
S30	1	("20030142654").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 17:28

EAST Search History

S31	1	("20040103157").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 17:29
S32	1	("6714793").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/27 17:29

Day : Friday
Date: 9/28/2007

PALM INTRANET

Time: 16:16:07

Inventor Name Search Result

Your Search was:

Last Name = LIN
First Name = DANIEL

Application#	Patent#	Status	Date Filed	Title	Inventor Name
06911776	4797925	150	09/26/1986	METHOD FOR CODING SPEECH AT LOW BIT RATES	LIN, DANIEL
07098975	4804193	150	09/21/1987	CIRCUITRY FOR ELECTRONIC SCORING DARTBOARD	LIN, DANIEL
07193987	5134711	150	05/13/1988	COMPUTER WITH INTELLIGENT MEMORY SYSTEM	LIN, DANIEL
07369292	4974099	150	06/21/1989	COMMUNICATION SIGNAL COMPRESSION SYSTEM AND METHOD	LIN, DANIEL
07592330	5235670	150	10/03/1990	MULTIPLE IMPULSE EXCITATION SPEECH ENCODER AND DECODER	LIN, DANIEL
07617789	5072308	150	11/26/1990	COMMUNICATION SIGNAL COMPRESSION SYSTEM AND METHOD	LIN, DANIEL
07890733	Not Issued	161	05/28/1992	ELLICIENT SEARCH OF VECTOR-SUM CODEBOOK IN A CELP CODER	LIN, DANIEL
07949941	Not Issued	161	09/24/1992	ALGEBRAIC CODEBOOK STRUCTURE FOR CELP CODER	LIN, DANIEL
07984396	Not Issued	166	12/02/1992	ROBUST VECTOR QUANTIZATION OF LINE SPECTRAL FREQUENCIES	LIN, DANIEL
08104174	Not Issued	166	08/09/1993	MULTIPULSE IMPULSE EXCITITATION SPEECH ENCODER AND DECODER	LIN, DANIEL
08166223	5621852	150	12/14/1993	EFFICIENT CODEBOOK STRUCTURE FOR CODE EXCITED LINEAR PREDICTION CODING	LIN, DANIEL
08446106	Not	161	05/19/1995	METHOD OF ENCODING	LIN, DANIEL

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	Issued			SPEECH USING MULTIPLE IMPULSE EXCITATION	
08495148	5651026	150	06/27/1995	ROBUST VECTOR QUANTIZATION OF LINE SPECTRAL FREQUENCIES	LIN, DANIEL
08670986	Not Issued	166	06/28/1996	MULTIPLE IMPULSE EXCITATION SPEECH ENCODER AND DECODER	LIN, DANIEL
08734356	6240382	150	10/21/1996	EFFICIENT CODEBOOK STRUCTURE FOR CODE EXCITED LINEAR PREDICTION CODING	LIN, DANIEL
08950658	6006174	150	10/15/1997	MULTIPLE IMPULSE EXCITATION SPEECH ENCODER AND DECODER	LIN, DANIEL
09441743	6223152	150	11/16/1999	MULTIPLE IMPULSE EXCITATION SPEECH ENCODER AND DECODER	LIN, DANIEL
09711252	6389388	150	11/13/2000	ENCODING A SPEECH SIGNAL USING CODE EXCITED LINEAR PREDICTION USING A PLURALITY OF CODEBOOKS	LIN, DANIEL
09739565	Not Issued	41	12/15/2000	Analytical tools for a community of investors having investment portfolios	LIN, DANIEL
09805634	6385577	150	03/14/2001	MULTIPLE IMPULSE EXCITATION SPEECH ENCODER AND DECODER	LIN, DANIEL
09966985	Not Issued	161	09/27/2001	Automatic video editing and rating system	LIN, DANIEL
10082412	6763330	150	02/25/2002	RECEIVER FOR RECEIVING A LINEAR PREDICTIVE CODED SPEECH SIGNAL	LIN, DANIEL
10083237	6611799	150	02/26/2002	DETERMINING LINEAR PREDICTIVE CODING FILTER PARAMETERS FOR ENCODING A VOICE SIGNAL	LIN, DANIEL
10446314	6782359	150	05/28/2003	DETERMINING LINEAR PREDICTIVE CODING FILTER PARAMETERS FOR ENCODING A VOICE SIGNAL	LIN, DANIEL
10852047	7085714	150	05/24/2004	RECEIVER FOR ENCODING SPEECH SIGNAL USING A WEIGHTED SYNTHESIS FILTER	LIN, DANIEL

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10924398	7013270	150	08/23/2004	DETERMINING LINEAR PREDICTIVE CODING FILTER PARAMETERS FOR ENCODING A VOICE SIGNAL	LIN, DANIEL
11363807	Not Issued	41	02/28/2006	Speech encoding device	LIN, DANIEL
11389480	Not Issued	161	03/27/2006	Receptor ligands and methods of modulating receptors	LIN, DANIEL
11490286	Not Issued	41	07/20/2006	Method and apparatus for generating encoded speech signals	LIN, DANIEL
11668558	Not Issued	19	01/30/2007	Receptor Ligands and Methods of Modulating Receptors	LIN, DANIEL
60235677	Not Issued	159	09/27/2000	Intelligent automatic movie editing system	LIN, DANIEL
60349783	Not Issued	159	01/16/2002	G-protein coupled receptor-ligand interactions	LIN, DANIEL
60393685	Not Issued	159	07/02/2002	Receptor ligands and methods of madulating receptors	LIN, DANIEL
60424093	Not Issued	159	11/05/2002	Receptor ligands and methods of modulating receptors	LIN, DANIEL
10591214	Not Issued	25	08/28/2006	Compounds, pharmaceutical compositions and methods for use in treating metabolic disorders	LIN, DANIEL C. H.
60213461	Not Issued	159	06/23/2000	Novel G-protein coupled receptors	LIN, DANIEL C. H.
60601579	Not Issued	159	08/12/2004	Compounds, pharmaceutical compositions and methods for use in treating metabolic disorders	LIN, DANIEL C. H.
11067377	Not Issued	30	02/25/2005	Compounds, pharmaceutical compositions and methods for use in treating metabolic disorders	LIN, DANIEL C.H.
60548741	Not Issued	159	02/27/2004	GPR40 modulators and methods for their use	LIN, DANIEL C.H.
09891138	Not Issued	163	06/25/2001	Novel receptors	LIN, DANIEL CHI-HONG
10340378	Not Issued	161	01/10/2003	G-protein coupled receptor-ligand interactions	LIN, DANIEL CHI-HONG
10817994	Not Issued	30	04/05/2004	Peer-to-peer mobile instant messaging method and device	LIN, DANIEL J.
10935342	Not Issued	41	09/07/2004	Peer-to-peer mobile instant messaging method and device	LIN, DANIEL J.
11042620	Not Issued	30	01/24/2005	Peer-to-peer mobile data transfer method and device	LIN, DANIEL J.

Apple Inc. EX-1004 - Page 872

11091242	Not Issued	30	03/28/2005	Mobile instant messaging conferencing method and system	LIN, DANIEL J.
11182927	Not Issued	40	07/15/2005	Method for allocating IP addresses for peer-to-peer wireless instant messaging and other data communications	LIN, DANIEL J.
11288505	Not Issued	30	11/28/2005	Method for establishing network connections between stationary terminals and remote devices through mobile devices	LIN, DANIEL J.
11674081	Not Issued	30	02/12/2007	Method and System for a Hosted Mobile Management Service Architecture	LIN, DANIEL J.
11743129	Not Issued	20	05/01/2007	Method and System for Remotely Controlling The Display of Photos in a Digital Picture Frame	LIN, DANIEL J.
11769635	Not Issued	17	06/27/2007	Method and System for Transferring Content From the Web to Mobile Devices	LIN, DANIEL J.

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EXHIBIT 1004 - PAGE 1272

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 10/10/2007
PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
10/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	Liton Miah	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 8/19/05 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :09/18/2006, 08/08/2005/, 07/08/2005, 04/04/2005, 04/05/2004.

Apple Inc.
Ex. 1004 - Page 228

DETAILED ACTION

Claim Objections

1. Claims 2, 7 and 12-21 are objected under 37 C.F.R. 1.75 because of the following informalities:

In claim 2 line 6, "listening port" seems to refer back to "a listening port" recited at line 4 of claim 1. If this is true, it is suggested to change "listening" to "the listening port".

In claim 2 line 8, "listing port" seems to refer back to "a listening port" recited at line 4 of claim 1. If this is true, it is suggested to change "listing port" to "the listening port". It is same for claim 13.

In claim 7 line 1, "the page-more messaging service" seems to refer back to "a page-mode messaging service" recited at line 7 of claim 1. If this is true, it is suggested to change "the page-more messaging service" to "the page-mode messaging service".

In claim 12 line 17, "session-based instant messaging communications" seems to refer back to "session-based instant messaging communications" recited at line 1. If this is true, it is suggested to change "session-based instant messaging communications" to "the session-based instant messaging communications".

In claim 13 line 6, "message" seems to refer back to "a message" recited at line 5. If this is true, it is suggested to change "message" to "the message". Appropriate correction is required.

Claims 14-21 are objected to since they depend from claim 12.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 1, "the address" has no antecedent basis. It is same for claim 12.

Claims 2-11 and 13-21 are rejected since they depend for claims 1 and 12.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 22-*30* are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claims *22-30*, claims the non-statutory subject matter of a *computer pr*ogram. Data structures not claimed as embodied in a computer readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31

USPQ2d at 1754 (claim to a data structure per se held nonstatutory). Therefore, since the claimed programs are not tangibly embodied in a physical medium and encoded on a computer readable medium then the Applicants has not complied with 35 U.S.C 101.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5, 7, 10, 11-12, 16, 18, 21-22, 25, 27 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Betzler (2003/0126213).

For claim 1, Betzler discloses a method of establishing session-based instant messaging communications between mobile devices that support a data packet-based communications service over a digital mobile network system, the method comprising: opening a listening port on an initiating mobile device to receive communications through the data packet-based communications service **(see paragraph 0009 lines 2-3)**; transmitting an invitation message containing the address and the listening port of the initiating mobile device to a target mobile device through a page-mode messaging service **(see paragraph 0009 lines 3-6)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see**

paragraph 0046); receiving a response from the target mobile device at the listening port on the initiating wireless device through the data packet-based communications service **(see paragraph 0009 lines 6-8)**; and establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device **(see paragraph 0009 lines 8-13)**.

For claim 5, Betzler discloses the method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening port is a TCP port **(see paragraph 0041 lines 5-6)**.

For claim 7, Betzler discloses the method of claim 1 wherein the page-more messaging service is a PIN-to-PIN messaging service **(see paragraph 0018 lines 1-6)**.

For claim 10, Betzler discloses the method of claim 1 wherein the virtual reliable connection is a TCP connection **(see paragraph 0041 lines 1-2)**.

For claim 11, Betzler discloses the method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP **(see paragraph 0029 lines 5-8)**.

For claim 12, Betzler discloses a mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising:

programming means to support a *data* packet-based communications service over the digital mobile network system **(see paragraph 0011 lines 1-7)**; programming means to support a page-mode messaging service over the digital mobile network system **(see**

paragraph 0008 lines 4-15); programming means to open a listening port to receive communication through the data packet-based communications service **(see paragraph 0009 lines 2-3)**; programming means to send an invitation message containing the address and the listening port of the mobile device to a target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see paragraph 0009 lines 3-6 and paragraph 0019)**; programming means to receive a response through the *data* packet-based communications service from the target mobile device at the listening port **(see paragraph 0009 lines 6-8)**; and programming means to establish a virtual connection through the data packet-based communications service for session-based instant messaging communications between the mobile device and the target mobile device **(see paragraph 0009 lines 8-13)**.

For claim 16, Betzler discloses the mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening port is TCP port **(see paragraph 0041 lines 5-6)**.

For claim 18, Betzler discloses the mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service **(see paragraph 0018 lines 1-6)**.

For claim 21, Betzler discloses the mobile device of claim 12 wherein the virtual connection is a TCP connection **(see paragraph 0041 lines 1-2)**.

For claim 22, Betzler discloses a computer program for establishing a session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program comprising program code means for performing all the steps of claim 1 when the program is run on a computer **(see paragraph 0009 and paragraph 0011)**.

For claim 25, Betzler discloses the computer program of claim 22 wherein the address of the initiating mobile device is an IP address and the listening port is a TCP port **(see paragraph 0041 lines 5-6)**.

For claim 27, Betzler discloses the computer program of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service **(see paragraph 0018 lines 1-6)**.

For claim 30, Betzler discloses the computer program of claim 22 wherein the virtual connection is a TCP connection **(see paragraph 0041 lines 1-2)**.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3-4, 6, 8-9, 14-15, 17, 19-20, 23-24, 26 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betzler in view of Chambers et al (2003/0142654).

For claims 3-4, 6, 8-9, 14-15, 17, 19-20, 23-24, 26 and 28-29, Betzler discloses all the subject matter of the claimed invention in paragraph 6 above with the exception of GPRS, GSM and keyboards; telephone and PIN number. Chambers et al from the same or similar fields of endeavor teaches the data packet-based communications service is GPRS and the digital mobile network system is GSM **(see paragraph 0021 lines 1-7)**; wherein the initiating mobile device and the target mobile device include QWERTY keyboards **(see paragraph 0023 lines 10-14)**; wherein the page-mode messaging service is SMS **(see paragraph 0030 lines 1-5)**; wherein the unique identification number is a telephone number **(see paragraph 0028 lines 1-4)**; wherein the unique identification number is a PIN number **(see paragraph 0027 lines 8-10)**. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to have GPRS, GSM and keyboards; telephone and PIN number as taught by Chambers et al in the communication network of Betzler. GPRS, GSM and keyboards; telephone and PIN number as taught by Chambers et al can be modified/implemented into the communication network of Betzler by implementing GPRS, GSM and keyboards of Chambers et al into the mobile device of Betzler. The motivation for using GPRS, GSM and keyboards; telephone and PIN number as taught by Chambers et al in the communication network of Betzler being that it will enables exchanging a large amount of data in a convenient, inexpensive and fast manner, it can be implemented in already existing communications system.

9. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betzler in view of Chambers et al

For claims 2 and 13, Betzler discloses all the subject matter of the claimed invention in paragraph 6 above with the exception of opening a second listening port on the initiating mobile device. Chambers et al from the same or similar fields of endeavor teaches opening a second listening port on the initiating mobile device to receive invitation messages through the page-mode messaging service **(see paragraph 0041)**; receiving, at the second listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains the address and listening port of the other mobile device **(see paragraph 0042)**; and transmitting a response to the address and listening port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection **(see paragraph 0043)**. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to have opening a second listening port on the initiating mobile device; as taught by Chambers et al in the communication network of Betzler. Opening a second listening port on the initiating mobile device as taught by Chambers et al can be modified/implemented into the communication network of Betzler by implementing of a rejoin chat session as taught by Chambers et al into the mobile device of Betzler. The motivation for using a second listening port on the initiating mobile device as taught by Chambers et al in the communication network of Betzler being that it will enables exchanging a large amount of data in a convenient, inexpensive and fast manner, it can be implemented in already existing communications system.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carey et al (2004/0171396), Rogalski et al (2004/0132468) and Caloud are cited to show a method, which is considered pertinent to the claimed invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liton Miah whose telephone number is (571)270-3124. The examiner can normally be reached on Monday through Friday 7:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571)272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Liton Miah

Rafael Perez-Gutierrez
Supervisory Patent Examiner
Technology Center 2600
Art Unit 2617
10/1/07

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet | 1 | of | 1

Complete if Known	
Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel J. Lin
Art Unit	~~2609~~ 2617
Examiner Name	~~Chau T. Nguyen~~ Liton Miah
Attorney Docket Number	LIN/0002

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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/L.M./	A1	WO 2004/073288 A	08/26/2004	White		
/L.M./	A2	EP 1 381 765 A	11/12/2003	Dehlin		
/L.M./	A3	WO 01/69406 A	09/20/2001	Smith		

Examiner Signature	/Liton Miah/	Date Considered	09/28/2007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	
Filing Date	April 5, 2004
First Named Inventor	DANIEL J LIN
Art Unit	2617
Examiner Name	Liton Miah
Attorney Docket Number	QTL-1

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/L.M./		US- 2003/0126213 A1	07-03-2003	Boas Betzler	-
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Examiner Signature	/Liton Miah/	Date Considered	09/28/2007

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	4/5/04
First Named Inventor	Daniel J. Lin
Art Unit	~~2681~~ 2617
Examiner Name	~~Unknown~~ Liton Miah
Attorney Docket Number	LIN/0002 (DJL-1)

U.S. PATENT DOCUMENTS

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/L.M./	1	US- 60/503,366	filed 9/16/03	Klassen	-	-	
/L.M./	2	US- 60/503,367	filed 9/16/03	Lazaridis	-	-	
/L.M./	3	US- 2005/0021645 A1	01-27-2005	Kulkarni et al.	-	-	
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/L.M./	1	WO 01/41477 A1	06-07-2001	Lee		

Examiner Signature	/Liton Miah/	Date Considered	09/28/2007

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	Peer-to-Peer Mobile Instant Messaging Method and Device

Application Number : 10/817994

Confirmation Number: 6700

First Named Applicant: Daniel Lin

Attorney Docket Number: LIN/0002

Art Unit: ~~2665~~ 2617

Examiner: Liton Miah

Search string: (4582956).pn

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
/L.M./	1	4582956	1986-04-15	Carolyn A. Doughty		-	-

Signature

Examiner Name	Date
/Liton Miah/	09/28/2007

OIPE JC22
AUG 0 8 2005
PATENT & TRADEMARK OFFICE

PTO/SB/08a (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	4/5/04
First Named Inventor	Daniel J. Lin
Art Unit	~~2684~~ 2617
Examiner Name	~~Chau T. Nguyen~~ Liton Miah
Attorney Docket Number	LIN/0002 (DJL-1)

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Cl Sub
/L.M./	1	US- 2002/0155826 A1	10-24-2002	Robinson et al.		
/L.M./	2	US- 2002/0165000 A1	11-07-2002	Fok		
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/L.M./	1	EP 1 331 786 A1	07-30-2003	Chambers et al.		
/L.M./	2	WO 03/087972 A2	10-23-2003	Costa Requena et al.		

Examiner Signature	/Liton Miah/	Date Considered	09/28/2007

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Notice of References Cited	Application/Control No. 10/817,994	Applicant(s)/Patent Under Reexamination LIN, DANIEL J.	
	Examiner Liton Miah	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0132468 A1	07-2004	Rogalski et al.	455/466
*	B	US-2004/0171396 A1	09-2004	Carey et al.	455/466
*	C	US-6,885,871 B2	04-2005	Caloud, Philippe	455/466
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	Art Unit
	Miah, Liton	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/28/2007								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
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	29	✓								
	30	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	**Art Unit**
	Miah, Liton	2617

SEARCHED

Class	Subclass	Date	Examiner
455	466	9/27/2007	Liton Miah
370	313	9/27/2007	Liton Miah
370	395.3	9/27/2007	Liton Miah

SEARCH NOTES

Search Notes	Date	Examiner
EAST (US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB)	9/27/2007	Liton Miah
Consulted with Spe Rafael Perez-Gutierrez	9/27/2007	Liton Miah
Inventorship Search	9/28/2007	Liton Miah

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

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Bib Data Sheet

CONFIRMATION NO. 6700

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/817,994	04/05/2004 RULE	370	2617	OJL-1

APPLICANTS

Daniel J. Lin, San Francisco, CA;

** CONTINUING DATA ********** None

** FOREIGN APPLICATIONS ********** None 9/28/07 lw 10/1/07

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
** 06/19/2004

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☑ no	CA	2	30	3
35 USC 119 (a-d) conditions met	☐ yes ☐ no ☐ Met after Allowance				
Verified and Acknowledged	Examiner's Signature Initials				

ADDRESS
26290

TITLE

Peer-to-peer mobile instant messaging method and device

FILING FEE RECEIVED		
475	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2617
Serial No.: 10/817,994	§	
	§	Examiner: Liton Miah
Filed: April 5, 2004	§	
	§	
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO OFFICE ACTION DATED OCTOBER 10, 2007

In response to the Office Action dated October 10, 2007, having a shortened statutory period for response set to expire on January 10, 2008, please enter this response and reconsider the claims pending in the application for reasons discussed below.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 6 of this paper.

