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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/714,113	08/10/2021	11089450	RMT-PT001.8	4546

3624 7590 07/21/2021
VOLPE KOENIG
30 SOUTH 17TH STREET, 18TH FLOOR
PHILADELPHIA, PA 19103

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 31 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

REMBRANDT MESSAGING TECHNOLOGIES II, LP, Bala CYNWYD, PA;
Graham Merrett, Queensland, AUSTRALIA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16714113	
	Filing Date		2019-12-13	
	First Named Inventor	Graham Merrett		
	Art Unit	2461		
	Examiner Name	Huy Duy Vu		
	Attorney Docket Number	RMT-PT001.8		

	6	20030040300	A1	2003-02-27	Bodic et al.	
	7	20020077131	A1	2002-06-20	Mizell et al.	
	8	20080004051	A1	2008-01-03	Sylvain	
	9	20070197237	A1	2007-08-23	Powell et al.	
Change(s) applied to document, /C.G./ 7/2/2021	10	20070032251	A1	2008-02-08 02/2007	Shaheen	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ^{2]}	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2006/006753	WO	A1	2006-01-19	SK Telecom Corporation		
	2	2006/014603	WO	A2	2006-02-09	Cingular Wireless II LLC		
	3	2004/061583	WO	A2	2004-07-22	Motorola Inc.		
	4	2005/018257	WO	A1	2005-02-24	Nokia Corporation		

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

3624 7590 06/28/2021
VOLPE KOENIG
30 SOUTH 17TH STREET, 18TH FLOOR
PHILADELPHIA, PA 19103

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Brian P. Gordaychik	(Typed or printed name)
/Brian P. Gordaychik/	(Signature)
July 1, 2021	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8	4546

TITLE OF INVENTION: MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	09/28/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHERY, DADY	2461	370-338000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Volpe Koenig

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Rembrandt Messaging Technologies II, LP

Bala Cynwyd, PA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 22-0493

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Brian P. Gordaychik/

Date July 1, 2021

Typed or printed name Brian P. Gordaychik

Registration No. 62,179

Electronic Patent Application Fee Transmittal				
Application Number:		16714113		
Filing Date:		13-Dec-2019		
Title of Invention:		MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
First Named Inventor/Applicant Name:		Graham Merrett		
Filer:		Brian Paul Gordaychik/Shaylynn McNally		
Attorney Docket Number:		RMT-PT001.8		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				
UTILITY APPL ISSUE FEE	1501	1	1200	1200

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1200

Electronic Acknowledgement Receipt	
EFS ID:	43146386
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Shaylynn McNally
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	01-JUL-2021
Filing Date:	13-DEC-2019
Time Stamp:	14:35:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1200
RAM confirmation Number	E202171E42153029
Deposit Account	220493
Authorized User	Shaylynn McNally
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)
 37 CFR 1.20 (Post Issuance fees)
 37 CFR 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	Issue Fee Payment (PTO-85B)	RMT-PT001_8-Issue-fee-Transmittal_EFS.pdf	200755	no	1
			c76cfdca2bec6a9b35cd078d5a2b50f7a2090fcd		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30703	no	2
			dc6a3f51726a667ed6119821f8f212bb077d39eb		

Warnings:

Information:

Total Files Size (in bytes): 231458

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.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

3624 7590 06/28/2021
VOLPE KOENIG
30 SOUTH 17TH STREET, 18TH FLOOR
PHILADELPHIA, PA 19103

EXAMINER

CHERY, DADY

ART UNIT

PAPER NUMBER

2461

DATE MAILED: 06/28/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8	4546

TITLE OF INVENTION: MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	09/28/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

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

By fax, send to: (571)-273-2885

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

3624 7590 06/28/2021
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PHILADELPHIA, PA 19103

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Certificate of Mailing or Transmission

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(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8	4546

TITLE OF INVENTION: MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	09/28/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHERY, DADY	2461	370-338000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8	4546
3624	7590	06/28/2021	EXAMINER	
VOLPE KOENIG			CHERY, DADY	
30 SOUTH 17TH STREET, 18TH FLOOR			ART UNIT	
PHILADELPHIA, PA 19103			PAPER NUMBER	
			2461	
DATE MAILED: 06/28/2021				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. 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 30 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, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/714,113	Applicant(s) Merrett, Graham	
	Examiner DADY CHERY	Art Unit 2461	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/11/2021.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 26-55 renumbered as 1-30. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov**.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☒ All b) ☐ Some *c) ☐ None of the:
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)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	5. ☐ Examiner's Amendment/Comment 6. ☐ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
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/DADY CHERY/ Primary Examiner, Art Unit 2461	
---	--