IN THE CLAIMS:

The following listing of the claims replaces all prior versions of the claims in the application.

1. (Currently Amended): A method of establishing session-based instant messaging communications between mobile devices that support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening port on an initiating mobile device to receive communications through the data packet-based communications service;

transmitting, from the initiating mobile device, an invitation message containing ~~the~~ an address and the listening port of the initiating mobile device to a target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving, at the initiating mobile device, a response from the target mobile device at the listening port on the initiating wireless device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device.

2. (Currently Amended): The method of claim 1 further comprising:

opening a second listening port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains ~~the~~ a second address and a third listening port of the other mobile device; and

transmitting a response to the second address and ~~listing~~ the third listening port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

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3. (Original): The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. (Original): The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

5. (Original): The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening port is a TCP port.

6. (Original): The method of claim 1 wherein the page-mode messaging service is SMS.

7. (Currently Amended) The method of claim 1 wherein the ~~page-more~~ page-mode messaging service is a PIN-to-PIN messaging service.

8. (Original): The method of claim 1 wherein the unique identification number is a telephone number.

9. (Original): The method of claim 1 wherein the unique identification number is a PIN number.

10. (Original): The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. (Original): The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

12. (Currently Amended) A mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising:

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programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening port to receive communication through the data packet-based communications service;

programming means to send an invitation message containing ~~the~~ an address and the listening port of the mobile device to a target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening port; and

programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device.

13. (Currently Amended) The mobile device of claim 12 further comprising:

programming means to open a second listening port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein ~~such~~ the message contains ~~the~~ a second address and a third listening port of the other mobile device; and

programming means to transmit a response to the second address and ~~listing~~ the third listening port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

14. (Original): The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

15. (Original): The mobile device of claim 12 further comprising a QWERTY keyboard.

16. (Original): The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening port is TCP port.

17. (Original): The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. (Original): The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. (Original): The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. (Original): The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. (Original): The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. (Currently Amended): A computer readable storage medium having stored therein a computer program for establishing a session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program ~~comprising program code means for performing~~ to be executed on a mobile device to carry out all the steps of claim 1 ~~when the program is run on a computer~~.

23. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22

wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

25. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the address of the initiating mobile device is an IP address and the listening port is a TCP port.

26. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the page-mode messaging service is SMS.

27. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the unique identification number is a telephone number.

29. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the unique identification number is a PIN number.

30. (Currently Amended): The computer ~~program~~ readable storage medium of claim 22 wherein the virtual connection is a TCP connection.

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REMARKS

Claims 1-30 were pending in the application.

In the Office Action, claims 1-30 were rejected. More specifically,

- Claims 2, 7 and 12-12 were objected to under 37 C.F.R. 1.75 due to certain informalities.
- Claims 1-21 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention;
- Claims 22-30 were rejected under 35 U.S.C. §101 because it was considered by the Examiner as a computer program per se which is not considered to fall under statutory classes established by 35 U.S.C. §101.
- Claims 1, 5, 7, 10, 11-12, 16, 18, 21-22, 25, 27 and 30 were rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent Application Publication No. 2003/0126213 (Betzler).
- Claims 3-4, 6, 8-9, 14-15, 17, 19-20, 23-24, 28-29 were rejected under 35 U.S.C. §103 as being obvious over Betzler in view of U.S. Patent Application Publication No. 2003/0142654 (Chambers).

Examiner objected to claims 2, 7, and 12-21 due to certain informalities in claims 2, 7, and 12. Applicant has amended claims 2, 7, 12 and 13 in accordance with Examiner's suggestions to address the objection.

Examiner rejected claims 1-21 under 35 U.S.C. §112 because "the address" has no antecedent basis in claims 1 and 12. Claims 1 and 12 have been amended to address this rejection.

Examiner rejected claims 22-30 under 35 U.S.C. §101. Claims 22-30 have been amended to recite subject matter that is statutory under 35 U.S.C. §101. In particular, claims 22-30 now recite a computer readable storage medium having stored therein a computer program to be executed on a mobile device.

Examiner rejected claims 1, 5, 7, 10, 11-12, 16, 18, 21-22, 27 and 30 under 35 U.S.C. §102 as being anticipated by Betzler. With respect to independent claims 1, 12 and 22, Examiner relies on Paragraph 0009 of Betzler, which states:

> "[0009] In another aspect, an instant messaging method is provided which includes: **establishing connection** of a first wireless client to an **instant messaging server**; sending a request from the first wireless client to the **instant messaging server** for identification of available wireless clients for instant messaging; receiving available wireless client information at the first wireless client from the **instant messaging server**; and establishing direct wireless connection between the first wireless client and a second wireless client **using the available wireless client information received from the instant messaging server**, wherein the direct wireless connection allows direct wireless communication between the first wireless client and the second wireless client." (emphasis added).

Notably, as taught in Paragraph 0009, Betzler teaches a system that allows a first wireless client to establish a direct wireless connection with a second wireless client **only by first establishing a connection** between the first wireless client and **an instant messaging server** so that the first wireless client can obtain and use available **wireless client information received from the instant messaging server** in order to establish the direct connection with the second wireless client.

In contrast, the claimed invention requires an exchange of communication between an initiating mobile device and a target mobile device, and does not involve an instant messaging server, before a connection between the initiating mobile device and the target mobile device is established. In particular, claim 1 recites transmitting an invitation message from the initiating mobile device to the target mobile device, **not to an instant messaging server**, and receiving a response to the invitation message received from the target mobile device at the listening port of the initiating mobile device. Claim 12 is directed to a mobile device that has programming means to send an invitation message to a target mobile device, **not to an instant messaging server**, and programming means to receive a response from the target mobile device. Claim 22

recites a computer readable storage medium having stored there in a computer program to be executed on the initiating mobile device to carry out the steps of transmitting an invitation message to the target mobile device, **not to an instant messaging server**, and receiving a response to the invitation message received from the target mobile device at the listening port of the initiating mobile device.

Therefore, claims 1, 12 and 22 are allowable over Betzler. The remaining claims are also allowable over Betzler as they depend from one of claims 1, 12 and 22.

In view of the foregoing, this application is now believed to be in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to call Applicant's representative at the number listed below.

Respectfully submitted,

Frederick Kim, Reg. No. 38,513
Patterson & Sheridan, L.L.P.
3040 Post Oak Blvd., Suite 1500
Houston, TX 77056-6582
Telephone: 650.330.2310
Facsimile: 650.330.2314
Attorney for Applicant

Apple Inc.
Ex. 1004 - Page 256

Electronic Acknowledgement Receipt

EFS ID:	2701411
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Jose Cardenas
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	10-JAN-2008
Filing Date:	05-APR-2004
Time Stamp:	19:12:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment - After Non-Final Rejection	LIN_0002_EROA.pdf	331286 3a71cfe6d196eea2cd0f41ad87229c10c7cbbc8a	no	9

Warnings:	
Information:	

Total Files Size (in bytes):	331286

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/817,994	04/05/2004	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 01/10/2008	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0	X $25 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $105 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/STELLA LITTLE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 03/21/2008
PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
03/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt of Applicant's Amendment, filed on 01/10/2008 is acknowledged. Claims 1, 2, 7, 12, 13 and 22-30 have been amended.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-9, 11-15, 17-20, 22-24 and 26-29, are rejected under 35 U.S.C. 102(b) as being anticipated by Chambers et al (US 2003/0142654).

For claim 1, Chambers et al discloses a method of establishing session-based instant messaging between mobile devices that support a data packet-based communications service over a digital mobile network system **(see paragraph 0009)**, the method comprising:

opening a listening port on an initiating mobile device to receive communications through the data packet-based communications service **(see paragraph 0010 and 0027)**; transmitting, from the initiating mobile device, an invitation message containing an address and the listening port of the initiating mobile device to a target mobile device through a page-mode messaging service **(see paragraph 0011 and 0030 and figure 2 line 48)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile

network system to locate the target mobile device **(see paragraph 0034 and 0036)**; receiving, at the initiating mobile device, a response from the target mobile device at the listening port on the initiating wireless device through the data packet-based communications service (**see paragraph 0012, 0032 and 0035 and figure 2 line 58)**; and establishing a virtual connection through the data packet-based communications service for the direct data transfer session between the initiating mobile device and the target mobile device **(see paragraph 0034 and 0035)**.

For claim 2 and 13, Chambers et al discloses opening a second listening port on the initiating mobile device to receive invitation messages through the page-mode messaging service **(see paragraph 0011 and 0041)**; receiving, at the second listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening port of the other mobile device **(see paragraph 0042)**; and transmitting a response to the second address and the third listening port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection **(see paragraph 0035 and 0043).**

For claims 3, 14 and 23, Chambers et al discloses the data packet-based communications service is GPRS **(See paragraph 0021, 0023 and 0035)** and the digital mobile network system is GSM **(See paragraph 0021 and 0023)**.

For claim 4, 15 and 24, Chambers et al discloses the initiating mobile device and the target mobile device include QWERTY keyboards **(See paragraph 0023 and 0033)**.

For claim 6, 17 and 26, Chambers et al discloses the page-mode messaging service is SMS **(see paragraph 0030 lines 1-5)**.

For claim 7, 18 and 27, Chambers et al discloses the method of claim 1 wherein the page-more messaging service is a PIN-to-PIN messaging service **(see paragraph 0010 and 0027)**.

For claim 8, 19 and 28, Chambers et al discloses the unique identification number is a telephone number **(see paragraph 0028 lines 1-4)**.

For claim 9, 20 and 29, Chambers et al discloses the unique identification number is a PIN number **(see paragraph 0027 lines 8-10)**.

For claim 11, Chambers et al discloses instant messaging communications through the virtual connection utilizes MSRP **(see paragraph 0013).**

For claim 12, Chambers et al discloses a mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising: programming means to support a data packet-based communications service over the digital mobile network system **(see paragraph 0020 and 0021)**; programming means to support a page-mode messaging service over the digital mobile network system **(see paragraph 0010 and 0015)**; programming means to open a listening port to receive communication through the data packet-based communications service **(see paragraph 0010 and 0027)**; programming

means to send an invitation message containing an address and the listening port of the mobile device to a target mobile device through the page-mode messaging service **(see paragraph 0011, 0030 and figure 2 line 48)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see paragraph 0012, 0035 and 36)**; programming means to receive a response through the data packet-based communications service from the target mobile device at the listening port **(see paragraph 0010, 0035 and figure 2 line 56)**; and programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device **(see paragraph 0034 and 0035)**.

For claim 22, Chambers et al discloses a computer readable storage medium having stored therein a computer program for establishing session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on a mobile device to carry out all the steps of claim 1 **(see paragraph 0009, 0010, 0011 and 0023)**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 5, 10, 16, 21, 25 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al in view of Betzler (US 2003/0126213).

For claims 5, 16 and 25, Chambers et al discloses the address of the initiating mobile device is an IP address **(see paragraph 0029 lines 1-5).**

For claims 5, 10, 16, 21, 25 and 30, Chambers disclose all the subject matter of the claimed invention with the exception of TCP. Betzler from the same or similar fields of endeavor teaches, for claims 5, 16 and 25, the listening port is a TCP port **(see paragraph 0041 lines 5-6);** for claim 10, 21, and 30, the virtual reliable connection is a TCP connection **(see paragraph 0041 lines 1-2)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have TCP port and TCP connection as taught by Betzler in the communications network of Chambers et al. The TCP as taught by Betzler can be modified/implemented into the communication network of Chambers et al. The motivation for using TCP is to improve similar devices in the same way.

Response to Arguments

6. Applicant's arguments filed on 01/10/2008 are moot in view of new grounds of Rejection.

See above rejections for response to arguments.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liton Miah whose telephone number is (571)270-3124. The examiner can normally be reached on Monday through Friday 7:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571)272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LM

/Rafael Pérez-Gutiérrez/

Supervisory Patent Examiner, Art Unit 2617

Notice of References Cited	Application/Control No. 10/817,994	Applicant(s)/Patent Under Reexamination LIN, DANIEL J.	
	Examiner LITON MIAH	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0142654 A1	07-2003	Chambers et al.	370/338
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	Art Unit
	Miah, Liton	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/28/2007	03/15/2008							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
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	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
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	25	✓	✓							
	26	✓	✓							
	27	✓	✓							
	28	✓	✓							
	29	✓	✓							
	30	✓	✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	**Art Unit**
	Miah, Liton	2617

SEARCHED

Class	Subclass	Date	Examiner
455	466	9/27/2007	Liton Miah
370	313	9/27/2007	Liton Miah
370	395.3	9/27/2007	Liton Miah
Search	Updated	3/15/2008	Liton Miah

SEARCH NOTES

Search Notes	Date	Examiner
EAST (US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB)	9/27/2007	Liton Miah
Consulted with Spe Rafael Perez-Gutierrez	9/27/2007	Liton Miah
Inventorship Search	9/28/2007	Liton Miah
Search Updated	3/15/2008	Liton Miah

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2617
Serial No.: 10/817,994	§	
	§	Examiner: Liton Miah
Filed: April 5, 2004	§	
	§	
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO OFFICE ACTION DATED MARCH 21, 2008

In response to the Office Action dated March 21, 2008, having an extended statutory period for response set to expire on September 21, 2008, please enter this response and reconsider the claims pending in the application for reasons discussed below. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782/LIN/0002/FDK for any fees, including extension of time fees or excess claim fees, required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

IN THE CLAIMS:

The following listing of the claims replaces all prior versions of the claims in the application.

1. (Currently Amended): A method of establishing session-based instant messaging communications between mobile devices that support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening software port on an initiating mobile device to receive communications through the data packet-based communications service;

transmitting, from the initiating mobile device, an invitation message containing an address and the listening software port of the initiating mobile device to a target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating wireless device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device.

2. (Currently Amended): The method of claim 1 further comprising:

opening a second listening software port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second software listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening software port of the other mobile device; and

transmitting a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

3. (Original): The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. (Original): The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

5. (Currently Amended): The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

6. (Original): The method of claim 1 wherein the page-mode messaging service is SMS.

7. (Previously Presented): The method of claim 1 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

8. (Original): The method of claim 1 wherein the unique identification number is a telephone number.

9. (Original): The method of claim 1 wherein the unique identification number is a PIN number.

10. (Original): The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. (Original): The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

12. (Currently Amended): A mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising:

programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening software port to receive communication through the data packet-based communications service;

programming means to send an invitation message containing an address and the listening software port of the mobile device to a target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening software port; and

programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device.

13. (Currently Amended): The mobile device of claim 12 further comprising:

programming means to open a second listening software port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening software port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein the message contains a second address and a third listening software port of the other mobile device; and

programming means to transmit a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

14. (Original): The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

Apple Inc.
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15. (Original): The mobile device of claim 12 further comprising a QWERTY keyboard.

16. (Currently Amended): The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening software port is TCP port.

17. (Original): The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. (Original): The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. (Original): The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. (Original): The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. (Original): The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. (Previously Presented): A computer readable storage medium having stored therein a computer program for establishing a session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on a mobile device to carry out all the steps of claim 1.

23. (Previously Presented): The computer readable storage medium of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. (Previously Presented): The computer readable storage medium of claim 22 wherein the initiating mobile device and the target mobile device include QWERTY

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keyboards.

25. (Currently Amended): The computer readable storage medium of claim 22 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

26. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is SMS.

27. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a telephone number.

29. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a PIN number.

30. (Previously Presented): The computer readable storage medium of claim 22 wherein the virtual connection is a TCP connection.

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REMARKS

Claims 1-30 are pending in the application.

In the Office Action, claims 1-30 were rejected. More specifically,

- Claims 1-4, 6-9, 11-15, 17-20, 22-24 and 26-29 were rejected under 35 U.S.C. §102 as anticipated by U.S. Patent Application Publication No. 2003/0142654 (Chambers).

- Claims 5, 10, 16, 21, 25 and 30 were rejected under 35 U.S.C. §102 as being obvious over Chambers in view of U.S. Patent Application Publication No. 2003/0126213 (Betzler).

With respect to independent claims 1, 12 and 22, Examiner cites Paragraph [0011] and [0030] and Figure 2 (step 48) as anticipating the following step (or similar steps) in claims 1, 12 and 22:

> "transmitting an invitation message containing an address and the listening port of the initiating mobile device to a target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device"

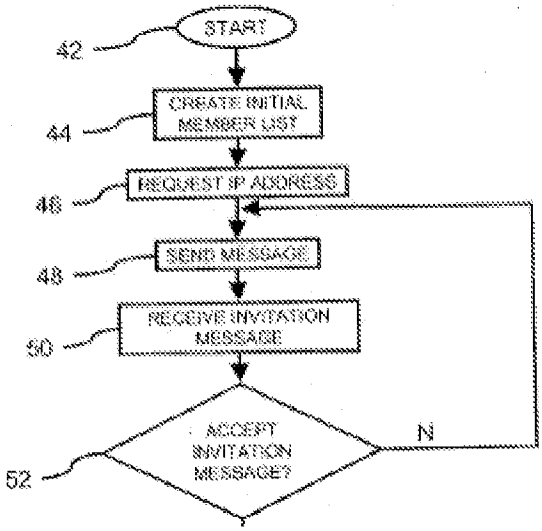
In comparison, Paragraph [0011], [0030] and Figure 2 (step 48) of Chambers are replicated below:

> [0011] "In another aspect, the present invention provides a method for transmitting a circuit switched message from a first terminal assigned to a first user of a communications system to second and third terminals having second and third users. This method includes providing via the first terminal an input by the first user for the circuit switched message and defining a group of users. The

method further includes selecting a subscriber number for the second and third terminals and transmitting the message to the second and third terminals."

[0030] "After requesting the IP address, an initiation or invitation message is sent to members of the initial member list in a step 48. The invitation message may preferably be a SMS-message that is automatically sent by the initiator terminal to each member of the initial member list. The initiator terminal's IP address, a telephone number, a chat session name, a greeting and a nickname of the initiator may be included in the invitation message. Preferably, the initiator terminal's address is requested before sending the invitation message." (emphasis added).

Figure 2. A portion of Figure 2 including step 48 is replicated below:



Applicant respectfully disagrees with Examiner that the cited portions of Chambers or any other portion of Chambers teaches including a listening port in the invitation message. Paragraph [0030] of Chambers clearly articulates and teaches that an IP address, a telephone number, a chat session name, a greeting and a nickname are included in an invitation, but makes no mention of including a listening port in the invitation message; indeed, Chambers makes no mention of any ports in the entirety of its specification.

Additionally, claims 1, 12 and 22 have been amended to clarify that the "listening port" in the claims is a "listening **software** port." One example of a listening software port, as claimed by Applicant in claim 5, is a TCP port. Such a TCP port, for example, is represented by a 16 bit unsigned integer, ranging from 0 to 65535. As previously discussed, Chambers makes no mention of including a listening software port in the invitation message nor mention of any ports in the entirety of its specification.

Because independent claims 1, 12 and 22, as currently amended, each include the similar limitation of a listening **software** port, Applicant believes claims 1, 12 and 22 are allowable over Chambers. Because all remaining claims depend from one of claims 1, 12 and 22, Applicant believes that they are also allowable over Chambers.

In view of the foregoing, this application is now believed to be in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to call Applicant's representative at the number listed below.

/Frederick D. Kim/
Frederick Kim, Reg. No. 38,513
Patterson & Sheridan, L.L.P.
3040 Post Oak Blvd., Suite 1500
Houston, TX 77056-6582
Telephone: 650.330.2310
Facsimile: 650.330.2314
Attorney for Applicant

Apple Inc.
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Electronic Acknowledgement Receipt

EFS ID:	3985219
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kimberly Keeler
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	22-SEP-2008
Filing Date:	05-APR-2004
Time Stamp:	20:23:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	LIN_0002_EROA.pdf	106175 46226573d727602d0a63288005a62e45af537994	no	9

Warnings:	
Information:	

Total Files Size (in bytes):	106175

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Patent Application Fee Transmittal

Application Number:	10817994
Filing Date:	05-Apr-2004
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Filer:	Frederick D. Kim./Kimberly Keeler
Attorney Docket Number:	OJL-1

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	525	525

Apple Inc.
Ex. 1004 - Page 283

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**525**

Electronic Acknowledgement Receipt

EFS ID:	3985314
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kimberly Keeler
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	22-SEP-2008
Filing Date:	05-APR-2004
Time Stamp:	20:40:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$525
RAM confirmation Number	10889
Deposit Account	200782
Authorized User	KIM,FREDERICK D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (PTO-06)	fee-info.pdf	29875 84a9324ed76506e49c0581c2b08122a34c8f97c7	no	2

Warnings:

Information:

Total Files Size (in bytes):	29875

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New Applications Under 35 U.S.C. 111

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:		§	
	Daniel LIN	§	Confirmation No.: 6700
		§	
Serial No.:	10/817,994	§	Group Art Unit: 2617
		§	
Filed:	April 5, 2004	§	Examiner: Miah, Liton
		§	
For:	PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

The Applicants, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications, or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR §1.56.

While the information submitted in this Supplemental Information Disclosure Statement may be material pursuant to 37 CFR §1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR §1.97, this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR §1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-SB08a. Copies of the U.S. references are not being submitted.

The fee of $180.00 is due under 37 CFR §1.17(p) and is being paid by credit card. The Commissioner is hereby authorized to charge any other fee necessary to make this submission timely to the Deposit Account No. 20-0782/LIN/0002/DL.

Respectfully submitted,

Daniel Lin
Registration No. 47,750
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicant(s)

PTO/SB/08A (07-06)
Approved for use through 09/30/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel Lin
Art Unit	2617
Examiner Name	Miah, Liton
Attorney Docket Number	LIN/0002

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US 6,990,352	PYHALAMMI et al.	01-24-2006	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	10817994
Filing Date:	05-Apr-2004
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Filer:	Frederick D. Kim./Kristen Neil
Attorney Docket Number:	OJL-1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	4447563
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kristen Neil
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	12-DEC-2008
Filing Date:	05-APR-2004
Time Stamp:	15:50:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	1120
Deposit Account	200782
Authorized User	KIM,FREDERICK D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		LIN_0002_SIDS.pdf	97162 8fd3dae3b81aa78ab1d02ebc4a145ca10d247c56	yes	3

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Information Disclosure Statement Letter	1	2
Information Disclosure Statement (IDS) Filed (SB/08)	3	3

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	29956 a00b5682f23427638ba6f11ca39fbfe38a912ce1	no	2

Warnings:

Information:

Total Files Size (in bytes):	127118

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New Applications Under 35 U.S.C. 111

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 12/23/2008
PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
12/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/12/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Action is in response to Applicant's amendment filed on September 22, 2008. Claims 1-30 are still pending in the present application. **This Action is made FINAL.**

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al (US 2003/0142654) in view of Caloud (US 2003/0013467).

For claim 1, Chambers et al discloses a method of establishing session-based instant messaging between mobile devices that support a data packet-based communications service over a digital mobile network system **(see paragraph 0009)**, the method comprising:

an initiating mobile device to receive communications through the data packet-based communications service **(see paragraph 0010 and 0027)**; transmitting, from the initiating mobile device, an invitation message containing an address of the initiating mobile device to a target mobile device through a page-mode messaging service **(see paragraph 0011 and 0030 and figure 2 line 48)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see paragraph 0034 and 0036)**; receiving, at the initiating mobile device, a response from the target mobile device at the initiating wireless device through the data packet-based communications service (**see paragraph 0012, 0032 and 0035 and figure 2 line 58)**; and establishing a virtual connection through the data packet-based communications service for the direct data transfer session between the initiating mobile device and the target mobile device **(see paragraph 0034 and 0035)**.

For claim 1, Chambers explicitly does not disclose listening software port. However, **Caloud** from the same or similar fields of endeavor teaches opening a listening software port on an initiating mobile device **(paragraphs 0017, 0040, 0064 and 0077);** the listening software port of the initiating mobile device **(paragraphs 0017, 0040, 0064 and 0077)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have listening software port as taught in Caloud in the communications network of Chambers et al. The listening software port as taught in Caloud can be modified/implemented into the communication network of Chambers et al. The motivation for using the listening software port is to improve similar devices in

the same way.

For claim 2 and 13, Chambers et al discloses the initiating mobile device to receive invitation messages through the page-mode messaging service **(see paragraph 0011 and 0041)**; receiving, through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address of the other mobile device **(see paragraph 0042)**; and transmitting a response to the second address of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection **(see paragraph 0035 and 0043).**

For claim 2 and 13, Chambers explicitly does not disclose listening software port. However, **Caloud** from the same or similar fields of endeavor teaches opening a second listening software port on an initiating mobile device **(paragraphs 0017, 0040, 0064, 0077 and 0078);** receiving, at the second listening software port **(paragraphs 0017, 0040, 0064, 0077 and 0078);** a third listening software port of the other mobile device **(paragraphs 0017, 0040, 0064, 0077 and 0078)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have listening software port as taught in Caloud in the communications network of Chambers et al. The listening software port as taught in Caloud can be modified/implemented into the communication network of Chambers et al. The motivation for using the listening software port is to improve similar devices in the same way.

For claims 3, 14 and 23, Chambers et al discloses the data packet-based

communications service is GPRS **(See paragraph 0021, 0023 and 0035)** and the digital mobile network system is GSM **(See paragraph 0021 and 0023)**.

For claim 4, 15 and 24, Chambers et al discloses the initiating mobile device and the target mobile device include QWERTY keyboards **(See paragraph 0023 and 0033)**.

For claims 5, 16 and 25, Chambers et al discloses the address of the initiating mobile device is an IP address **(see paragraph 0029 lines 1-5).**

For claims 5, 16 and 25, Chambers explicitly does not disclose TCP. However, **Caloud** from the same or similar fields of endeavor teaches the listening software port is a TCP port **(paragraphs 0017, 0040, 0064 and 0077)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have TCP port as taught by Caloud in the communications network of Chambers et al. The TCP as taught by Caloud can be modified/implemented into the communication network of Chambers et al. The motivation for using TCP is to improve similar devices in the same way.

For claim 6, 17 and 26, Chambers et al discloses the page-mode messaging service is SMS **(see paragraph 0030 lines 1-5)**.

For claim 7, 18 and 27, Chambers et al discloses the method of claim 1 wherein the page-more messaging service is a PIN-to-PIN messaging service **(see paragraph 0010 and 0027)**.

For claim 8, 19 and 28, Chambers et al discloses the unique identification number is a telephone number **(see paragraph 0028 lines 1-4)**.

For claim 9, 20 and 29, Chambers et al discloses the unique identification number is a PIN number **(see paragraph 0027 lines 8-10)**.

For claims 10, 21 and 30, Chambers explicitly does not disclose TCP. However, **Caloud** from the same or similar fields of endeavor teaches the virtual reliable connection is a TCP connection **(paragraphs 0017, 0040, 0064 and 0077)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have TCP connection as taught by Caloud in the communications network of Chambers et al. The TCP as taught by Caloud can be modified/implemented into the communication network of Chambers et al. The motivation for using TCP is to improve similar devices in the same way.

For claim 11, Chambers et al discloses instant messaging communications through the virtual connection utilizes MSRP **(see paragraph 0013).**

For claim 12, Chambers et al discloses a mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising: programming means to support a data packet-based communications service over the digital mobile network system **(see paragraph 0020 and 0021)**; programming means to support a page-mode messaging service over the digital mobile network system **(see paragraph 0010 and 0015)**; programming means to receive communication through the data packet-based communications service **(see paragraph 0010 and 0027)**; programming means to send an invitation message containing an address of the mobile device to a target mobile device through the page-mode messaging service **(see paragraph 0011, 0030 and**

figure 2 line 48), wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see paragraph 0012, 0035 and 36)**; programming means to receive a response through the data packet-based communications service from the target mobile device **(see paragraph 0010, 0035 and figure 2 line 56)**; and programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device **(see paragraph 0034 and 0035)**.

For claim 12, Chambers explicitly does not disclose listening software port. However, **Caloud** from the same or similar fields of endeavor teaches programming means to open a listening software port **(paragraphs 0017, 0040, 0064 and 0077);** the listening software port of the mobile device **(paragraphs 0017, 0040, 0064 and 0077)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have listening software port as taught in Caloud in the communications network of Chambers et al. The listening software port as taught in Caloud can be modified/implemented into the communication network of Chambers et al. The motivation for using the listening software port is to improve similar devices in the same way.

For claim 22, Chambers et al discloses a computer readable storage medium having stored therein a computer program for establishing session-based instant messaging communications between mobile devices that supports a data packet-based

communications service over a digital mobile network system, the computer program to be executed on a mobile device to carry out all the steps of claim 1 **(see paragraph 0009, 0010, 0011 and 0023; above rejection of claim 1)**.

Response to Arguments

5. Applicant's arguments, filed on September 22, 2008, with respect to **claims 1, 12 and 22** have been considered but are moot in view of the new ground(s) of rejection necessitated by the new limitations, "...***software***...", added to claims 1 and 12**.** See the above rejection of claims 1 and 12 for the relevant citations found in Chambers et al in view of Caloud disclosing the newly added limitations.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liton Miah whose telephone number is (571)270-3124. The examiner can normally be reached on Monday through Friday 7:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571)272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Liton Miah

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617

Notice of References Cited	Application/Control No. 10/817,994	Applicant(s)/Patent Under Reexamination LIN, DANIEL J.	
	Examiner LITON MIAH	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0013467 A1	01-2003	Caloud, Philippe	455/466
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	**Art Unit**
	Miah, Liton	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/28/2007	03/15/2008	12/17/2008						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
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	20	✓	✓	✓						
	21	✓	✓	✓						
	22	✓	✓	✓						
	23	✓	✓	✓						
	24	✓	✓	✓						
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	26	✓	✓	✓						
	27	✓	✓	✓						
	28	✓	✓	✓						
	29	✓	✓	✓						
	30	✓	✓	✓						

PTO/SB/08A (07-06)
Approved for use through 09/30/2006. OMB 0651-0031
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel Lin
Art Unit	2617
Examiner Name	Miah, Liton
Attorney Docket Number	LIN/0002

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US 6,990,352	PYHALAMMI et al.	01-24-2006	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature	/Liton Miah/	Date Considered	12/17/2008

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.M./

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	**Art Unit**
	Miah, Liton	2617

SEARCHED

Class	Subclass	Date	Examiner
455	466	9/27/2007	Liton Miah
370	313	9/27/2007	Liton Miah
370	395.3	9/27/2007	Liton Miah
Search	Updated	3/15/2008	Liton Miah

SEARCH NOTES

Search Notes	Date	Examiner
EAST (US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB)	9/27/2007	Liton Miah
Consulted with Spe Rafael Perez-Gutierrez	9/27/2007	Liton Miah
Inventorship Search	9/28/2007	Liton Miah
Search Updated	3/15/2008	Liton Miah
Search Updated	12/17/2008	Liton Miah
Consulted with Spe (Rafael Perez-Gutierrez)	12/17/2008	Liton Miah

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

PTO/SB/30 (07-06)
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Request For Continued Examination (RCE) Transmittal

Address to:
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel J. Lin
Art Unit	2617
Examiner Name	Liton Miah
Attorney Docket Number	LIN/0002

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 C.F.R. 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
ii. ☐ Other _____

b. . ☒ Enclosed

i. ☒ Amendment/Reply
ii ☐ Affidavit(s)/Declaration(s)
iii. ☐ Information Disclosure Statement (IDS)
iv. ☐ Other _____

2. Miscellaneous

a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. 1.103(c) for a period of _____months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. 1.17(i) required)

b. ☐ Other _____

3. Fees The RCE fee under 37 C.F.R. 1.17(e) is required by 37 C.F.R. 1.114 when the RCE is filed.

a. ☒ The Director is hereby authorized to charge any additional fees, or credit any overpayments, to Deposit Account No.20-0782/LIN/0002/DL.

i. ☒ RCE fee required under 37 C.F.R. 1.17(e) $405.00
ii. ☐ Extension of time fee (37 C.F.R. 1.136 and 1.17)
iii. ☒ Other Any additional fees required to make submission timely and acceptable to the Office

b. ☐ Check in the amount of $ _____ enclosed

c. ☒ Payment by credit card RCE Fee $405.00

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	D. J. L.	Date	January 2, 2009
Name (Print /Type)	Daniel Lin	Registration No.	47750

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

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Name (Print /Type)		Date	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2617
Serial No.: 10/817,994	§	
	§	Examiner: Liton Miah
Filed: April 5, 2004	§	
	§	
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO FINAL OFFICE ACTION DATED DECEMBER 23, 2008

In response to the Final Office Action dated December 23, 2008, having an shortened statutory period for response set to expire on March 23, 2008, this response is being filed together with a Request for Continued Examination (RCE). Please enter this response and reconsider the claims pending in the application for reasons discussed below. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782/LIN/0002/FDK for any fees required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

IN THE CLAIMS:

The following listing of the claims replaces all prior versions of the claims in the application.

1. (Previously Presented): A method of establishing session-based instant messaging communications between mobile devices that support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening software port on an initiating mobile device to receive communications through the data packet-based communications service;

transmitting, from the initiating mobile device, an invitation message containing an address and the listening software port of the initiating mobile device to a target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating wireless device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device.

2. (Previously Presented): The method of claim 1 further comprising:

opening a second listening software port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second software listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening software port of the other mobile device; and

transmitting a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

3. (Original): The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. (Original): The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

5. (Previously Presented): The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

6. (Original): The method of claim 1 wherein the page-mode messaging service is SMS.

7. (Previously Presented) The method of claim 1 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

8. (Original): The method of claim 1 wherein the unique identification number is a telephone number.

9. (Original): The method of claim 1 wherein the unique identification number is a PIN number.

10. (Original): The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. (Original): The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

12. (Previously Presented) A mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising:

programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening software port to receive communication through the data packet-based communications service;

programming means to send an invitation message containing an address and the listening software port of the mobile device to a target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening software port; and

programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device.

13. (Previously Presented) The mobile device of claim 12 further comprising:

programming means to open a second listening software port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening software port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein the message contains a second address and a third listening software port of the other mobile device; and

programming means to transmit a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

14. (Original): The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

15. (Original): The mobile device of claim 12 further comprising a QWERTY keyboard.

16. (Previously Presented): The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening software port is TCP port.

17. (Original): The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. (Original): The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. (Original): The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. (Original): The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. (Original): The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. (Previously Presented): A computer readable storage medium having stored therein a computer program for establishing a session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on a mobile device to carry out all the steps of claim 1.

23. (Previously Presented): The computer readable storage medium of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. (Previously Presented): The computer readable storage medium of claim 22 wherein the initiating mobile device and the target mobile device include QWERTY

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keyboards.

25. (Currently Amended): The computer readable storage medium of claim 22 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

26. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is SMS.

27. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a telephone number.

29. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a PIN number.

30. (Previously Presented): The computer readable storage medium of claim 22 wherein the virtual connection is a TCP connection.

REMARKS

Applicant thanks Examiner for the opportunity to discuss certain of the arguments presented herein in a telephonic interview that took place on December 31, 2008.

Claims 1-30 are pending in the application. In the Office Action, claims 1-30 were rejected under 35 U.S.C. §103 as being obvious over U.S. Patent Application Publication No. 2003/0142654 (Chambers) in view of U.S. Patent Application Publication No. 2003/0013467 (Caloud). Applicant respectfully traverses Examiner's rejections.

With respect to independent claims 1, 12 and 22, Examiner cites Paragraphs [0017], [0040], [0064] and [0077] of Caloud as disclosing "opening a listening software port on an initiating mobile device to receive communications through the data packet-based communications service" (or similar limitations in independent claim 12).

While Caloud does teach that a "SIP resolution server" transmits an "IP address and information pertaining the port number of the SIP server" in an SMS message (see Paragraph [0017]), Applicant respectfully disagrees with Examiner that the cited portions of Caloud or any other portion of Caloud teaches "**opening** a listening software port **on an initiating mobile device** to receive communications through the data packet-based communications service" (emphasis added). By virtual of its use of a "SIP resolution server", Caloud specifically teaches away from Applicant's mobile peer-to-peer approach of "opening a listening port **on an initiating mobile device**" (emphasis added) in which, according to Paragraph [0013] of Applicant's specification, "a log-in or registration server for IM or presence purposes can be eliminated." As discussed in Figure 1 and Paragraphs [0016], [0043] and [0053] of Caloud, the SIP resolution server 119 is clearly used for presence purposes by utilizing a resolution table 127 to enable "an association to be set up between a symbolic address and a telephone number and an IMSI number" (Paragraph [0043]) to "determine whether the terminal is or is not accessible through the Internet net 106" (Paragraph [0053]).

Additionally, Examiner's proposed modification through the combination of Caloud and Chambers would both (1) render Chambers unsatisfactory for its intended purpose (see MPEP 2143.01(V) citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)) and (2) change the principal operation of Chambers (see MPEP 2143.01(VI) citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Specifically, the teachings of a standalone SIP resolution server 119 in Caloud directly contradict Chambers' intended purpose of having an "initiator terminal" (i.e., a mobile device) that desires to communicate with other terminals itself control and initiate invitation messages without any assistance from a separate server that helps to set up mobile device communications as taught in Caloud (see Paragraphs [0027]-[0028] and [0038] of Chambers).

Similarly, using a SIP server resolution server to send SMS messages would require "substantial reconstruction and redesign of the elements shown in [Chambers] as well as a change in the basic principle under which the [Chambers] construction was designed to operate." See *In re Ratti* at 270 F.2d at 813, 123 USPQ at 352. Specifically, Chambers notes that one of its objectives is to provide a method and device which "can be implemented in already existing communications systems, e.g., GSM or Universal Mobile Telecommunications System (UMTS) networks" (see Paragraph [0015]). Adding the SIP resolution server 119 of Caloud to Chambers would directly contravene this objective.