<i>Search Notes</i> 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

CPC - Searched*		
Symbol	Date	Examiner
H04L12/5601 H04L2012/5603 H04L2012/5604 H04L2012/5607 H04L2012/5608 H04W84/12 H04W88/08 H04J2203/0019 H04L12/18 H04L12/184 H04L12/1845 H04L12/185 H04L2012/ 5642 H04L2012/6416 H04L29/06455 H04L29/08693 H04L29/ 12292 H04L47/15 H04L47/806 H04L49/201 H04L49/203 H04L61/2069 H04L65/4076 H04L67/1044 H04L67/26 H04N21/ 64 H04N21/6405 H04Q2011/0047 H04Q2213/242 H04W4/06 H04L12/64 H04L12/6418 H04L12/66 H04W40/26 H04L29/06 H04L29/06326 H04M7/006 H04Q2213/13176 H04Q2213/13204 H04Q2213/13209 H04Q3/0045 H04L49/101 H04L49/25 H04Q11/0478 H04L29/06027	03/11/2021	DC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventorship, NPL, and Plus Search	03/11/2021	DC
Updated Search	06/17/2021	DC

/DADY CHERY/ Primary Examiner, Art Unit 2461	
---	--

<i>Search Notes</i> 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	H04L12/5601 H04L2012/5603 H04L2012/5604 H04L2012/5607 H04L2012/5608 H04W84/12 H04W88/08 H04J2203/0019 H04L12/18 H04L12/184 H04L12/1845 H04L12/185 H04L2012/5642 H04L2012/6416 H04L29/06455 H04L29/08693 H04L29/12292 H04L47/15 H04L47/806 H04L49/201 H04L49/203 H04L61/2069 H04L65/4076 H04L67/1044 H04L67/26 H04N21/64 H04N21/6405 H04Q2011/0047 H04Q2213/242 H04W4/06 H04L12/64 H04L12/6418 H04L12/66 H04W40/26 H04L29/06 H04L29/06326 H04M7/006 H04Q2213/13176 H04Q2213/13204 H04Q2213/13209 H04Q3/0045 H04L49/101 H04L49/25 H04Q11/0478 H04L29/06027	06/17/2021	DC

/DADY CHERY/ Primary Examiner, Art Unit 2461	
---	--

Issue Classification 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

CPC						
Symbol					Type	Version
H04W	/	4	/	14	F	2013-01-01
H04L	/	51	/	36	I	2013-01-01
H04L	/	51	/	38	I	2013-01-01
H04W	/	4	/	18	I	2013-01-01
H04L	/	69	/	24	I	2013-01-01
H04W	/	8	/	183	I	2013-01-01
H04L	/	51	/	04	A	2013-01-01
H04W	/	84	/	12	A	2013-01-01
H04W	/	88	/	06	A	2013-01-01

CPC Combination Sets					
Symbol				Type	Version
/	/	/	/		

NONE (Assistant Examiner)		Total Claims Allowed: 30	
/DADY CHERY/ Primary Examiner, Art Unit 2461 (Primary Examiner)		O.G. Print Claim(s) 26	O.G. Print Figure 1

Issue Classification 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H04W		4	14

NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/DADY CHERY/ Primary Examiner, Art Unit 2461	17 June 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	26	1

Issue Classification 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	26	10	35	19	44	28	53								
2	27	11	36	20	45	29	54								
3	28	12	37	21	46	30	55								
4	29	13	38	22	47										
5	30	14	39	23	48										
6	31	15	40	24	49										
7	32	16	41	25	50										
8	33	17	42	26	51										
9	34	18	43	27	52										

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 30	
/DADY CHERY/ Primary Examiner, Art Unit 2461 (Primary Examiner) _____ (Date) 17 June 2021		O.G. Print Claim(s) 26	O.G. Print Figure 1