Furthermore, neither Caloud nor Chambers teaches or suggests "**opening** a listening software port on an initiating mobile device" (emphasis added) for "establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device" as claimed by Applicant. Applicant's invention requires opening a listening software port on an initiating mobile device every time the initiating mobile device desires to establish communications with a particular target mobile device. Instead, Caloud teaches a standalone SIP resolution server 119 that serves any and all mobile terminals that desire setting up a connection with another mobile terminal. Nowhere does Caloud teach or suggest that the SIP resolution server opens a listening

port each time a mobile terminal requests that the server assist in setting up connection with another terminal. Caloud's SIP resolution server implies more traditional server-based techniques, where servers leave open one known connection to allow any number of devices to communicate with it, which differs from Applicant's approach in the claims that a listening port is opened for a particular target mobile device.

Chambers also teaches away from opening a listening software port each time an initiating mobile device desires to establish communications with a target mobile device. As set forth in Paragraph [0030] of Chambers, "an initiation or invitation message is sent to members of the initial member list." Because this initiation or invitation message is sent to all the members of an initial member list (see, e.g., Paragraph [0032] of Chambers), Chambers directly contradicts Applicant's requirement that a listening software port is opened on the initiating device every time the initiating mobile device desires to establish connections with a different target mobile device. Instead, Chambers requires that all members of the initial member list respond to the same invitation message.

With respect to claim 2, Applicant respectfully notes neither Chambers or Caloud teach or suggest opening a second software listening port "to receive invitation messages through the page-mode messaging service." While Caloud discusses a port in the context of "IP address information" (see Paragraph [0017]), such a port cannot receive messages through a "page-mode messaging service." One example of a page mode messaging service is SMS (see Applicant's claim 6). All of Caloud's discussions relating to ports relate to IP based technology, which is not capable of receiving messages through a page-mode messaging service such as SMS.

Because all remaining claims depend from one of claims 1, 12 and 22, Applicant believes that they are also allowable over Chambers. In view of the foregoing, this

application is now believed to be in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to call Applicant's representative at the number listed below.

Daniel Lin, Reg. No. 47,750
Patterson & Sheridan, L.L.P.
3040 Post Oak Blvd., Suite 1500
Houston, TX 77056-6582
Telephone: 650.330.2310
Facsimile: 650.330.2314
Attorney for Applicant

Apple Inc.
Ex. 1004 - Page 318

Electronic Patent Application Fee Transmittal

Application Number:	10817994
Filing Date:	05-Apr-2004
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Filer:	Frederick D. Kim./Kimberly Keeler
Attorney Docket Number:	OJL-1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Electronic Acknowledgement Receipt

EFS ID:	4549694
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kimberly Keeler
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	02-JAN-2009
Filing Date:	05-APR-2004
Time Stamp:	17:49:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	1341
Deposit Account	200782
Authorized User	CAREY,JOHN

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		LIN_0002_ERCE.pdf	447394 9e6a2830d415c6adcfb49c7bf5f93b1eb94c7d6f	yes	11

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Request for Continued Examination (RCE)	1	1
Amendment After Final	2	11

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	29928 89f0f0bda4b61578d11335719da7531eb46e9e27	no	2

Warnings:

Information:

Total Files Size (in bytes):	477322

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 01/02/2009

PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
01/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

All participants (applicant, applicant's representative, PTO personnel):

(1) *LITON MIAH*. (3)_____.

(2) *Daniel J. Lin*. (4)_____.

Date of Interview: *31 December 2008*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1,12 and 22*.

Identification of prior art discussed: *Caloud (US 2003/0013467)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *The Examiner and Applicant, Mr. Daniel Lin discussed the current claim language"opening a listening port" in view of the teachings of Caloud. No agreement was reached and the Examiner advised Applicant that he will formally consider the response filed and examiner also advised Applicant that any amendment of claims may raise new matter that will not be enter*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Liton Miah/ Examiner, Art Unit 2617	

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 03/06/2009

PATTERSON & SHERIDAN, L.L.P.
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HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
03/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 2, 2009 has been entered. **Claims 1-30** are still pending in the present application.

Response to Arguments

2. Applicant's arguments, filed on January 2, 2009, with respect to **claims 1, 12 and 22** have been considered but are moot in view of the new ground(s) of rejection

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al (US 2003/0142654) in view of Pyhalammi et al (US 6,990,352).

For claim 1, Chambers et al discloses a method of establishing session-based instant messaging between mobile devices that support a data packet-based communications service over a digital mobile network system **(see paragraph 0009)**, the method comprising:

an initiating mobile device to receive communications through the data packet-based communications service **(see paragraph 0010 and 0027)**; transmitting, from the initiating mobile device, an invitation message containing an address of the initiating mobile device to a target mobile device through a page-mode messaging service **(see paragraph 0011 and 0030 and figure 2 line 48)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see paragraph 0034 and 0036)**; receiving, at the initiating mobile device, a response from the target mobile device at the initiating wireless device through the data packet-based communications service (**see paragraph 0012, 0032 and 0035 and figure 2 line 58)**; and establishing a virtual connection through the data packet-based communications service for the direct data transfer session between the initiating mobile device and the target mobile device **(see paragraph 0034 and 0035)**.

For claim 1, Chambers explicitly does not disclose listening software port. However, **Pyhalammi et al** from the same or similar fields of endeavor teaches opening a listening software port on an initiating mobile device **(col. 1 [ln. 51-67], col. 3 [ln. 46-**

55] and col. 4 [ln. 5-30]); the listening software port of the initiating mobile device **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30])**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have listening software port as taught in Pyhalammi et al in the communications network of Chambers et al. The listening software port as taught in Pyhalammi et al can be modified/implemented into the communication network of Chambers et al. The motivation for using the listening software port is to improve similar devices in the same way.

For claim 12, Chambers et al discloses a mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising: programming means to support a data packet-based communications service over the digital mobile network system **(see paragraph 0020 and 0021)**; programming means to support a page-mode messaging service over the digital mobile network system **(see paragraph 0010 and 0015)**; programming means to receive communication through the data packet-based communications service **(see paragraph 0010 and 0027)**; programming means to send an invitation message containing an address of the mobile device to a target mobile device through the page-mode messaging service **(see paragraph 0011, 0030 and figure 2 line 48)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(see paragraph 0012, 0035 and 36)**; programming means to receive a response through the data packet-based

communications service from the target mobile device **(see paragraph 0010, 0035 and figure 2 line 56)**; and programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device **(see paragraph 0034 and 0035)**.

For claim 12, Chambers does not disclose listening software port. However, Pyhalammi et al from the same or similar fields of endeavor teaches programming means to open a listening software port **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30]);** the listening software port of the mobile device **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30])**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have listening software port as taught in Pyhalammi et al in the communications network of Chambers et al. The listening software port as taught in Pyhalammi et al can be modified/implemented into the communication network of Chambers et al. The motivation for using the listening software port is to improve similar devices in the same way.

For claim 2 and 13, Chambers et al discloses the initiating mobile device to receive invitation messages through the page-mode messaging service **(see paragraph 0011 and 0041)**; receiving, through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address of the other mobile device **(see paragraph 0042)**; and transmitting a response to the second address of the other mobile device through the data packet-based communications

service, wherein the response acknowledges the ability to establish a virtual reliable connection **(see paragraph 0035 and 0043).**

For claim 2 and 13, Chambers explicitly does not disclose listening software port. However, Pyhalammi et al from the same or similar fields of endeavor teaches opening a second listening software port on an initiating mobile device **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30]);** receiving, at the second listening software port **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30]);** a third listening software port of the other mobile device **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30])**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have listening software port as taught in Pyhalammi et al in the communications network of Chambers et al. The listening software port as taught in Pyhalammi et al can be modified/implemented into the communication network of Chambers et al. The motivation for using the listening software port is to improve similar devices in the same way.

For claim 22, Chambers et al discloses a computer readable storage medium having stored therein a computer program for establishing session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on a mobile device to carry out all the steps of claim 1 **(see paragraph 0009, 0010, 0011 and 0023; above rejection of claim 1)**.

For claims 3, 14 and 23, Chambers et al discloses the data packet-based communications service is GPRS **(See paragraph 0021, 0023 and 0035)** and the

digital mobile network system is GSM **(See paragraph 0021 and 0023)**.

For claim 4, 15 and 24, Chambers et al discloses the initiating mobile device and the target mobile device include QWERTY keyboards **(See paragraph 0023 and 0033)**.

For claims 5, 16 and 25, Chambers et al discloses the address of the initiating mobile device is an IP address **(see paragraph 0029 lines 1-5).**

For claims 5, 16 and 25, Chambers explicitly does not disclose TCP. However, Pyhalammi et al from the same or similar fields of endeavor teaches the listening software port is a TCP port **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30])**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have TCP port as taught by Pyhalammi et al in the communications network of Chambers et al. The TCP as taught by Pyhalammi et al can be modified/implemented into the communication network of Chambers et al. The motivation for using TCP is to improve similar devices in the same way.

For claim 6, 17 and 26, Chambers et al discloses the page-mode messaging service is SMS **(see paragraph 0030 lines 1-5)**.

For claim 7, 18 and 27, Chambers et al discloses the method of claim 1 wherein the page-more messaging service is a PIN-to-PIN messaging service **(see paragraph 0010 and 0027)**.

For claim 8, 19 and 28, Chambers et al discloses the unique identification number is a telephone number **(see paragraph 0028 lines 1-4)**.

For claim 9, 20 and 29, Chambers et al discloses the unique identification

number is a PIN number **(see paragraph 0027 lines 8-10)**.

For claims 10, 21 and 30, Chambers explicitly does not disclose TCP. However, Pyhalammi et al from the same or similar fields of endeavor teaches the virtual reliable connection is a TCP connection **(col. 1 [ln. 51-67], col. 3 [ln. 46-55] and col. 4 [ln. 5-30])**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to have TCP connection as taught by Pyhalammi et al in the communications network of Chambers et al. The TCP as taught by Pyhalammi et al can be modified/implemented into the communication network of Chambers et al. The motivation for using TCP is to improve similar devices in the same way.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al in view of Pyhalammi et al in further view of Betzler (US 2003/0126213).

For claim 11, Chambers and Pyhalammi et al specifically do not disclose MSRP. However, **Betzler** from the same or similar fields of endeavor teaches instant messaging communications through the virtual connection utilizes MSRP **(see paragraph 0026-0027 and 0029)**. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to utilize MSRP as taught by Betzler in the communications network of Chambers et al and Pyhalammi et al. The MSRP as taught by Betzler can be modified/implemented into the communication network of Chambers et al and Pyhalammi et al. The motivation for using MSRP is to improve similar devices in the same way.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LITON MIAH whose telephone number is (571)270-3124. The examiner can normally be reached on Monday through Friday 7:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571)272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LM

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	Art Unit
	Miah, Liton	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/28/2007	03/15/2008	12/17/2008	03/02/2009					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	✓	✓	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	✓	✓	✓					
	20	✓	✓	✓	✓					
	21	✓	✓	✓	✓					
	22	✓	✓	✓	✓					
	23	✓	✓	✓	✓					
	24	✓	✓	✓	✓					
	25	✓	✓	✓	✓					
	26	✓	✓	✓	✓					
	27	✓	✓	✓	✓					
	28	✓	✓	✓	✓					
	29	✓	✓	✓	✓					
	30	✓	✓	✓	✓					

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	**Art Unit**
	Miah, Liton	2617

SEARCHED

Class	Subclass	Date	Examiner
455	466	9/27/2007	Liton Miah
370	313	9/27/2007	Liton Miah
370	395.3	9/27/2007	Liton Miah
Search	Updated	3/15/2008	Liton Miah

SEARCH NOTES

Search Notes	Date	Examiner
EAST (US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB)	9/27/2007	Liton Miah
Consulted with Spe Rafael Perez-Gutierrez	9/27/2007	Liton Miah
Inventorship Search	9/28/2007	Liton Miah
Search Updated	3/15/2008	Liton Miah
Search Updated	12/17/2008	Liton Miah
Consulted with Spe (Rafael Perez-Gutierrez)	12/17/2008	Liton Miah
Search Updated	3/2/2009	Liton Miah

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2617
Serial No.: 10/817,994	§	
	§	Examiner: Liton Miah
Filed: April 5, 2004	§	
	§	
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO OFFICE ACTION DATED MARCH 6, 2009

In response to the Office Action dated March 6, 2009, having an shortened statutory period for response set to expire on June 6, 2009, please enter this response and reconsider the claims pending in the application for reasons discussed below. While Applicant believes that no additional fees are required, the Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782/LIN/0002/FDK for any fees required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

IN THE CLAIMS:

The following listing of the claims replaces all prior versions of the claims in the application.

1. (Currently Amended): A method of establishing session-based instant messaging communications between mobile devices that support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening software port on an initiating mobile device to receive communications through the data packet-based communications service;

transmitting, from the initiating mobile device, an invitation message containing an address and the listening software port of the initiating mobile device to a target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating ~~wireless~~ mobile device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device.

2. (Previously Presented): The method of claim 1 further comprising:

opening a second listening software port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second software listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening software port of the other mobile device; and

transmitting a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

3. (Original): The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. (Original): The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

5. (Previously Presented): The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

6. (Original): The method of claim 1 wherein the page-mode messaging service is SMS.

7. (Previously Presented) The method of claim 1 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

8. (Original): The method of claim 1 wherein the unique identification number is a telephone number.

9. (Original): The method of claim 1 wherein the unique identification number is a PIN number.

10. (Original): The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. (Original): The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

12. (Previously Presented): A mobile device enabled to establish session-based instant messaging communications with other mobile devices in a digital mobile network system, the mobile device comprising:

programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening software port to receive communication through the data packet-based communications service;

programming means to send an invitation message containing an address and the listening software port of the mobile device to a target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening software port; and

programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device.

13. (Previously Presented): The mobile device of claim 12 further comprising:

programming means to open a second listening software port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening software port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein the message contains a second address and a third listening software port of the other mobile device; and

programming means to transmit a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

14. (Original): The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

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15. (Original): The mobile device of claim 12 further comprising a QWERTY keyboard.

16. (Previously Presented): The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening software port is TCP port.

17. (Original): The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. (Original): The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. (Original): The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. (Original): The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. (Original): The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. (Previously Presented): A computer readable storage medium having stored therein a computer program for establishing a session-based instant messaging communications between mobile devices that supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on a mobile device to carry out all the steps of claim 1.

23. (Previously Presented): The computer readable storage medium of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. (Previously Presented): The computer readable storage medium of claim 22 wherein the initiating mobile device and the target mobile device include QWERTY

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keyboards.

25. (Previously Presented): The computer readable storage medium of claim 22 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

26. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is SMS.

27. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a telephone number.

29. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a PIN number.

30. (Previously Presented): The computer readable storage medium of claim 22 wherein the virtual connection is a TCP connection.

REMARKS

Claims 1-30 are pending in the application. In the Office Action, claims 1-30 were rejected under 35 U.S.C. §103 as being obvious over U.S. Patent Application Publication No. 2003/0142654 (Chambers) in view of U.S. Patent 6,990,352 (Pyhälammi). Applicant respectfully traverses Examiner's rejections.

With respect to independent claim 1, Examiner cites Pyhälammi as disclosing "opening a listening software port on an initiating mobile device to receive communications through the data packet-based communications service" (or similar limitations in independent claim 12).

In Applicant's invention, the initiating mobile device opens a listening software port as required by claim 1 so that the target mobile device, **not** the initiating mobile device, is able to **initiate** communications to the initiating mobile device **through the data packet-based communications service** (e.g., GPRS, in one embodiment) to establish a virtual connection. This is captured in the subsequent receiving step of claim 1, where the initiating mobile device receives a response from the target mobile device at its listening software port on the initiating mobile device **through the data packet-based communications service**.

Pyhälammi clearly teaches away from "opening a software listening port on an initiating mobile device to receive communications through the data packet-based communications service." First, nowhere is a port mentioned within passages cited by Examiner or anywhere else in Pyhälammi. Second, Pyhälammi teaches a method that requires **two SMS messages** to be exchanged in order to establish a connection between two devices: one SMS containing the IP address of the first device (from the first device to the second device) and a second SMS message containing the IP address of the second device (from the second device to the first device). As further explained below, requiring the first device to receive the IP address of the second device in a **second SMS** message clearly contradicts the teaching and the purpose of

"opening a software listening port to receive communications through the data packet-based communications service," as required by Applicant's invention.

In Applicant's invention, the **target mobile device initiates** the establishment of a virtual connection **through the data packet-based communications service** (e.g., GPRS, in one embodiment) by contacting the initiating mobile device **at the initiating mobile device's opened software listening port** (i.e., see the receiving step in claim 1) **precisely because** the initiating mobile device has opened a software listening port. Because of the availability of an opened software listening port on the initiating mobile device, Applicant's invention only requires **one SMS** (e.g., in an embodiment utilizing SMS) to be sent from the initiating mobile device to the target mobile device – the target mobile device is able to then initiate a data-packet based connection (e.g., GPRS connection) by contacting the initiating mobile device at the opened software port. In Applicant's invention, the initiating mobile device **does not** receive the target mobile device's IP address in a **second SMS** as required Pyhälammi.

In direct contrast, Pyhälammi does not mention opening a software listening port at all, and therefore, understandably, requires a second SMS message to enable the first device (rather than the second device) to initiate GPRS communication to establish the direct data connection. As Pyhälammi clearly explains in Col. 4, lines 4-20, its first device must "wait and receive the return SMS message containing the IP address of the second device" before the first device itself initiates the establishment of a direct data connection with the second device. Because the first device requires the second device's IP address to initiate a GPRS connection to the second device, Pyhälammi clearly teaches away from a first device that opens a software listening port so that the second device can initiate a GPRS connection to the first device.

Furthermore, Chambers also teaches away from opening a listening software port each time an initiating mobile device desires to establish communications with a target mobile device. As set forth in Paragraph [0030] of Chambers, "an initiation or invitation message is sent to members of the initial member list." Because this initiation or invitation message is sent to all the members of an initial member list (see, e.g.,

Paragraph [0032] of Chambers), Chambers directly contradicts Applicant's requirement that a listening software port is opened on the initiating device every time the initiating mobile device desires to establish connections with a different target mobile device. Instead, Chambers requires that all members of the initial member list respond to the same invitation message.

Because all remaining claims depend from one of claims 1, 12 and 22, Applicant believes that they are also allowable over Pyhälammi and Chambers. In view of the foregoing, this application is now believed to be in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to call Applicant at the number listed below.

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Electronic Acknowledgement Receipt

EFS ID:	4927515
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kimberly Keeler
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	09-MAR-2009
Filing Date:	05-APR-2004
Time Stamp:	14:09:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	LIN_0002EROA.pdf	344147 299d6d98f7f25a37316795edb6ee42a915a16765	no	9

Warnings:	
Information:	

Total Files Size (in bytes):	344147

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

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PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/817,994	04/05/2004	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	03/09/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/VERNON TOWLER/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Confirmation No.: 6700
	§	
	§	Group Art Unit: 2617
Serial No.: 10/817,994	§	
	§	Examiner: Liton Miah
Filed: April 5, 2004	§	
	§	
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL AMENDMENT

Dear Sir:

This amendment is submitted following the filing of a Response to Office Action filed March 9, 2009 and an Examiner Interview on April 9, 2009. While Applicant believes that no additional fees are required, the Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782/LIN/0002/FDK for any fees required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

IN THE CLAIMS:

The following listing of the claims replaces all prior versions of the claims in the application.

1. (Currently Amended): A method of establishing session-based instant messaging communications between an initiating mobile device and a target mobile device~~mobile devices~~ that each support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening software port for the target mobile device on ~~an~~ the initiating mobile device to receive communications through the data packet-based communications service from the target mobile device;

transmitting, from the initiating mobile device, an invitation message containing an address and the listening software port of the initiating mobile device to ~~a~~ the target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating mobile device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices.

2. (Previously Presented): The method of claim 1 further comprising:

opening a second listening software port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second software listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening software port of the other mobile device; and

transmitting a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

3. (Original): The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. (Original): The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

5. (Previously Presented): The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

6. (Original): The method of claim 1 wherein the page-mode messaging service is SMS.

7. (Previously Presented) The method of claim 1 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

8. (Original): The method of claim 1 wherein the unique identification number is a telephone number.

9. (Original): The method of claim 1 wherein the unique identification number is a PIN number.

10. (Original): The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. (Original): The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

12. (Currently Amended) A mobile device enabled to establish session-based instant

Apple Inc.
Ex. 1004 - Page 351

messaging communications with a target mobile device~~with other mobile devices~~ in a digital mobile network system, the mobile device comprising:

programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening software port for the target mobile device to receive communication through the data packet-based communications service from the target mobile device;

programming means to send an invitation message containing an address and the listening software port of the mobile device to ~~a~~ the target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening software port; and

programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices.

13. (Previously Presented) The mobile device of claim 12 further comprising:

programming means to open a second listening software port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening software port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein the message contains a second address and a third listening software port of the other mobile device; and

programming means to transmit a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a

virtual reliable connection.

14. (Original): The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

15. (Original): The mobile device of claim 12 further comprising a QWERTY keyboard.

16. (Previously Presented): The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening software port is TCP port.

17. (Original): The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. (Original): The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. (Original): The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. (Original): The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. (Original): The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. (Currently Amended): A computer readable storage medium having stored therein a computer program for establishing a session-based instant messaging communications between an initiating mobile device and a target mobile device ~~mobile devices~~ that each supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on ~~a~~ the initiating mobile device to carry out all the steps of claim 1.

23. (Previously Presented): The computer readable storage medium of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. (Previously Presented): The computer readable storage medium of claim 22 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

25. (Previously Presented): The computer readable storage medium of claim 22 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

26. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is SMS.

27. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a telephone number.

29. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a PIN number.

30. (Previously Presented): The computer readable storage medium of claim 22 wherein the virtual connection is a TCP connection.

REMARKS

This supplemental amendment is submitted pursuant to the Examiner Interview on April 9, 2009 with Examiner Liton Miah and Supervisor Rafael Perez-Gutierrez. The Applicant thanks Examiner Miah and Supervisor Perez-Gutierrez for the interview and discussions during the interview. Examiner Miah and Supervisor Perez Gutierrez suggested that Claim 1 (and similar independent claims) could be further clarified and distinguished from the prior art by amending the claims to articulate the peer-to-peer (i.e., one-to-one) nature of and the elimination of server functionality in Applicant's invention. In response, the claims are amended in accordance with suggestions from Examiner Miah and Supervisor Perez-Gutierrez.

Claims 1-30 remain pending in the application. Independent claims 1, 12 and 22 have been amended. In the Office Action dated March, 6, 2009, claims 1-30 were rejected under 35 U.S.C. §103 as being obvious over U.S. Patent Application Publication No. 2003/0142654 (Chambers) in view of U.S. Patent 6,990,352 (Pyhälammi). Applicant respectfully traverses Examiner's rejections.

Applicant has amended claim 1 to clarify that (1) the listening port is opened **for the target mobile device** to receive communications **from the target mobile device**, and (2) the virtual connection is established **without use of a server that handles connection requests from multiple mobile devices**. Support for these amendments can be found in Paragraph [0013] of Applicant's specification (i.e., "the initiating mobile device opens a TCP port to listen **for communications from the target mobile device**" and "a log-on or registration server for IM or presence purposes can be **eliminated**"). In accordance with discussions with the Examiner, these amendments clarify that, in Applicant's invention, a listening port is opened for a particular target mobile device and that no server is used to handle connection requests from multiple mobile devices.

In contrast, Chambers clearly teaches a server that handles connection requests from multiple mobile devices and is running on its "initiator terminal." In Paragraph

[0046], Chambers refers to the ability of different participating terminals to assume the responsibilities of the initiator terminal (i.e., handling connection request from multiple mobile devices) rather then terminating a session. In doing so, Chamber states that new initiator terminal assumes the responsibilities of the old initiator terminal, **"acting as server"** (emphasis added).

Furthermore, because the initiator terminal of Chambers acts as a server that handles requests from multiple mobile devices, Chambers also teaches away from opening a listening software port **for the target mobile device** to receive communications **from the target mobile device**, as required in amended Claim 1. As set forth in Paragraph [0030] of Chambers, "an initiation or invitation message is sent to members of the initial member list." Because this initiation or invitation message is sent to all the members of an initial member list (see, e.g., Paragraph [0032] of Chambers), the initiator terminal acting as server in Chambers directly contradicts Applicant's peer-to-peer approach and the requirement in amended Claim 1 that a listening software port is opened on the initiating device for the target mobile device for communications from the target mobile device. Instead, Chambers requires that all members of the initial member list receive and respond to the same invitation message. For the foregoing reasons, Applicant submits that Chambers does not teach (1) opening a listening port for the target mobile device and (2) establishing a virtual connection, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices.

With respect to Pyhälammi, Applicant respectfully submits that Pyhälammi does not overcome the deficiencies of Chambers and respectfully maintains his remarks made in the Response dated March 9, 2009, which, for convenience, is replicated below. As discussed therein, in Applicant's invention, the initiating mobile device opens a listening software port as required by amended Claim 1 so that the target mobile device, **not** the initiating mobile device, is able to **initiate** communications to the initiating mobile device **through the data packet-based communications service** (e.g., GPRS, in one embodiment) to establish a virtual connection. This is captured in the subsequent receiving step of Claim 1, where the initiating mobile device receives a

response from the target mobile device at its listening software port on the initiating mobile device **through the data packet-based communications service** (i.e., **not** through a page-mode messaging service, such as SMS).

Pyhälammi clearly teaches away from "opening a software listening port for the target mobile device on an initiating mobile device to receive communications through the data packet-based communications service from the target mobile device." First, nowhere is a port mentioned within passages cited by Examiner or anywhere else in Pyhälammi. Second, Pyhälammi teaches a method that requires **two SMS messages** to be exchanged in order to establish a connection between two devices: one SMS containing the IP address of the first device (from the first device to the second device) and a second SMS message containing the IP address of the second device (from the second device to the first device). As further explained below, requiring the first device to receive the IP address of the second device in a **second SMS** message clearly contradicts the teaching and the purpose of "opening a software listening port for the target mobile device to receive communications through the data packet-based communications service from the target mobile device," as required by Applicant's invention.

In Applicant's invention, the **target mobile device initiates** the establishment of a virtual connection **through the data packet-based communications service** (e.g., GPRS, in one embodiment) by contacting the initiating mobile device **at the initiating mobile device's opened software listening port** (i.e., see the receiving step in amended Claim 1) **precisely because** the initiating mobile device has opened a software listening port for the target mobile device. Because of the availability of an opened software listening port on the initiating mobile device, Applicant's invention only requires **one SMS** (e.g., in an embodiment utilizing SMS) to be sent from the initiating mobile device to the target mobile device – the target mobile device is able to then initiate a data-packet based connection (e.g., GPRS connection) by contacting the initiating mobile device at the opened software port. In Applicant's invention, the initiating mobile device **does not** receive the target mobile device's IP address in a **second SMS** as required Pyhälammi.

In direct contrast, Pyhälammi does not mention opening a software listening port at all, and therefore, understandably, requires a second SMS message to enable the first device (rather than the second device) to initiate a GPRS communication to establish the direct data connection. As Pyhälammi clearly explains in Col. 4, lines 4-20, its first device must "wait and receive the return SMS message containing the IP address of the second device" before the first device itself initiates the establishment of a direct data connection with the second device. Because the first device requires the second device's IP address to initiate a GPRS connection to the second device, Pyhälammi clearly teaches away from a first device that opens a software listening port so that the second device can initiate a GPRS connection to the first device. Specifically, having the second device send a return SMS message (which does **not** use a data-packet based communications service such as GPRS) to the first device directly contravenes the receiving step of amended claim 1, which requires receiving a response **though** the data-packet based communications service.

Independent claims 12 and 22 have been amended to include similar limitations to amended claim 1. Because all remaining claims depend from one of claims 1, 12 and 22, Applicant believes that they are also allowable over Pyhälammi and Chambers. In view of the foregoing, this application is now believed to be in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to call Applicant at the number listed below.

Respectfully submitted,

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Electronic Acknowledgement Receipt

EFS ID:	5137072
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kristen Neil
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	10-APR-2009
Filing Date:	05-APR-2004
Time Stamp:	17:34:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	LIN_0002_SA.pdf	432156 8bbf2ad7f8a227f147132dbf6b3394960c636b2a	no	10

Warnings:	
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Total Files Size (in bytes):	432156

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

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Application or Docket Number	Filing Date	☐ To be Mailed
10/817,994	04/05/2004	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 04/10/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/KIM WATSON SAUNDERS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 04/14/2009

PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
04/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

All participants (applicant, applicant's representative, PTO personnel):

(1) *LITON MIAH*. (3)*Daniel Lin*.

(2) *Rafael Perez-Gutierrez*. (4)_____.

Date of Interview: *09 April 2009*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1 and 12*.

Identification of prior art discussed: *Chambers et al (2003/0142654) and Pyhalammi et al (US 6,990,352)*.

Agreement with respect to the claims f)☒ was reached. g)☐ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Liton Miah/ Examiner, Art Unit 2617	/Rafael Pérez-Gutiérrez/ Supervisory Patent Examiner, Art Unit 2617

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

———

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: The Examiner and Mr. Daniel Lin discussed the proposed claim language of "opening a listening software port on an initiating mobile device to receive communication through the data packet-based communication service" in view of the teachings of the above-mentioned prior art rejection. An agreement was reached and it was suggested to Mr. Lin to amend the claim to include a one to one instant messaging and to include that the claimed invention does not use a server. Mr. Lin was advised to file a supplementary amendment for further consideration.

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PTO/SB/08A (07-06)
Approved for use through 09/30/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel J. Lin
Art Unit	2617
Examiner Name	Miah, Liton
Attorney Docket Number	LIN/0002

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US 2002/0083127	06-27-2002	AGRAWAL, Anuraag	
	A2	US 2002/0173308	11-21-2002	DORENBOSCH, et al.	
	A3	US 2003/0076367	04-24-2003	BENCZE, et al.	
	A4	US 2003/0217174	11-20-2003	DORENBOSCH, et al.	
	A5	US 2004/0152477	08-05-2004	WU, et al.	
	A6	US 2005/0015495	01-20-2005	FLORKEY, et al.	
	A7	US 2005/0058094	03-17-2005	LAZARIDIS, et al.	
	A8	US 2005/0094625	05-05-2005	BOUAT, Sebastien	
	A9	US 2005/0197143	09-08-2005	LEE, et al.	
	A10	US 2006/0126594	06-15-2006	TU, Guan-Hua	
	A11	US 7,218,921	05-15-2007	MENDIOLA, et al.	
	A12	US 2007/0112962	05-17-2007	LEWONTIN, Steve	
	A13	US 2007/0233732	10-04-2007	PORTER, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	10817994
Filing Date:	05-Apr-2004
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Filer:	Frederick D. Kim./Kristen Neil
Attorney Docket Number:	OJL-1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	5510713
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kristen Neil
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	12-JUN-2009
Filing Date:	05-APR-2004
Time Stamp:	18:47:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	4404
Deposit Account	200782
Authorized User	LIN,DANIEL

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		LIN_0002_SIDS.pdf	108372 1ae6db734314666cde6cb34002ea722d6d40c48c	yes	3

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Transmittal Letter	1	2
Information Disclosure Statement (IDS) Filed (SB/08)	3	3

Warnings:

Information:

2	Fee Worksheet (PTO-875)	fee-info.pdf	29956 0b9a22564aa25d94fc0beb1ed3d899c5c79fe560	no	2

Warnings:

Information:

Total Files Size (in bytes):	138328

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Daniel J. LIN	§	Confirmation No.: 6700
Serial No.:	10/817,994	§	Group Art Unit: 2617
Filed:	April 5, 2004	§	Examiner: Miah Liton
For:	PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

The Applicants, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications, or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR §1.56.

While the information submitted in this Supplemental Information Disclosure Statement may be material pursuant to 37 CFR §1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR §1.97, this Supplemental Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR §1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-SB08a. Copies of the U.S. references are not being submitted.

The fee of $180.00 is due under 37 CFR §1.17(p) and is being paid by credit card. The Commissioner is hereby authorized to charge any other fee necessary to make this submission timely to the Deposit Account No. 20-0782/LIN/0002/DJL.

Respectfully submitted,

Daniel J. Lin
Registration No. 47,750
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicant(s)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 06/24/2009

PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
06/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/12/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Action is in response to Applicant's amendment filed on April 10, 2009. Claims 1-30 are still pending in the present application. **This Action is made FINAL.**

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-10, 12-14, 16-23 and 25-30 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lazaridis et al (US 2005/0058094).

For claim 1, Lazaridis et al discloses a method of establishing session-based instant messaging between an initiating mobile device and a target mobile device that each support a data packet-based communications service over a digital mobile network system **(paragraph 0011)**, the method comprising:

opening a listening software port for the target mobile device on the initiating mobile device to receive communications through the data packet-based communications service from the target mobile device **(paragraph 0022 and 0027)**; transmitting, from the initiating mobile device, an invitation message containing an address and the listening software port of the initiating mobile device to the target mobile device through a page-mode messaging service **(paragraph 0013 and 0024)**, wherein the target mobile device is located by providing to the

page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(paragraph 0013 and 0024)**; receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating mobile device through the data packet-based communications service **(paragraph 0015 and 0024)**; and establishing a virtual connection through the data packet-based communications service for the direct data transfer session between the initiating mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices **(paragraph 0011, 0024 and 0034)**.

For claim 2 and 13, Lazaridis et al discloses opening a second listening software port on the initiating mobile device to receive invitation messages through the page-mode messaging service **(paragraph 0024 and 0032)**; receiving, at the second listening software port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening software port of the other mobile device **(paragraph 0024, 0030 and 0032)**; and transmitting a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection **(paragraph 0024, 0030 and 0032).**

For claims 3, 14 and 23, Lazaridis et al discloses the data packet-based communications service is GPRS **(paragraph 0022)** and the digital mobile network system is GSM **(paragraph 0022)**.

For claims 5, 16 and 25, Lazaridis et al discloses the address of the initiating mobile device is an IP address and the listening software port is a TCP port **(paragraph 0022 and 0023).**

For claim 6, 17 and 26, Lazaridis et al discloses the page-mode messaging service is SMS **(paragraph 0022)**.

For claim 7, 18 and 27, Lazaridis et al discloses the method of claim 1 wherein the page-more messaging service is a PIN-to-PIN messaging service **(paragraph 0022)**.

For claim 8, 19 and 28, Lazaridis et al discloses the unique identification number is a telephone number **(paragraph 0023)**.

For claim 9, 20 and 29, Lazaridis et al discloses the unique identification number is a PIN number **(paragraph 0023)**.

For claims 10, 21 and 30 Lazaridis et al discloses the virtual reliable connection is a TCP connection **(paragraph 0022)**.

For claim 12, Lazaridis et al discloses a mobile device enabled to establish session-based instant messaging communications with a target mobile device in a digital mobile network system **(paragraph 0011)**, the mobile device comprising: programming means to support a data packet-based communications service over the digital mobile network system **(paragraph 0022 and 0024)**; programming means to support a page-mode messaging service over the digital mobile network system **(paragraph 0022 and 0024)**; programming means to open a listening software port for the target mobile device to receive communication through the data packet-based communications service from the target mobile device **(paragraph 0022 and 0027)**; programming means to send an invitation message containing an address and the listening

software port of the mobile device to the target mobile device through the page-mode messaging service **(paragraph 0013 and 0024)**, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device **(paragraph 0013 and 0024)**; programming means to receive a response through the data packet-based communications service from the target mobile device at the listening software port **(paragraph 0015 and 0024)**; and programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices **(paragraph 0011, 0024 and 0034)**.

For claim 22, Lazaridis et al discloses a computer readable storage medium having stored therein a computer program for establishing session-based instant messaging communications between an initiating mobile device and a target mobile device that each supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on the initiating mobile
device to carry out all the steps of claim 1 **(see above rejection of claim 1)**.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 4, 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazaridis et al.

Consider **claims 4, 15 and 24**, and as applied to claims 1, 12 and 22 above, Lazaridis et al do not specifically disclose that the initiating mobile device and the target mobile device include QWERTY keyboards.

Nonetheless, the Examiner takes Official Notice that having the claimed QWERTY keyboards for mobile devices is well known in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the system of Lazaridis et al in order to specifically used the initiating mobile device and the target mobile device that include QWERTY keyboards.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lazaridis et al in view of Betzler (US 2003/0126213).

For claim 11, Lazaridis et al specifically do not disclose MSRP. However, **Betzler** from the same or similar fields of endeavor teaches instant messaging communications through the virtual connection utilizes MSRP **(see paragraph 0026-0027 and 0029)**. Thus, it would have

been obvious to the person of ordinary skill in the art at the time of the invention to utilize MSRP as taught by Betzler in the communications network of Lazaridis et al. The MSRP as taught by Betzler can be modified/implemented into the communication network of Lazaridis et al. The motivation for using MSRP is to improve similar devices in the same way.