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L43	607	(short near2 message near2 service near2 center SMSC) SAME (short near2 message near2 service SMS) SAME (wireless near2 local near2 area near2 network WLAN)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/04/19 09:52 AM
L47	3	(message AND client AND address AND packet AND MMS AND WLAN AND SMS AND EMS AND format).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2021/06/17 12:40 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N21	200	(short near2 message near2 service near2 center SMSC) SAME (short near2 message near2 service SMS) SAME (wireless near2 local near2 area near2 network WLAN)	(US-PGPUB; USPAT)	OR	ON	ON	2021/04/19 09:52 AM
N22	14	(message AND client AND address AND packet AND switched AND WLAN AND SMS).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2021/04/19 09:52 AM
N23	3	(message AND client AND address AND packet AND MMS AND WLAN AND SMS AND EMS AND format).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2021/06/17 12:40 PM

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/714,113		Filing Date 12/13/2019		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
	(Column 1)	(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)			FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*			X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			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 \$310 (\$155 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				
APPLICATION AS AMENDED - PART II									
	(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* Minus **	=			X \$	=		
	Independent (37 CFR 1.16(h))	* Minus ***	=			X \$	=		
	☐ Application Size Fee (37 CFR 1.16(s))								
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE			
	(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* Minus **	=			X \$	=		
	Independent (37 CFR 1.16(h))	* Minus ***	=			X \$	=		
	☐ Application Size Fee (37 CFR 1.16(s))								
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/VIOLA D ROGERS/			
*** 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.									

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.

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed		PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce	
Electronic Petition Request	TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT		
Application Number	16714113		
Filing Date	13-Dec-2019		
First Named Inventor	Graham Merrett		
Attorney Docket Number	RMT-PT001.8		
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action ☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.			
Owner		Percent Interest	
Rembrandt Messaging Technologies II, LP		100%	
<p>The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)</p> <p>10893395</p> <p>as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.</p> <p>In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:</p> <ul style="list-style-type: none"> - expires for failure to pay a maintenance fee; - is held unenforceable; - is found invalid by a court of competent jurisdiction; - is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321; - has all claims canceled by a reexamination certificate; - is reissued; or - is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer. <p>☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.</p>			

☐ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status:	
☐ Small Entity ☐ Micro Entity ☒ Regular Undiscounted	
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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES	
I certify, in accordance with 37 CFR 1.4(d)(4) that I am:	
☒ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number <u>62179</u>	
☐ A sole inventor	
☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application	
☐ A joint inventor; all of whom are signing this request	
Signature	/Brian P. Gordaychik/
Name	Brian P. Gordaychik

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
 Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal				
Application Number:		16714113		
Filing Date:		13-Dec-2019		
Title of Invention:		MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
First Named Inventor/Applicant Name:		Graham Merrett		
Filer:		Brian Paul Gordaychik/Shaylynn McNally		
Attorney Docket Number:		RMT-PT001.8		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	170	170
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				170

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 16714113

Filing Date: 13-Dec-2019

Applicant/Patent under Reexamination: Merrett

Electronic Terminal Disclaimer filed on May 11, 2021

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	42689307
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Shaylynn McNally
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	11-MAY-2021
Filing Date:	13-DEC-2019
Time Stamp:	16:42:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$170
RAM confirmation Number	E20215AG41561303
Deposit Account	220493
Authorized User	Shaylynn McNally
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)
 37 CFR 1.20 (Post Issuance fees)
 37 CFR 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	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33584	no	2
			9a68e20eb336417035ead92e0a887bf08e70ad62		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30599	no	2
			ac5008e847c291ee4a6b255b85c54ec8bffa85d8		

Warnings:

Information:

Total Files Size (in bytes):	64183
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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.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

Rembrandt Messaging Technologies II, LP

Application No.: 16/714,113

Confirmation No.: 4546

Filed: December 13, 2019

For: MESSAGING SERVICE IN A
WIRELESS COMMUNICATIONS NETWORK

Group: 2461

Examiner: Dady Chery

Our File: RMT-PT001.8

Date: May 11, 2021

RESPONSE PURSUANT TO 37 C.F.R. §1.111

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

This Response and Terminal Disclaimer are being timely filed in response to the Non-Final Office Action dated March 16, 2021.

Please amend the application without prejudice or disclaimer as follows:

Electronic Acknowledgement Receipt	
EFS ID:	42689164
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Shaylynn McNally
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	11-MAY-2021
Filing Date:	13-DEC-2019
Time Stamp:	16:37:31
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		RMT-PT001_8-NFOA-Response-EFS.pdf	168965	yes	14
			68cc8a5431e2833d56bc3a6244b9829ea67678dc		

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Applicant Arguments/Remarks Made in an Amendment		13	14
Claims		2	12
Amendment/Req. Reconsideration-After Non-Final Reject		1	1

Warnings:

Information:

Total Files Size (in bytes):	168965
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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.

REMARKS/ARGUMENTS

After the foregoing Amendment, claims 26-55 are currently pending in this application. Claims 26, 28, 31, 33-34, 36, 39-40, 48-50 are amended.

Request for an Interview

If any of the claims submitted herewith will be rejected by the Examiner, the Applicant respectfully requests a telephonic interview.

Double Patenting Rejection

Claims 26-55 are rejected under the judicially created doctrine of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 10,893,395. A Terminal Disclaimer is submitted herewith to overcome the nonstatutory double patenting rejection. Accordingly, withdrawal of the nonstatutory double patenting rejection is respectfully requested.

Applicant: Rembrandt Messaging Technologies II, LP
Application No.: 16/714,113

Conclusion

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephonic interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing, the Applicant respectfully submit that the present application, including claims 26-55, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

**Rembrandt Messaging
Technologies II, LP**

By /Brian P. Gordaychik/
Brian P. Gordaychik
Registration No. 62,179

Volpe Koenig
30 South 17th Street
Philadelphia, PA 19103-4009
Telephone: (215) 568-6400
Facsimile: (215) 568-6499

BPG/sem
Enclosure(s)

Amendments to the Claims:

This listing of the claims will replace all prior versions of the claims in the application:

1-25. (Cancelled)

26. (Currently amended) A method comprising:

receiving a first message, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a short message service (SMS) format;

subscribing, by the first mobile wireless device, to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station;

~~retrieving, by the first mobile wireless device, information corresponding to at least one mobile phone number of the second mobile wireless device;~~

transmitting, by the first mobile wireless device, after the subscribing, a request including at least ~~the~~ information corresponding to ~~the~~ at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving, by the first mobile wireless device, a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

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formatting a second message in accordance with a message format of the service, ~~based at least in part on~~ subsequent to the subscribing being successful and based at least in part on the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

27. (Previously Presented) The method of claim 26, further comprising:
formatting the second message for transmission over a wireless personal area network (WPAN).

28. (Currently amended) The method of claim 26, further comprising:
~~wherein~~ formatting the second message ~~is formatted~~ for transmission over a wireless local area network (WLAN).

29. (Previously Presented) The method of claim 26, further comprising:
transmitting, after a change of the first mobile wireless device to a new handset, information indicating that subscribers of the service should no longer be formatting messages of the service for the first mobile wireless device.

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30. (Previously Presented) The method of claim 26, wherein the formatting the second message is further based at least in part upon a status indicating that an undelivered message parameter has not been exceeded.

31. (Currently amended) The method of claim 26, further comprising:
~~receiving~~displaying, by the first mobile wireless device, in a single interface, the second message and an MMS message.

32. (Previously Presented) The method claim 26, further comprising:
authenticating a mobile phone number of the first mobile wireless device to the service prior to receiving the response.

33. (Currently amended) The method of claim 31, wherein the single interface provides an option to add to a message, a voice attachment for subsequent playback by the second mobile wireless device, after the subscribing;

wherein the single interface does not provide ~~an~~ the option to add to a message, a voice attachment for subsequent playback by the second mobile wireless device, before the subscribing.

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34. (Currently amended) A method performed by a first mobile wireless device, the method comprising:

receiving a first message, from a second mobile wireless device, wherein the first message is formatted according to a short message service (SMS) format;

subscribing to a service for transmitting and receiving packet switched messages, via the Internet;

~~retrieving information corresponding to at least one mobile phone number of the second mobile wireless device;~~

transmitting a request, after the subscribing, including at least ~~the~~ information corresponding to ~~the~~ at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

formatting a second message in accordance with a message format of the service, subsequent to the subscribing and based at least in part on ~~the subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;~~

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

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wherein the first message is received prior to the subscribing.