Response to Arguments

7. Applicant's arguments, filed on April 10, 2009, with respect to **claims 1, 12 and 22** have been considered but are moot in view of the new ground(s) of rejection necessitated by the new limitations, "...***an initiating mobile device and a target mobile device…for the target mobile device…from the target mobile device…wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices***…", added to claims 1 and 12**.** See the above rejection of claims 1-30 for the relevant citations found in Lazaridis et al disclosing the newly added limitations.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liton Miah whose telephone number is (571)270-3124. The examiner can normally be reached on Monday through Friday 7:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571)272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LM

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	US-20030076367-$.DID. OR US-20030217174-$.DID. OR US-20040152477-$.DID. OR US-20050015495-$.DID. OR US-20050058094-$.DID. OR US-20050094625-$.DID. OR US-20050197143-$.DID. OR US-20060126594-$.DID. OR US-7218921-$.DID. OR US-20070112962-$.DID. OR US-20070233732-$.DID.	US-PGPUB; USPAT; USOCR	ADJ	ON	2009/06/18 14:35
S35	173	i$mercury	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 12:52
S36	0	i$mercury and ("455"/$.ccls. or "370"/$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 12:53
S37	6	i$mercury and ((instant adj messag$3) or im)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 13:00
S38	6	i$mercury and ((instant adj (messenger or messag$3)) or im)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 13:15
S39	1071	blackberry and ((instant adj (messenger or messag$3)) or im)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 13:19
S40	46	blackberry and ((instant adj (messenger or messag$3)) or im) with ((peer$to$peer) or (point$to$point) or p2p)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 13:21
S41	46	blackberry and ((instant adj (messenger or messag$3)) or im) with ((peer$to$peer) or (point$to$point) or p2p)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 15:50

S42	13	S41 and (@rlad<"20040405" or @ad<"20040405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 15:50
S43	1207	((instant adj (messenger or messag$3)) or im) with ((peer$to$peer) or (point$to $point) or p2p)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 15:51
S44	489	((instant adj (messenger or messag$3)) or im) with ((peer$to$peer) or (point$to $point) or p2p) and (ip and tcp)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 15:54
S45	463	((instant adj (messenger or messag$3)) or im) with ((peer$to$peer) or (point$to $point) or p2p) and (ip same tcp)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 15:55
S46	266	S45 and (@rlad<"20040405" or @ad<"20040405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 15:56
S47	73	((instant adj (messenger or messag$3)) or im) with ((peer$to$peer) or (point$to $point) or p2p) and (ip same tcp) and (invit$7 with messag$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 16:02
S48	42	S47 and (@rlad<"20040405" or @ad<"20040405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/10 16:02
S49	2	"20050124363".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/18 12:11
S50	2	"20050113118".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/18 12:13
S51	2	"20070249377".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/18 12:14

S52	2	"20080096595".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/18 12:16

6/18/2009 4:22:00 PM
C:\Documents and Settings\lmiah\My Documents\EAST\Workspaces\10817994.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	Art Unit
	Miah, Liton	2617

SEARCHED

Class	Subclass	Date	Examiner
455	466	9/27/2007	Liton Miah
370	313	9/27/2007	Liton Miah
370	395.3	9/27/2007	Liton Miah
Search	Updated	3/15/2008	Liton Miah

SEARCH NOTES

Search Notes	Date	Examiner
EAST (US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB)	9/27/2007	Liton Miah
Consulted with Spe Rafael Perez-Gutierrez	9/27/2007	Liton Miah
Inventorship Search	9/28/2007	Liton Miah
Search Updated	3/15/2008	Liton Miah
Search Updated	12/17/2008	Liton Miah
Consulted with Spe (Rafael Perez-Gutierrez)	12/17/2008	Liton Miah
Search Updated	3/2/2009	Liton Miah
Search Updated	6/10/2009	Liton Miah
Consulted with Spe (Rafael Perez-Gutierrez)	6/18/2009	Liton Miah

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10817994	LIN, DANIEL J.
	Examiner	**Art Unit**
	Miah, Liton	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/28/2007	03/15/2008	12/17/2008	03/02/2009	06/18/2009				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	✓	✓	✓				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	✓	✓	✓	✓				
	8	✓	✓	✓	✓	✓				
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	29	✓	✓	✓	✓	✓				
	30	✓	✓	✓	✓	✓				

PTO/SB/08A (07-06)
Approved for use through 09/30/2006. OMB 0651-0031
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/817,994
Filing Date	April 5, 2004
First Named Inventor	Daniel J. Lin
Art Unit	2617
Examiner Name	Miah, Liton
Attorney Docket Number	LIN/0002

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/L.M./	A1	US 2002/0083127	06-27-2002	AGRAWAL, Anuraag	
	A2	US 2002/0173308	11-21-2002	DORENBOSCH, et al.	
	A3	US 2003/0076367	04-24-2003	BENCZE, et al.	
	A4	US 2003/0217174	11-20-2003	DORENBOSCH, et al.	
	A5	US 2004/0152477	08-05-2004	WU, et al.	
	A6	US 2005/0015495	01-20-2005	FLORKEY, et al.	
	A7	US 2005/0058094	03-17-2005	LAZARIDIS, et al.	
	A8	US 2005/0094625	05-05-2005	BOUAT, Sebastien	
	A9	US 2005/0197143	09-08-2005	LEE, et al.	
	A10	US 2006/0126594	06-15-2006	TU, Guan-Hua	
	A11	US 7,218,921	05-15-2007	MENDIOLA, et al.	
	A12	US 2007/0112962	05-17-2007	LEWONTIN, Steve	
	A13	US 2007/0233732	10-04-2007	PORTER, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature	/Liton Miah/	Date Considered	06/18/2009

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.M./

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 07/06/2009

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EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
07/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	LITON MIAH	2617	

All participants (applicant, applicant's representative, PTO personnel):

(1) *LITON MIAH*.

(2) *Daniel Lin*.

(3)*RAFAEL PEREZ-GUTIERREZ*.

(4)_____.

Date of Interview: *01 July 2009*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Lazaridis et al. (U.S. Patent Application Publication # 2005/0058094 A1)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Liton Miah/ Patent Examiner, Art Unit 2617	/Rafael Pérez-Gutiérrez/ Supervisory Patent Examiner, Art Unit 2617

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

———

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: The Examiner and Mr. Lin discussed the current claim language in view of the teachings of Lazaridis et al.. Specifically, the limitations of "opening a listening software port", "through a page-mode messaging service" and "through the data-packet based communication service" were discussed. The Examiner provided an explanation on how those limitations were read on the teachings of Lazaridis et al.. No agreement was reached and Mr. Lin advised the Examiner that a formal response will be filed on due course.

.

Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)

Approved for use through xx/xx/200x. OMB 0651-00xx

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) LIN/0002

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed Name _____	Application Number 10/817,994	Filed April 5, 2004
	First Named Inventor Daniel J. LIN	
	Art Unit 6700	Examiner Liton Miah

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest.
  See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☒ attorney or agent of record.
  Registration number 47,750
- ☐ attorney or agent acting under 37 CFR 1.34.
  Registration number _____

/Daniel Lin/
Signature

Daniel Lin
Typed or printed name

713-623-4844
Telephone number

July 14, 2009
Date

☒ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/SB/31 (07-06)
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NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket Number (Optional)
LIN/0002

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on _____.

Signature _____

Typed or printed name _____

In re Application of
Daniel J. LIN

Application Number	Filed
10/817,994	April 5, 2004

For PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE

Art Unit	Examiner
6700	Liton Miah

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 540.00

☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ 270.00

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
I have enclosed a duplicate copy of this sheet.

☒ The Director is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 20-0782/LIN/0002/DL..

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 47,750 .

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. _____

/Daniel Lin/
Signature

Daniel Lin
Typed or printed name

713-623-4844
Telephone number

July 14, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel J. Lin	§	Group Art Unit: 6700
Serial No.: 10/817,994	§	Confirmation No.: 2617
Filed: April 5, 2004	§	Examiner: Liton Miah
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL CONFERENCE BRIEF

Dear Sir:

In conjunction with the Pre-Appeal Brief Request for Review filed herewith, Applicant requests a Panel review of the Final Rejection in this matter (see the Final Office Action dated June 24, 2009). Although the remarks herein are focused on specific factual issues raised by the rejection, nothing in this paper is meant to limit the scope of any arguments, either factual or legal, that Applicant may later present in a full appeal brief.

QUESTIONS FOR REVIEW

In a Final Office Action dated June 24, 2009, the Examiner rejected claims 1-3, 5-10, 12-14, 16-23 and 25-30 under 35 U.S.C. §102(e) as being anticipated by Lazaridis et al (U.S. 2005/0058094).

Applicant respectfully submits that the Examiner's position that Lazaridis teaches or suggests the following limitations in independent claim 1 is factually deficient:

(1) **"opening a listening software port for the target mobile device** on the initiating mobile device to receive communications **through the data packet-based communications service,"**

(2) "receiving a response from the target mobile device . . . **at the listening software port** . . . **through the data packet-based communications**

service" when the invitation message is required to be sent through a **"page-mode messaging service,"** and

(3) establishing a **"virtual connection"** between the initiating mobile device and the target mobile device **"through the data-packet based communications service."**

ARGUMENTS SUBMITTED

1. Lazaridis does not mention a "listening software port" at all, let alone a listening software port "for the target device" that receives communications "through the data packet-based communications service."

Claim 1's recitation of opening a listening software port (such as a TCP port in dependent claim 5) on the initiating mobile device has two specific limiting requirements: (1) it is opened **for the target mobile device**, and (2) it is opened to receive communications **through the data-packet based communications service** (such as an GPRS in dependent claim 3). These specific limitations mean that the claimed listening software port cannot be: (1) a default or generic listening software port that is generally open and accessible **to any and all devices**, or (2) opened to receive communications through services that are **not** data packet-based. Lazaridis makes no mention whatsoever of any listening software port at all, let alone a listening software port that is opened for a particular target mobile device and that is used to receive communications through a data packet based communications service.

In an Examiner interview on July 1, 2009, the Examiner acknowledged that opening a listening port is not expressly mentioned in Lazaridis but maintained that opening a listening software port is implicit in paragraphs [0022]-[0023] of Lazaridis and that any mobile device necessarily has to open a listening software port just to operate and communicate with other devices. This assertion is simply factually incorrect and further ignores the express additional limitations that claim 1 has on the listening software port, namely, that it is (1) opened **for the target mobile device**, and (2) opened to receive communications **through the data-packet based communications service**. Paragraphs [0022]-[0023] of Lazaridis simply introduce a well-known computer system environment (e.g., well-known mobile base stations such as cell phones, well-known wireless network standards such as GSM/GPRS and routers and servers capable of well known network protocols, such as TCP/IP) in which Lazaridis's

own claimed methods can operate but does not even describe the steps of these methods. Paragraph [0027], also cited by the Examiner, specifically discusses using a "circuit switched" cell phone call, which, as is well known in the art, is completely contrary to using a "data packet-based communications service" as required by the claim.

It is well-known in the art that any general computer system may open different types of default listening software ports for specific purposes. However, such default listening software ports can only be used for such specific purposes and simply do not satisfy all the additional requirements of Applicant's claimed listening port and cannot be used as required Applicant's claimed steps. For example, a mobile device may support a **default** SMS listening software port opened to receive SMS messages from **all** other devices, but such a default SMS port is neither (1) opened for a specific target mobile device, nor (2) used to receive communications through a data-packet based communications service.[1] Similarly, well-known TCP ports (i.e., in contrast to SMS ports, TCP ports are used to received through a "data-packet based communications service," such as GPRS) are opened as a default to service any and all devices for specific purposes (e.g., FTP, telnet, HTTP, etc.) and simply cannot be used for Applicant's own claimed steps and further do not satisfy the requirement of being opening "for the target mobile device."[2] While mobile devices may generally have the **capability** (and indeed **must** have such a capability for Applicant's claimed invention) to open a listening software port to receive communication through the data-packet based communications services, Applicant submits that no mobile devices simply by default, open such a specific type of listening software port as recited in claim 1 (e.g., a specific TCP port to establish virtual connection between two devices). There must be a

---

[1] Please refer to Wikipedia's entry for "GSM services" for examples of different data transmissions services for a mobile network system. The "Data transmission" subsection of the entry describes three **different types of data transmission** protocols: (i) SMS, a "page mode messaging service" as described in Applicant's claim (ii) GPRS, a "packet switched data transmission protocol" (see Wikipedia's entry for "Packet switching" which equates "packet switching" with "packet mode," "packet-oriented" and **"packet based"** (as used in Applicant's claims), and (iii) "Circuit switched data protocols," such as CSD (Circuit Switched Data). Applicant's claim 1 also distinguishes its underlying data transmission protocols based on these well-known distinctions (i.e., "packet-based" is different from "page-mode' in Applicant's claims).

[2] Examples of well-known TCP ports can be found at Wikipedia's entry for "Well-known ports" which include FTP servers (port 20), telnet server (port 23), and HTTP servers (port 80) Applicant submits, however, that such well-known TCP ports are **not opened by default** on mobile devices because mobile devices do not run servers for data packet based communications services by default.

specific purpose or reason to open such a specific type of listening software port and Lazaridis does not mention any such purpose, and furthermore, the pre-existing technologies and the techniques described therein **simply do not need to open** such a listening software port.

2. Lazaridis does not receive a response through the data-packet based communications service while transmitting the invitation through a page mode messaging service.

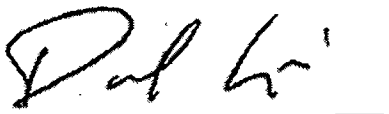
Claim 1 further requires "receiving a response from the target mobile device . . . **at the listening software port** . . . **through the data packet-based communications service**. Additionally, Claim 1 is further limited by the fact that the initial invitation message is required to be sent through a **"page-mode messaging service"** (e.g., SMS) and **not the data packet based communications service** (e.g., GPRS) that the response is received through (see footnote 1 herein). Applicant respectfully submits that the Examiner fails to acknowledge these factual distinctions and that Lazaridis simply fails to teach or suggest this difference in the communication medium used to first send an invitation message and then receive a response. In the paragraph [0024] as cited by the Examiner, Lazaridis simply uses the **same** "existing communications application" to both send an invitation message and receive a response, directly contradicting Applicant's requirements in claim 1. Whether this "existing communications application" is SMS, email, MMS, EMS or any other existing communications application, the underlying mechanism and medium for sending an invitation and receiving a response via such an existing communications application **will be the same** and therefore does not satisfy the distinction of claim 1 in the invitation transmission step (via a page mode messaging service) and the response receiving step (via the data packet-based communications service). Indeed, the fact that Lazaridis utilizes **"existing** communications applications" to initiate communications with another device demonstrates that Lazaridis does not even offer new methods to initiate such communications, as is the core focus of Applicant's own claims.

3. Lazaridis does not teach or suggest establishing a "virtual connection" through "the data packet-based communication service".

Claim 1 also requires "establishing a **virtual connection** through the data packet based communications service." One example of a virtual connection is a TCP connection (see dependent claim 5). Applicant respectfully submits that the Examiner fails to acknowledge the establishment of a "virtual connection" as that term is very well-known and understood in the art (e.g., enabling the transmission of a byte stream between two nodes).[3] Nowhere in Lazaridis is there any mention or suggestion that any virtual connection is ever made. Indeed all the examples of "existing communications applications" in Lazaridis are distinctly **not** virtual connection based applications (i.e., SMS, email, MMS, EMS, etc.). Instead, as clearly taught in Lazaridis, in paragraph [0025], peer-to-peer messages are **discretely** sent back and forth, each time, embedding a PIN in such a discrete message to assist a routing server to route the message. Lazaridi's described messaging techniques are in direct contradiction with the establishment of a the virtual connection, as is well understood in the art, that enables a continuous byte stream to be transmitted between two nodes.

As the foregoing illustrates, Lazaridis fails to teach or suggest each and every limitation of claim 1. Independent claims 12 and 22 recite limitations similar to those discussed in conjunction with claim 1. Therefore, these independent claims and all claims dependent thereupon are allowable for at least the same reasons as allowable claim 1.

Respectfully submitted,



Daniel Lin, Reg. No. 47,750
Patterson & Sheridan, L.L.P.
3040 Post Oak Blvd., Suite 1500
Houston, TX 77056-6582
Telephone: 650.996.1050
Facsimile: 650.330.2314

[3] For an example of description of a "virtual connection," as is well understood in the art, please see Wikipedia's definition of "virtual circuit" (synonymous with "virtual connection," as noted therein) noting that a virtual connection enables a byte steam to be delivered between nodes and mentions TCP and GPRS as examples.

Electronic Patent Application Fee Transmittal

Application Number:	10817994
Filing Date:	05-Apr-2004
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Filer:	Frederick D. Kim./Kristen Neil
Attorney Docket Number:	OJL-1

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	2401	1	270	270
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**270**

Electronic Acknowledgement Receipt

EFS ID:	5701012
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kristen Neil
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	14-JUL-2009
Filing Date:	05-APR-2004
Time Stamp:	18:16:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$270
RAM confirmation Number	4949
Deposit Account	200782
Authorized User	KIM,FREDERICK D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		LIN_0002_ENOA.pdf	357982 17abb129a4d9104d5a7371160fcefe42a0494ba4	yes	7

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Pre-Brief Conference request	1	1
Notice of Appeal Filed	2	2
Miscellaneous Incoming Letter	3	7

Warnings:

Information:

2	Fee Worksheet (PTO-875)	fee-info.pdf	29723 c54fe610299d9e2fac9cb4955d8bdbaa5dd1ac3d	no	2

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Information:

Total Files Size (in bytes):	387705

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 08/26/2009

PATTERSON & SHERIDAN, L.L.P.
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HOUSTON, TX 77056

EXAMINER	
MIAH, LITON	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
08/26/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of Panel Decision from Pre-Appeal Brief Review	Application/Control No.	Applicant(s)/Patent under Reexamination
	10/817,994	LIN, DANIEL J.
	Rafael Pérez-Gutiérrez	Art Unit: 2617

This is in response to the Pre-Appeal Brief Request for Review filed 14 July 2009.

1. ☐ **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

☐ The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
☐ The request does not include reasons why a review is appropriate.
☐ A proposed amendment is included with the Pre-Appeal Brief request.
☐ Other: .

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. ☒ **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

☒ The panel has determined the status of the claim(s) is as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: *1-30*.
Claim(s) withdrawn from consideration: _____.

3. ☐ **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. ☐ **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) *Rafael Pérez-Gutiérrez*. (3)*Charles Appiah*.

(2) *Liton Miah*. (4)_____.

/Rafael Pérez-Gutiérrez/	/Charles Appiah/	/Liton Miah/
Supervisory Patent Examiner, Art Unit 2617	Supervisory Patent Examiner, Art Unit 2617	Patent Examiner, Art Unit 2617

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Daniel J. Lin	§	Group Art Unit: 6700
Serial No.: 10/817,994	§	Confirmation No.: 2617
Filed: April 5, 2004	§	Examiner: Liton Miah
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP APPEAL BRIEF-PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

APPEAL BRIEF

Appellant submits this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 6700 dated June 24, 2009 finally rejecting claims 1-30. The final rejection of claims 1-30 is appealed. This Appeal Brief is believed to be timely since it is being electronically filed prior to one month from the mailing of the Notice of Panel Decision from Pre-Appeal Brief Review, dated August 26, 2009. The fee of $270.00 for filing this brief is being paid by credit card via EFS-Web. Please charge any additional fees that may be required to make this Appeal Brief timely and acceptable to Deposit Account No. 20-0782/LIN/0002/FDK.

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Apple Inc.
Ex. 1004 - Page 406

REAL PARTY IN INTEREST

The real party in interest is Daniel J. Lin residing in San Francisco, California.

Apple Inc.
Ex. 1004 - Page 407

RELATED APPEALS AND INTERFERENCES

Appellant asserts that no other appeals or interferences are known to the Appellant or Appellant's legal representative which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Apple Inc.
Ex. 1004 - Page 408

STATUS OF CLAIMS

Claims 1-30 are pending in the application. Claims 1-30 were originally presented in the application. Claims 1-30 stand finally rejected as discussed below. The final rejections of claims 1-30 are appealed. The pending claims are shown in the attached Claims Appendix.

Apple Inc.
Ex. 1004 - Page 409

STATUS OF AMENDMENTS

All claim amendments have been entered by the Examiner. No amendments to the claims were proposed after the final rejection.

Apple Inc.
Ex. 1004 - Page 410

SUMMARY OF CLAIMED SUBJECT MATTER

Claimed embodiments are directed to methods for enabling two mobile devices to find another within a network without requiring a intermediary server that includes location information for the mobile devices in order to establish a direct connection between the two mobile devices for instant messaging.

A. CLAIM 1- INDEPENDENT

Claim 1 is directed towards a method for establishing session-based instant messaging communications between an initiating mobile device (figure 1, reference 105) and a target mobile device (figure 1, reference 110) that each support a data packet-based communications service (figure 1, references 155 and 160) over a digital mobile network system (figure 1). The method begins by opening a listening software port (paragraph 0013, line 18 referring to "TCP port") for the target mobile device on the initiating mobile device to receive communications through the data packet-based communications service from the target mobile device (figure 2, step 210; paragraph 0013, lines 17-19).

The method continues by transmitting, from the initiating mobile device, an invitation message containing an address (paragraph 0013, line 22, referring to "IP address") and the listening software port (paragraph 0013, line 23, referring to "TCP port")of the initiating mobile device to the target mobile device (figure 2, step 230; paragraph 0013, lines 21-25) through a page-mode messaging service, (paragraph 0013, line 23, referring to "SMS text message") wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number (paragraph 0013, lines 23, referring to "phone number") that is used by the digital mobile network system to locate the target mobile device.

The method continues by receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating mobile device (figure 2, step 270; paragraph 0013, lines 32-33) through the data packet-based communications service (paragraph 0013, lines 30-32, referring to "request to establish a TCP connection . . . to the . . . TCP port") and establishing a virtual connection (figure

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2, step 280; paragraph 0013, line 33 referring to "TCP connection) through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices.

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GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-3, 5-10, 12-14, 16-23 and 25-30 stand rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent Publication No. 2005/0058094 (hereinafter, referred to as "Lazaridis").

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ARGUMENTS

CLAIM 1 IS NOT ANTICIPATED BY LAZARIDIS

Applicant respectfully disagrees with the Examiner's position that Lazaridis teaches or suggests the following limitations in independent claim 1:

a. **"opening a listening software port for the target mobile device** on the initiating mobile device to receive communications **through the data packet-based communications service,"**

b. "receiving a response from the target mobile device . . . **at the listening software port** . . . **through the data packet-based communications service**" when the invitation message is required to be sent through a **"page-mode messaging service,"** and

c. establishing a **"virtual connection"** between the initiating mobile device and the target mobile device **"through the data-packet based communications service."**

A. Lazaridis does not mention a "listening software port" at all, let alone a listening software port "for the target device" that receives communications "through the data packet-based communications service."

Claim 1's recitation of opening a listening software port (such as a TCP port in dependent claim 5) on the initiating mobile device has two specific limiting requirements: (1) it is opened **for the target mobile device**, and (2) it is opened to receive communications **through the data-packet based communications service** (such as an GPRS in dependent claim 3). These specific limitations mean that the claimed listening software port cannot be: (1) a well-known, default or generic listening software port that is generally open and accessible **to any and all devices**, or (2) opened to receive communications through services that are **not** data packet-based. Lazaridis makes no mention whatsoever of any listening software port at all, let alone a listening software port that is opened for a particular target mobile device and that is used to receive communications through a data packet based communications service.

In an Examiner interview on July 1, 2009, the Examiner acknowledged that opening a listening port is not expressly mentioned in Lazaridis but maintained that opening a listening software port is implicit in paragraphs [0022]-[0023] of Lazaridis and

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that any mobile device necessarily has to open a listening software port just to operate and communicate with other devices. This assertion is simply incorrect and further ignores the express additional limitations that claim 1 has on the listening software port, namely, that it is (1) opened **for the target mobile device**, and (2) opened to receive communications **through the data-packet based communications service.**[1] Paragraphs [0022]-[0023] of Lazaridis simply introduce a well-known computer system environment (e.g., well-known mobile base stations such as cell phones, well-known wireless network standards such as GSM/GPRS and routers and servers capable of well known network protocols, such as TCP/IP) in which Lazaridis's own claimed methods can operate but do not even describe the steps of these methods. Paragraph [0027], also cited by the Examiner, specifically discusses using a "circuit switched" cell phone call, which, as is well known in the art, is completely contrary to using a "data packet-based communications service" as required by the claim.[2]

It is well-known in the art that any general computer system may open different types of default or well-known listening software ports for specific purposes. However, such default listening software ports can only be used for such specific purposes and simply do not satisfy all the additional requirements of Applicant's claimed listening port and cannot be used as required Applicant's claimed steps. For example, a mobile device may support a **default** SMS listening software port opened to receive SMS messages from **all** other devices, but such a default SMS port is neither (1) opened for a specific target mobile device, nor (2) used to receive communications through a data-packet based communications service.[3] Similarly, well-known TCP ports (i.e., in contrast to SMS ports, TCP ports are used to received through a "data-packet based communications service," such as GPRS) are opened as a default to service any and all devices for specific purposes (e.g., FTP, telnet, HTTP, etc.) and therefore do not satisfy

---

[1] Please refer to **Annex A** herein for an explanation of a "data-packet based communications" service, such as GPRS, as is well known in the art. As shown in **Annex A**, a "data packet based communications system" ***differs*** from circuit switched data transmissions as well as SMS, a "page mode messaging service," as referred to in claim 1.

[2] Please refer to both **Annex A** and **Annex B** for a description of the difference between circuit switched data transmission and packet based data transmission as is well known in the art.

[3] **Annex A** distinguishes SMS as a type data transmission that is **different** from GPRS, a "data packet based communications system" as referenced in claim 1. Furthermore, **Annex C** describes SMS as "page mode messaging" as used in claim 1 which is distinguished from a "data packet based communications service" as used in claim 1.

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the requirement in claim 1 of being opened "for the target mobile device" and thus cannot be used for Applicant's own claimed steps.[4] While mobile devices may generally have the **capability** (and indeed **must** have such a capability for Applicant's claimed invention) to open a listening software port for the target mobile device to receive communication through the data-packet based communications services, Applicant submits that no mobile devices simply by default, open such a specific type of listening software port as recited in claim 1 (e.g., a specific TCP port to establish a "virtual connection" between two devices). There must be a **specific purpose or reason** to open such a specific type of listening software port and Lazaridis does not mention any such purpose, and furthermore, the pre-existing technologies and the techniques described in Lazaridis **simply do not need to open** such a listening software port.

B. Lazaridis does not receive a response through the data-packet based communications service while transmitting the invitation through a page mode messaging service.

Claim 1 further requires "receiving a response from the target mobile device . . . **at the listening software port** . . . **through the data packet-based communications service**. Additionally, Claim 1 is further limited by the fact that the initial invitation message is required to be sent through a **"page-mode messaging service"** (e.g., SMS) and **not the data packet based communications service** (e.g., GPRS) that the response is received through (see footnote 3 herein, and accompanying Annexes A and C for the well-known distinction between a "data packet-based communications service" and a "page mode messaging service"). Applicant respectfully submits that the Examiner fails to acknowledge these distinctions and that Lazaridis simply fails to teach or suggest this difference in the communication medium used to first send an invitation message and then receive a response. In the paragraph [0024] as cited by the Examiner, Lazaridis simply uses the **same** "existing communications application" to both send an invitation message and receive a response, directly contradicting

[4] Please refer to **Annex D** for examples of well-known TCP ports for well-known Internet services such as FTP servers (port 20), telnet server (port 23), and HTTP servers (port 80) Such well-known TCP ports are **not opened by default** on mobile devices because mobile devices do not run servers for data packet based communications services by default. Furthermore, because such well-known ports are "well-known", they available to any computer desiring to communicate the computer having the opened port and are therefore **not** opened for a specific target mobile device, as required by claim 1.

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Applicant's requirements in claim 1. Whether this "existing communications application" is SMS, email, MMS, EMS or any other "existing" communications application, the underlying mechanism and medium for sending an invitation and receiving a response via such an existing communications application **will be the same** and therefore does not satisfy the distinction of claim 1 in the invitation transmission step (via a page mode messaging service) and the response receiving step (via the data packet-based communications service). Indeed, the fact that Lazaridis utilizes **"existing** communications applications" to initiate communications with another device demonstrates that Lazaridis does not even offer new methods to initiate such communications, as is the core focus of Applicant's own claims.

C. Lazaridis does not teach or suggest establishing a "virtual connection" through "the data packet-based communication service".

Claim 1 also requires "establishing a **virtual connection** through the data packet based communications service." One example of a virtual connection is a TCP connection (see dependent claim 5). Applicant respectfully submits that the Examiner fails to acknowledge the establishment of a "virtual connection" as that term is very well-known and understood in the art (e.g., enabling the transmission of a byte stream between two nodes).[5] Nowhere in Lazaridis is there any mention or suggestion that any virtual connection is ever made. Indeed **all** the examples of "existing communications applications" in Lazaridis are **not virtual connection based applications** (i.e., SMS, email, MMS, EMS, etc.). Instead, as clearly taught in Lazaridis, in paragraph [0025], peer-to-peer messages are **discretely** sent back and forth (i.e., not using a continues byte stream of a "virtual connection"), each time, embedding a PIN in such a discrete message to assist a routing server to route the message. Lazaridis's described messaging techniques are in direct contradiction with the establishment of a "virtual connection" as required by claim 1, as the term is well understood in the art, that enables a continuous byte stream to be transmitted between two nodes.

[5] Please refer to **Annex E** for an example of description of a "virtual connection," as is well understood in the art. Specifically, Wikipedia's definition of "virtual circuit" (synonymous with "virtual connection," as noted therein) notes that a virtual connection enables a byte steam to be delivered between nodes and mentions TCP and GPRS as examples, none of which is taught or suggested in Lazaridis.

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As the foregoing illustrates, Lazaridis fails to teach or suggest each and every limitation of claim 1. Independent claims 12 and 22 recite limitations similar to those discussed in conjunction with claim 1. Therefore, these independent claims and all claims dependent thereupon are allowable for at least the same reasons as allowable claim 1.

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Annex A

Wikipedia Entry for "GSM Services"
Visited August 29, 2009

GSM services

From Wikipedia, the free encyclopedia

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Data transmission [edit]

The GSM standard also provides separate facilities for transmitting digital data. This allows a mobile phone to act like any other computer on the Internet, sending and receiving data via the Internet Protocol.

The mobile may also be connected to a desktop computer, laptop, or PDA, for use as a network interface (just like a modem or ethernet card, but using one of the GSM data protocols described below instead of a PSTN-compatible audio channel or an ethernet link to transmit data). Some GSM phones can also be controlled by a standardised Hayes AT command set through a serial cable or a wireless link (using IrDA or Bluetooth). The AT commands can control anything from ring tones to data compression algorithms.

In addition to general Internet access, other special services may be provided by the mobile phone operator, such as SMS.

Circuit-switched data protocols [edit]

A circuit-switched data connection reserves a certain amount of bandwidth between two points for the life of a connection, just as a traditional phone call allocates an audio channel of a certain quality between two phones for the duration of the call.

Two circuit-switched data protocols are defined in the GSM standard: Circuit Switched Data (CSD) and High-Speed Circuit-Switched Data (HSCSD). These types of connections are typically charged on a per-second basis, regardless of the amount of data sent over the link. This is because a certain amount of bandwidth is dedicated to the connection regardless of whether or not it is needed.

Circuit-switched connections do have the advantage of providing a constant, guaranteed quality of service, which is useful for real-time applications like video conferencing.

General Packet Radio Service (GPRS) [edit]

The General Packet Radio Service (GPRS) is a packet-switched data transmission protocol which was incorporated into the GSM standard in 1997. It is backwards-compatible with systems that use pre-1997 versions of the standard. GPRS does this by sending packets to the local mobile phone mast (BTS) on channels not being used by circuit-switched voice calls or data connections. Multiple GPRS users can share a single unused channel because each of them uses it only for occasional short bursts.

The advantage of packet-switched connections is that bandwidth is only used when there is actually data to transmit. This type of connection is thus generally billed by the kilobyte instead of by the second, and is usually a cheaper alternative for applications that only need to send and receive data sporadically, like instant messaging.

GPRS is usually described as a 2.5G technology; see the main article for more information.

Short Message Service (SMS) [edit]

Main article: Short message service

Short Messages (more commonly known as text messages) has become the most used data application on mobile phones, with 74% of all mobile phone users worldwide already as active users of SMS, or 2.4 billion people by the end of 2007. In many advanced countries, the users have shifted from considering the voice call being the most desired feature of a mobile phone, to considering SMS text messaging as the most desired feature.

SMS text messages may be sent by mobile phone users to other mobile users or external services that accept SMS. The messages are usually sent from mobile devices via the Short Message Service Centre using the MAP protocol.

The SMSC is a central routing hubs for Short Messages. Many mobile service operators use their SMSCs as gateways to external systems, including the Internet, incoming SMS news feeds, and other mobile operators (often using the de facto SMPP standard for SMS exchange).

The SMS standard is also used outside of the GSM system; see the main article for details.

As is well-known and shown here, a "data packet based communications service" as used in claim 1 is a *different data transmission service* than (1) SMS data transmission, a "page mode messaging service" as in claim 1, and (2) circuit based communications service, as distinguished herein.

Annex B

Wikipedia Entry for "Packet switching"
Visited August 29, 2009

Packet switching

From Wikipedia, the free encyclopedia

This article **may require cleanup to meet Wikipedia's quality standards.** Please improve this article if you can. *(July 2007)*

Packet switching is a network communications method that groups all transmitted data, irrespective of content, type, or structure into suitably-sized blocks, called *packets*. The network over which packets are transmitted is a shared network which routes each packet independently from all others and allocates transmission resources as needed. The principal goals of packet switching are to optimize utilization of available link capacity and to increase the robustness of communication. When traversing network adapters, switches and other network nodes, packets are buffered and queued, resulting in variable delay and throughput, depending on the traffic load in the network.

Network resources are managed by statistical multiplexing or dynamic bandwidth allocation in which a physical communication channel is effectively divided into an arbitrary number of logical variable-bit-rate channels or data streams. Each logical stream consists of a sequence of packets, which normally are forwarded by a network node asynchronously using first-in, first-out buffering. Alternatively, the packets may be forwarded according to some scheduling discipline for fair queuing or for differentiated or guaranteed quality of service, such as pipeline forwarding or time-driven priority (TDP). Any buffering introduces varying latency and throughput in transmission. In case of a shared physical medium, the packets may be delivered according to some packet-mode multiple access scheme.

Packet switching contrasts with another principal networking paradigm, circuit switching, a method which sets up a specific circuit with a limited number dedicated connection of constant bit rate and constant delay between nodes for exclusive use during the communication session.

Packet mode (or packet-oriented, packet-based) communication may be utilized with or without intermediate forwarding nodes (packet switches).

As described herein, "packet switching" contrasts "circuit switching."

Contents [hide]

1 History
2 Connectionless and connection-oriented packet switching
3 Packet switching in networks
4 X.25 vs. Frame Relay packet switching
5 See also
6 References
  6.1 Bibliography
7 Further reading
8 External links

Multiplex techniques

Circuit mode (constant bandwidth)
TDM · FDM · WDM
Polarization multiplexing
Spatial multiplexing (MIMO)

Statistical multiplexing (variable bandwidth)
Packet mode · Dynamic TDM
FHSS · DSSS · OFDMA

Related topics
Channel access methods
Media Access Control (MAC)

This box: view · talk · edit

History [edit]

The concept of packet switching was first explored by Paul Baran in the early 1960s, and then independently a few years later by Donald Davies (Abbate, 2000).

Leonard Kleinrock conducted early research in queueing theory which would be important in packet switching, and published a book in the related field of digital message switching (without the packets) in 1961; he also later played a leading role in building and management of the world's first packet switched network, the

As described herein, "packet-based" as used in claim 1 is equivalent to packet mode, packet oriented, or "packet-switching", as used in Annex A in distinguishing packet based communications services from page mode messaging services such as SMS.

Annex C

Specification for SIP IM Requirements
http://tools.ietf.org/html/draft-rosenberg-simple-messaging-requirements-01
Visited August 29, 2009

SIMPLE
Internet-Draft
Expires: August 12, 2004

J. Rosenberg
dynamicsoft
February 12, 2004

Advanced Instant Messaging Requirements for the Session Initiation Protocol (SIP)
draft-rosenberg-simple-messaging-requirements-01

Status of this Memo

This document is an Internet-Draft and is in full conformance with all provisions of Section 10 of RFC2026.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at http://www.ietf.org/ietf/1id-abstracts.txt.

⋮

Introduction

The Session Initiation Protocol (SIP) defines several specifications that support Instant Messaging (IM). The SIP MESSAGE method [2] allows for "page-mode" messaging, offering a service similar to Short Message Service (SMS) in wireless networks. A more advanced capability, called session mode messaging, uses the SIP INVITE method to establish a session whose media type is messaging [8]. This allows for many SIP capabilities to be directly applied to instant messaging, such as conferencing [9].

As is well known and described in an RFC draft of the IETF, a "page mode messaging" service is equivalent to SMS.

Annex D

Wikipedia Entry for "Well known ports"
Visited August 29, 2009

List of TCP and UDP port numbers

From Wikipedia, the free encyclopedia
(Redirected from Well known ports)

In computer networking, the protocols of the Transport Layer of the Internet Protocol Suite, most notably the Transmission Control Protocol ("TCP") and the User Datagram Protocol ("UDP"), but also other protocols, use a numerical identifier for the data structures of the endpoints for host-to-host communications. Such an endpoint is known as a port and the identifier is the port number. The Internet Assigned Numbers Authority (IANA) is responsible for maintaining the official assignments of port numbers for specific uses.[1]

Contents [hide]

1 Table legend
2 Well-known ports: 0–1023
3 Registered ports: 1024–49151
4 Dynamic and/or private ports: 49152–65535
5 See also
6 References
7 External links

Table legend [edit]

Color coding of table entries

Official	Port/application combination is registered with IANA
Unofficial	Port/application combination is **not** registered with IANA
Conflict	Port is in use for multiple applications

Well-known ports: 0–1023 [edit]

Port	Description	Status
0/TCP,UDP	Reserved	Official
1/TCP,UDP	TCP Port Service Multiplexer	Official
2/TCP,UDP	Management Utility	Official
3/TCP,UDP	Compression Process	Official
5/TCP,UDP	Remote Job Entry	Official
7/TCP,UDP	Echo	Official
9/TCP,UDP	Discard	Official
11/TCP,UDP	Active Users	Official
13/TCP,UDP	DAYTIME – (RFC 867)	Official
17/TCP,UDP	Quote of the Day	Official
18/TCP,UDP	Message Send Protocol	Official

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Annex E

Wikipedia Entry for "Virtual circuit"
Visited August 29, 2009

Virtual circuit

From Wikipedia, the free encyclopedia

In telecommunications and computer networks, **a virtual circuit (VC)**, synonymous with **virtual connection** and virtual channel, is a connection oriented communication service that is delivered by means of packet mode communication. After a connection or virtual circuit is established between two nodes or application processes, a bit stream or byte stream may be delivered between the nodes. A virtual circuit protocol hides the division into segments, packets or frames from higher level protocols.

Virtual circuit communication resembles circuit switching, since both are connection oriented, meaning that in both cases data is delivered in correct order, and signalling overhead is required during a connection establishment phase. However, circuit switching provides constant bit rate and latency, while these may vary in a virtual circuit service due to reasons such as:

- varying packet queue lengths in the network nodes,
- varying bit rate generated by the application,
- varying load from other users sharing the same network resources by means of statistical multiplexing, etc.

Many virtual circuit protocols, but not all, provide reliable communication service, by means of data retransmissions due to error detection and automatic repeat request (ARQ).

Contents [hide]

1 Layer 4 virtual circuits
2 Layer 2/3 virtual circuits
3 Examples of protocols that provide virtual circuits
4 Permanent and switched virtual circuits in ATM, frame relay, and X.25
5 References
6 See also

Layer 4 virtual circuits [edit]

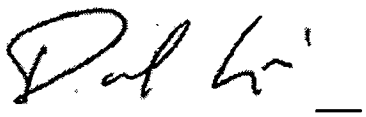
Connection oriented transport layer datalink protocols such as TCP[1][2] may rely on a connectionless packet switching network layer protocol such as IP, where different packets may be routed over different paths, and thus be delivered out of order. However, a virtual circuit[2][3][4] is possible since TCP includes segment numbering and reordering on the receiver side to prevent out-of-order delivery.