35. (Previously Presented) The method of claim 34, wherein at the time of transmitting the request, the first mobile wireless device does not have in memory a user name or email address associated with the second mobile wireless device.

36. (Currently amended) The method of claim 34, further comprising: formatting wherein the second message is formatted for transmission over a wireless local area network (WLAN).

37. (Previously Presented) The method of claim 34, wherein the information corresponding to at least one mobile phone number of the second mobile wireless device is retrieved from the first message.

38. (Previously Presented) The method of claim 34, further comprising:
receiving presence information associated with the second mobile wireless device after the subscribing; and
displaying the presence information associated with the second mobile wireless device.

39. (Currently amended) The method of claim 34, further comprising:

- 6 -

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receiving an over the air (OTA) configuration message, wherein the OTA configuration message includes at least one parameter for establishing a server connection with a server of the service.

40. (Currently amended) A method comprising:

receiving a first message, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a multimedia message service (MMS) format;

subscribing, by the first mobile wireless device, to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station;

~~retrieving, by the first mobile wireless device, information corresponding to at least one mobile phone number of the second mobile wireless device;~~

transmitting, by the first mobile wireless device, after the subscribing, a request including at least ~~the~~ information corresponding to ~~the~~ at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving, by the first mobile wireless device, a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

formatting a second message in accordance with a message format of the

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service, subsequent to the subscribing and based at least in part on ~~the subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;~~

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

41. (Previously Presented) The method of claim 40, further comprising:

formatting the second message is for transmission over a wireless personal area network (WPAN).

42. (Previously Presented) The method of claim 40, further comprising:

retrieving information representative of at least one electronic mail (email) address corresponding to a third mobile wireless device; wherein the third mobile wireless device is a wireless device of a third subscriber of the service.

43 (Previously Presented) The method of claim 42, further comprising:

transmitting a message to the second mobile wireless device and to the third mobile wireless device, via the service.

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44. (Previously Presented) The method of claim 40, further comprising:
transmitting, by the first mobile wireless device, a short message service (SMS)
message for authentication to the service.

45. (Previously Presented) The method of claim 40, wherein the first
mobile wireless device is authenticated to the service via SMS.

46. (Previously Presented) The method of claim 40, further comprising:
receiving, in a single interface, the second message and an SMS message;
wherein the single interface provides an option to add a voice attachment for
subsequent playback by the second mobile wireless device, after the subscribing.

47. (Previously Presented) The method of claim 40, further comprising:
transmitting, via hypertext transfer protocol, after a change of the first mobile
wireless device to a new handset, information indicating that subscribers of the
service should no longer be formatting messages of the service for the first mobile
wireless device.

48. (Currently amended) The method of claim 46, further comprising:
displaying an option to add one or more attachments, based at least in part on
the response indicating that the mobile wireless device corresponds to a subscriber of

~~the service.~~

49. (Currently amended) A method performed by a first mobile wireless device, the method comprising:

receiving a first message, from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a multimedia message service (MMS) format;

subscribing to a service for transmitting and receiving packet switched messages, via the Internet;

~~retrieving information corresponding to at least one mobile phone number of the second mobile wireless device;~~

transmitting a request, after the subscribing, including at least ~~the~~ information corresponding to ~~the~~ at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

formatting a second message in accordance with a message format of the service, based at least in part on the ~~subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;~~

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wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

50. (Currently amended) The method of claim 49, further comprising: formatting wherein the second message is formatted for transmission over a wireless local area network (WLAN); and displaying an option to add, to a message being created, a voice attachment for subsequent playback by the second mobile wireless device, after the subscribing; wherein the option is not displayed before the subscribing.

51. (Previously Presented) The method of claim 49, wherein at the time of transmitting the request, the first mobile wireless device does not have in memory a user name or email address associated with the second mobile wireless device.

52. (Previously Presented) The method of claim 49, further comprising: registering a user name or email address with the service.

53. (Previously Presented) The method of claim 49, further comprising: receiving an indication that the mobile phone number of the second mobile

wireless device is authenticated to the service.