As is well known and used in claim 1, a "virtual connection" is synonymous with a virtual circuit and virtual channel to enable a bit stream or byte stream to be delivered between nodes.

CONCLUSION

For the reasons stated above, Appellant respectfully submits that the rejection of claims 1-30 is improper. Reversal of the rejections is respectfully requested.

Respectfully submitted,



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CLAIMS APPENDIX

1. (Previously Presented): A method of establishing session-based instant messaging communications between an initiating mobile device and a target mobile device that each support a data packet-based communications service over a digital mobile network system, the method comprising:

opening a listening software port for the target mobile device on the initiating mobile device to receive communications through the data packet-based communications service from the target mobile device;

transmitting, from the initiating mobile device, an invitation message containing an address and the listening software port of the initiating mobile device to the target mobile device through a page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

receiving, at the initiating mobile device, a response from the target mobile device at the listening software port on the initiating mobile device through the data packet-based communications service; and

establishing a virtual connection through the data packet-based communications service for the session-based instant messaging session between the initiating mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices.

2. (Previously Presented): The method of claim 1 further comprising:

opening a second listening software port on the initiating mobile device to receive invitation messages through the page-mode messaging service;

receiving, at the second software listening port and through the page-mode messaging service, a message from another mobile device inviting the initiating mobile device to establish an instant messaging session, wherein such message contains a second address and a third listening software port of the other mobile device; and

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transmitting a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

3. (Original): The method of claim 1 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

4. (Original): The method of claim 1 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

5. (Previously Presented): The method of claim 1 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

6. (Original): The method of claim 1 wherein the page-mode messaging service is SMS.

7. (Previously Presented) The method of claim 1 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

8. (Original): The method of claim 1 wherein the unique identification number is a telephone number.

9. (Original): The method of claim 1 wherein the unique identification number is a PIN number.

10. (Original): The method of claim 1 wherein the virtual reliable connection is a TCP connection.

11. (Original): The method of claim 10 wherein instant messaging communications through the virtual connection utilizes MSRP.

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12. (Previously Presented) A mobile device enabled to establish session-based instant messaging communications with a target mobile device in a digital mobile network system, the mobile device comprising:

programming means to support a data packet-based communications service over the digital mobile network system;

programming means to support a page-mode messaging service over the digital mobile network system;

programming means to open a listening software port for the target mobile device to receive communication through the data packet-based communications service from the target mobile device;

programming means to send an invitation message containing an address and the listening software port of the mobile device to the target mobile device through the page-mode messaging service, wherein the target mobile device is located by providing to the page-mode messaging service a unique identification number that is used by the digital mobile network system to locate the target mobile device;

programming means to receive a response through the data packet-based communications service from the target mobile device at the listening software port; and

programming means to establish a virtual connection through the data packet-based communications service for the session-based instant messaging communications between the mobile device and the target mobile device, wherein the virtual connection is established without use of a server that handles connection requests from multiple mobile devices.

13. (Previously Presented) The mobile device of claim 12 further comprising:

programming means to open a second listening software port to receive invitation messages through the page-mode messaging service;

programming means to receive, at the second listening software port and through the page-mode messaging service, a message from another mobile device inviting the mobile device to establish an instant messaging session, wherein the message contains a second address and a third listening software port of the other mobile device; and

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programming means to transmit a response to the second address and the third listening software port of the other mobile device through the data packet-based communications service, wherein the response acknowledges the ability to establish a virtual reliable connection.

14. (Original): The mobile device of claim 12 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

15. (Original): The mobile device of claim 12 further comprising a QWERTY keyboard.

16. (Previously Presented): The mobile device of claim 12 wherein the address of the mobile device is an IP address and the listening software port is TCP port.

17. (Original): The mobile device of claim 12 wherein the page-mode messaging service is SMS.

18. (Original): The mobile device of claim 12 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

19. (Original): The mobile device of claim 12 wherein the unique identification number is a telephone number.

20. (Original): The mobile device of claim 12 wherein the unique identification number is a PIN number.

21. (Original): The mobile device of claim 12 wherein the virtual connection is a TCP connection.

22. (Previously Presented): A computer readable storage medium having stored therein a computer program for establishing a session-based instant messaging

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communications between an initiating mobile device and a target mobile device that each supports a data packet-based communications service over a digital mobile network system, the computer program to be executed on the initiating mobile device to carry out all the steps of claim 1.

23. (Previously Presented): The computer readable storage medium of claim 22 wherein the data packet-based communications service is GPRS and the digital mobile network system is GSM.

24. (Previously Presented): The computer readable storage medium of claim 22 wherein the initiating mobile device and the target mobile device include QWERTY keyboards.

25. (Previously Presented): The computer readable storage medium of claim 22 wherein the address of the initiating mobile device is an IP address and the listening software port is a TCP port.

26. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is SMS.

27. (Previously Presented): The computer readable storage medium of claim 22 wherein the page-mode messaging service is a PIN-to-PIN messaging service.

28. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a telephone number.

29. (Previously Presented): The computer readable storage medium of claim 22 wherein the unique identification number is a PIN number.

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30. (Previously Presented): The computer readable storage medium of claim 22 wherein the virtual connection is a TCP connection.

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EVIDENCE APPENDIX

None

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RELATED PROCEEDINGS APPENDIX

None

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Annex A

Wikipedia Entry for "GSM Services"
Visited August 29, 2009

GSM services

From Wikipedia, the free encyclopedia

⋮

Data transmission [edit]

The GSM standard also provides separate facilities for transmitting digital data. This allows a mobile phone to act like any other computer on the Internet, sending and receiving data via the Internet Protocol.

The mobile may also be connected to a desktop computer, laptop, or PDA, for use as a network interface (just like a modem or ethernet card, but using one of the GSM data protocols described below instead of a PSTN-compatible audio channel or an ethernet link to transmit data). Some GSM phones can also be controlled by a standardised Hayes AT command set through a serial cable or a wireless link (using IrDA or Bluetooth). The AT commands can control anything from ring tones to data compression algorithms.

In addition to general Internet access, other special services may be provided by the mobile phone operator, such as SMS.

Circuit-switched data protocols [edit]

A circuit-switched data connection reserves a certain amount of bandwidth between two points for the life of a connection, just as a traditional phone call allocates an audio channel of a certain quality between two phones for the duration of the call.

Two circuit-switched data protocols are defined in the GSM standard: Circuit Switched Data (CSD) and High-Speed Circuit-Switched Data (HSCSD). These types of connections are typically charged on a per-second basis, regardless of the amount of data sent over the link. This is because a certain amount of bandwidth is dedicated to the connection regardless of whether or not it is needed.

Circuit-switched connections do have the advantage of providing a constant, guaranteed quality of service, which is useful for real-time applications like video conferencing.

General Packet Radio Service (GPRS) [edit]

The General Packet Radio Service (GPRS) is a packet-switched data transmission protocol which was incorporated into the GSM standard in 1997. It is backwards-compatible with systems that use pre-1997 versions of the standard. GPRS does this by sending packets to the local mobile phone mast (BTS) on channels not being used by circuit-switched voice calls or data connections. Multiple GPRS users can share a single unused channel because each of them uses it only for occasional short bursts.

The advantage of packet-switched connections is that bandwidth is only used when there is actually data to transmit. This type of connection is thus generally billed by the kilobyte instead of by the second, and is usually a cheaper alternative for applications that only need to send and receive data sporadically, like instant messaging.

GPRS is usually described as a 2.5G technology; see the main article for more information.

Short Message Service (SMS) [edit]

Main article: Short message service

Short Messages (more commonly known as text messages) has become the most used data application on mobile phones, with 74% of all mobile phone users worldwide already as active users of SMS, or 2.4 billion people by the end of 2007. In many advanced countries, the users have shifted from considering the voice call being the most desired feature of a mobile phone, to considering SMS text messaging as the most desired feature.

SMS text messages may be sent by mobile phone users to other mobile users or external services that accept SMS. The messages are usually sent from mobile devices via the Short Message Service Centre using the MAP protocol.

The SMSC is a central routing hubs for Short Messages. Many mobile service operators use their SMSCs as gateways to external systems, including the Internet, incoming SMS news feeds, and other mobile operators (often using the de facto SMPP standard for SMS exchange).

The SMS standard is also used outside of the GSM system; see the main article for details.

As is well-known and shown here, a "data packet based communications service" as used in claim 1 is a *different data transmission service* than (1) SMS data transmission, a "page mode messaging service" as in claim 1, and (2) circuit based communications service, as distinguished herein.

Annex B

Wikipedia Entry for "Packet switching"
Visited August 29, 2009

Packet switching

From Wikipedia, the free encyclopedia

This article **may require cleanup to meet Wikipedia's quality standards.** Please improve this article if you can. *(July 2007)*

Packet switching is a network communications method that groups all transmitted data, irrespective of content, type, or structure into suitably-sized blocks, called *packets*. The network over which packets are transmitted is a shared network which routes each packet independently from all others and allocates transmission resources as needed. The principal goals of packet switching are to optimize utilization of available link capacity and to increase the robustness of communication. When traversing network adapters, switches and other network nodes, packets are buffered and queued, resulting in variable delay and throughput, depending on the traffic load in the network.

Network resources are managed by statistical multiplexing or dynamic bandwidth allocation in which a physical communication channel is effectively divided into an arbitrary number of logical variable-bit-rate channels or data streams. Each logical stream consists of a sequence of packets, which normally are forwarded by a network node asynchronously using first-in, first-out buffering. Alternatively, the packets may be forwarded according to some scheduling discipline for fair queuing or for differentiated or guaranteed quality of service, such as pipeline forwarding or time-driven priority (TDP). Any buffering introduces varying latency and throughput in transmission. In case of a shared physical medium, the packets may be delivered according to some packet-mode multiple access scheme.

Packet switching contrasts with another principal networking paradigm, circuit switching, a method which sets up a specific circuit with a limited number dedicated connection of constant bit rate and constant delay between nodes for exclusive use during the communication session.

Packet mode (or packet-oriented, packet-based) communication may be utilized with or without intermediate forwarding nodes (packet switches).

As described herein, "packet switching" contrasts "circuit switching."

Contents [hide]

1 History
2 Connectionless and connection-oriented packet switching
3 Packet switching in networks
4 X.25 vs. Frame Relay packet switching
5 See also
6 References
  6.1 Bibliography
7 Further reading
8 External links

Multiplex techniques
Circuit mode (constant bandwidth)
TDM · FDM · WDM Polarization multiplexing Spatial multiplexing (MIMO)
Statistical multiplexing (variable bandwidth)
Packet mode · Dynamic TDM FHSS · DSSS · OFDMA
Related topics
Channel access methods Media Access Control (MAC)
This box: view · talk · edit

History [edit]

The concept of packet switching was first explored by Paul Baran in the early 1960s, and then independently a few years later by Donald Davies (Abbate, 2000).

Leonard Kleinrock conducted early research in queueing theory which would be important in packet switching, and published a book in the related field of digital message switching (without the packets) in 1961; he also later played a leading role in building and management of the world's first packet switched network, the

As described herein, "packet-based" as used in claim 1 is equivalent to packet mode, packet oriented, or "packet-switching", as used in Annex A in distinguishing packet based communications services from page mode messaging services such as SMS.

Annex C

Specification for SIP IM Requirements
http://tools.ietf.org/html/draft-rosenberg-simple-messaging-requirements-01
Visited August 29, 2009

SIMPLE
Internet-Draft
Expires: August 12, 2004

J. Rosenberg
dynamicsoft
February 12, 2004

Advanced Instant Messaging Requirements for the Session Initiation Protocol (SIP)
draft-rosenberg-simple-messaging-requirements-01

Status of this Memo

This document is an Internet-Draft and is in full conformance with all provisions of Section 10 of RFC2026.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at http://www.ietf.org/ietf/1id-abstracts.txt.

•••

Introduction

The Session Initiation Protocol (SIP) defines several specifications that support Instant Messaging (IM). The SIP MESSAGE method [2] allows for "page-mode" messaging, offering a service similar to Short Message Service (SMS) in wireless networks. A more advanced capability, called session mode messaging, uses the SIP INVITE method to establish a session whose media type is messaging [8]. This allows for many SIP capabilities to be directly applied to instant messaging, such as conferencing [9].

As is well known and described in an RFC draft of the IETF, a "page mode messaging" service is equivalent to SMS.

Annex D

Wikipedia Entry for "Well known ports"
Visited August 29, 2009

List of TCP and UDP port numbers

From Wikipedia, the free encyclopedia
(Redirected from Well known ports)

In computer networking, the protocols of the Transport Layer of the Internet Protocol Suite, most notably the Transmission Control Protocol ("TCP") and the User Datagram Protocol ("UDP"), but also other protocols, use a numerical identifier for the data structures of the endpoints for host-to-host communications. Such an endpoint is known as a port and the identifier is the port number. The Internet Assigned Numbers Authority (IANA) is responsible for maintaining the official assignments of port numbers for specific uses.[1]

Contents [hide]

1 Table legend
2 Well-known ports: 0–1023
3 Registered ports: 1024–49151
4 Dynamic and/or private ports: 49152–65535
5 See also
6 References
7 External links

Table legend [edit]

Color coding of table entries

Official	Port/application combination is registered with IANA
Unofficial	Port/application combination is **not** registered with IANA
Conflict	Port is in use for multiple applications

Well-known ports: 0–1023 [edit]

Port	Description	Status
0/TCP,UDP	Reserved	Official
1/TCP,UDP	TCP Port Service Multiplexer	Official
2/TCP,UDP	Management Utility	Official
3/TCP,UDP	Compression Process	Official
5/TCP,UDP	Remote Job Entry	Official
7/TCP,UDP	Echo	Official
9/TCP,UDP	Discard	Official
11/TCP,UDP	Active Users	Official
13/TCP,UDP	DAYTIME – (RFC 867)	Official
17/TCP,UDP	Quote of the Day	Official
18/TCP,UDP	Message Send Protocol	Official

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Annex E

Wikipedia Entry for "Virtual circuit"
Visited August 29, 2009

Virtual circuit

From Wikipedia, the free encyclopedia

In telecommunications and computer networks, **a virtual circuit (VC)**, synonymous with **virtual connection** and virtual channel, is a connection oriented communication service that is delivered by means of packet mode communication. After a connection or virtual circuit is established between two nodes or application processes, a bit stream or byte stream may be delivered between the nodes. A virtual circuit protocol hides the division into segments, packets or frames from higher level protocols.

Virtual circuit communication resembles circuit switching, since both are connection oriented, meaning that in both cases data is delivered in correct order, and signalling overhead is required during a connection establishment phase. However, circuit switching provides constant bit rate and latency, while these may vary in a virtual circuit service due to reasons such as:

- varying packet queue lengths in the network nodes,
- varying bit rate generated by the application,
- varying load from other users sharing the same network resources by means of statistical multiplexing, etc.

Many virtual circuit protocols, but not all, provide reliable communication service, by means of data retransmissions due to error detection and automatic repeat request (ARQ).

Contents [hide]

1 Layer 4 virtual circuits
2 Layer 2/3 virtual circuits
3 Examples of protocols that provide virtual circuits
4 Permanent and switched virtual circuits in ATM, frame relay, and X.25
5 References
6 See also

Layer 4 virtual circuits [edit]

Connection oriented transport layer datalink protocols such as TCP[1][2] may rely on a connectionless packet switching network layer protocol such as IP, where different packets may be routed over different paths, and thus be delivered out of order. However, a virtual circuit[2][3][4] is possible since TCP includes segment numbering and reordering on the receiver side to prevent out-of-order delivery.

As is well known and used in claim 1, a "virtual connection" is synonymous with a virtual circuit and virtual channel to enable a bit stream or byte stream to be delivered between nodes.

Electronic Patent Application Fee Transmittal

Application Number:	10817994
Filing Date:	05-Apr-2004
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Filer:	Frederick D. Kim./Kristen Neil
Attorney Docket Number:	OJL-1

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	2401	1	270	270
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**270**

Electronic Acknowledgement Receipt

EFS ID:	5987468
Application Number:	10817994
International Application Number:	
Confirmation Number:	6700
Title of Invention:	Peer-to-peer mobile instant messaging method and device
First Named Inventor/Applicant Name:	Daniel J. Lin
Customer Number:	26290
Filer:	Frederick D. Kim./Kristen Neil
Filer Authorized By:	Frederick D. Kim.
Attorney Docket Number:	OJL-1
Receipt Date:	31-AUG-2009
Filing Date:	05-APR-2004
Time Stamp:	18:05:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$270
RAM confirmation Number	4744
Deposit Account	200782
Authorized User	KIM,FREDERICK D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	LIN_0002_AB.pdf	1139185 a100971962d2768a20e14fa7a4ea3803a521b622	no	33
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	29722 2f0d1d4c9208e119ef9246ccbb9655d537e91d0a	no	2
Warnings:					
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,994	04/05/2004	Daniel J. Lin	OJL-1	6700

26290 7590 09/24/2009

PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 09/24/2009

Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief (37 CFR 41.37)	Application No.	Applicant(s)	
	10/817,994	LIN, DANIEL J.	
	Examiner	Art Unit	
	Liton Miah	2617	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on *31 August 2009* is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file anamended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.

2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).

3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).

4. ☒ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).

5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))

6. ☒ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).

7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).

8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).

9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).

10. ☐ Other (including any explanation in support of the above items):

1.) The summary of claimed subject matter fails to identify and separately refer each independent claim (1, 12 and 22) to the specification by page and line number. The independent claims should not be grouped together. The appellant may wish to only submit the defective section of the brief.
2.) The grounds of rejection and argument section fail to mention the examiners 103(a) rejection of claims 4, 11, 15 and 24 as mentioned in the 06/24/09 final rejection.
3.) The argument section must match the grounds of rejection to be reviewed on appeal, insomuch each heading must correspond with the heading in section VI of the brief. Any claims argued separately should be placed under a subheading identifying the claim by number .

/Timothy Cole/
T.Cole
Patent Appeal Specialist
571 272-0999

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Daniel J. Lin	§	Group Art Unit: 6700
Serial No.: 10/817,994	§	Confirmation No.: 2617
Filed: April 5, 2004	§	Examiner: Liton Miah
For: PEER-TO-PEER MOBILE INSTANT MESSAGING METHOD AND DEVICE	§	

MAIL STOP APPEAL BRIEF-PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

AMENDED APPEAL BRIEF

Appellant submits this Amended Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 6700 dated June 24, 2009 finally rejecting claims 1-30. Appellant has amended the original Appeal Brief filed on August 31, 2009 in response to a Notification of Non-Compliant Appeal Brief dated September 24, 2009 (the "Notice"). The final rejection of independent claims 1, 12 and 22 is appealed. This Amended Appeal Brief is believed to be timely since it is being electronically filed prior to one month from the date of the Notice. While Appellant believes that no additional fees are required, the Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782/LIN/0002/FDK to make this Amended Appeal Brief timely and acceptable to the Office.

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Apple Inc.
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REAL PARTY IN INTEREST

The real party in interest is Daniel J. Lin residing in San Francisco, California.

Apple Inc.
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RELATED APPEALS AND INTERFERENCES

Appellant asserts that no other appeals or interferences are known to the Appellant or Appellant's legal representative which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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STATUS OF CLAIMS

Claims 1-30 are pending in the application. Claims 1-30 were originally presented in the application. Claims 1-30 stand finally rejected in an office action dated June 24, 2009..

The final rejections of independent claims 1, 12 and 22 are appealed. The claims involved in this appeal are shown in the attached Claims Appendix.

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