54. (Previously Presented) The method of claim 49, further comprising:
transmitting, by the first mobile wireless device, an indication that a user of
the first mobile wireless device has changed a handset.

55. (Previously Presented) The method of claim 49, wherein the
subscribing includes transmitting an SMS message for authentication to the service.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/714,113		Filing Date 12/13/2019		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
	(Column 1)	(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)			FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*			x \$100 =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			x \$460 =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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			
APPLICATION AS AMENDED - PART II									
	(Column 1)		(Column 2)	(Column 3)					
AMENDMENT	05/11/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	* 30	Minus	** 30	= 0			x \$ 100 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0			x \$ 480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		0	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	*	Minus	**	=			x \$ 0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=			x \$ 0 =	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/VIOLA D ROGERS/			
*** 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.									

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.**

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**Courtesy Reminder for
Application Serial No: 16/714,113**

Attorney Docket No: RMT-PT001.8

Customer Number: 3624

Date of Electronic Notification: 03/16/2021

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8	4546
3624	7590	03/16/2021	EXAMINER	
Volpe Koenig			CHERY, DADY	
30 SOUTH 17TH STREET, 18TH FLOOR				
PHILADELPHIA, PA 19103				
			ART UNIT	PAPER NUMBER
			2461	
			NOTIFICATION DATE	DELIVERY MODE
			03/16/2021	ELECTRONIC

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 the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eoffice@volpe-koenig.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 26-55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 10,893,395. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim(s) 1-30 of U.S. Patent No. 10,893,395 contain(s) every element of claims 26-55 of the instant application and as such anticipate(s) claim(s) 26-55 of the instant application.

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DADY CHERY whose telephone number is (571)270-1207. The examiner can normally be reached on M to T, 8 am to 5pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 571-272-3155. 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.

/DADY CHERY/
Primary Examiner, Art Unit 2461

<i>Notice of References Cited</i>	Application/Control No. 16/714,113		Applicant(s)/Patent Under Reexamination Merrett, Graham	
	Examiner DADY CHERY		Art Unit 2461	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-5729544-A	03-1998	Lev; Valy	H04L29/06	370/352
*	B	US-6678524-B1	01-2004	Hansson; Rolf	H04W72/048	370/338
	C					
	D					
	E					
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	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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.

<i>Index of Claims</i> 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS									
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47									
CLAIM		DATE							
Final	Original	03/11/2021							
	26	✓							
	27	✓							
	28	✓							
	29	✓							
	30	✓							
	31	✓							
	32	✓							
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	54	✓							
	55	✓							

<i>Search Notes</i> 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

CPC - Searched*		
Symbol	Date	Examiner
H04L12/5601 H04L2012/5603 H04L2012/5604 H04L2012/5607 H04L2012/5608 H04W84/12 H04W88/08 H04J2203/0019 H04L12/18 H04L12/184 H04L12/1845 H04L12/185 H04L2012/ 5642 H04L2012/6416 H04L29/06455 H04L29/08693 H04L29/ 12292 H04L47/15 H04L47/806 H04L49/201 H04L49/203 H04L61/2069 H04L65/4076 H04L67/1044 H04L67/26 H04N21/ 64 H04N21/6405 H04Q2011/0047 H04Q2213/242 H04W4/06 H04L12/64 H04L12/6418 H04L12/66 H04W40/26 H04L29/06 H04L29/06326 H04M7/006 H04Q2213/13176 H04Q2213/13204 H04Q2213/13209 H04Q3/0045 H04L49/101 H04L49/25 H04Q11/0478 H04L29/06027	03/11/2021	DC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventorship, NPL, and Plus Search	03/11/2021	DC

/DADY CHERY/ Primary Examiner, Art Unit 2461	
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<i>Search Notes</i> 	Application/Control No. 16/714,113	Applicant(s)/Patent Under Reexamination Merrett, Graham
	Examiner DADY CHERY	Art Unit 2461

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/DADY CHERY/ Primary Examiner, Art Unit 2461	
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Bibliographic Data

Application No: 16/714,113

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged:

/DADY CHERY/

Examiner's Signature

Initials

Title:

MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/13/2019	370	2461	RMT-PT001.8
RULE			

APPLICANTS

REMBRANDT MESSAGING TECHNOLOGIES II, LP, Bala CYNWYD, PA,

INVENTORS

Graham Merrett, Queensland, AUSTRALIA

CONTINUING DATA

This application is a CON of 15966965 04/30/2018ABN

15966965 is a CON of 15011000 01/29/2016ABN

15011000 is a CON of 14307166 06/17/2014ABN

14307166 is a CON of 13762347 02/07/2013 PAT 8918127

13762347 is a CON of 12452883 07/07/2010 PAT 8401576

12452883 is a 371 of PCT/AU2008/001043 07/18/2008

FOREIGN APPLICATIONS

AUSTRALIA AU2007903979 07/24/2007

AUSTRALIA AU2007906230 11/13/2007

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01/07/2020

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UNITED STATES

FILING FEE RECEIVED

\$2,220

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L8	23155	(370/310.2,312,352-356).ccls.	(US-PGPUB ; USPAT)	OR	ON	ON	2017/06/11 04:06 PM
L9	17020	(455/412,412.2,414.1,418,486).ccls.	(US-PGPUB ; USPAT)	OR	ON	ON	2017/06/11 04:06 PM
L10	115716	(H04L12/5601 H04L2012/5603 H04L2012/5604 H04L2012/5607 H04L2012/5608 H04W84/12 H04W88/08 H04J2203/0019 H04L12/18 H04L12/184 H04L12/1845 H04L12/185 H04L2012/5642 H04L2012/6416 H04L29/06455 H04L29/08693 H04L29/12292 H04L47/15 H04L47/806 H04L49/201 H04L49/203 H04L61/2069 H04L65/4076 H04L67/1044 H04L67/26 H04N21/64 H04N21/6405 H04Q2011/0047 H04Q2213/242 H04W4/06 H04L12/64 H04L12/6418 H04L12/66 H04W40/26 H04L29/06 H04L29/06326 H04M7/006 H04Q2213/13176 H04Q2213/13204 H04Q2213/13209 H04Q3/0045 H04L49/101 H04L49/25 H04Q11/0478 H04L29/06027).CPC.	(US-PGPUB ; USPAT)	OR	ON	ON	2017/06/11 04:06 PM
L11	600	L8 and L9	(US-PGPUB ; USPAT)	OR	ON	ON	2017/06/11 04:06 PM
L12	149	L10 and L11	(US-PGPUB ; USPAT)	OR	ON	ON	2017/06/11 04:06 PM
L13	12	(merrett near2 graham).in.	(US-PGPUB ; USPAT)	OR	ON	ON	2017/06/11 04:06 PM
L17	8	(message and client and address and packet and switched and WLAN and SMS).clm.	(US-PGPUB ; USPAT)	OR	ON	ON	2018/01/21 06:01 PM

L31	11	(message AND client AND address AND packet AND switched AND WLAN AND SMS).clm.	(US-PGPUB ; USPAT ; USOCR ; FPRS ; EPO ; JPO ; DERWENT ; IBM_TDB)	OR	ON	ON	2020/10/09 01:10 PM
L36	129	(short near2 message near2 service near2 center SMSC) SAME (short near2 message near2 service SMS) SAME (wireless near2 local near2 area near2 network wlan) SAME (subscribers device user) SAME (list\$3 database table)	(US-PGPUB ; USPAT ; USOCR ; FIT (AU , AP , AT , CA , CH , CN , DD , DE , EA , EP , ES , FR , GB , JP , KR , OA , RU , SU , WO) ; FPRS ; EPO ; JPO ; DERWENT ; IBM_TDB)	OR	ON	ON	2021/02/03 12:02 PM
L37	562	(short near2 message near2 service near2 center SMSC) SAME (short near2 message near2 service SMS) SAME (wireless near2 local near2 area near2 network wlan)	(US-PGPUB ; USPAT ; USOCR ; FIT (AP , AT , AU , CA , CH , CN , DD , DE , EA , EP , ES , FR , GB , JP , KR , OA , RU , SU , WO) ; FPRS ; EPO ; JPO ; DERWENT ; IBM_TDB)	OR	ON	ON	2021/02/03 12:02 PM
L39	200	L37 AND L10	(US-PGPUB ; USPAT ; USOCR ; FIT (AP , AT , AU , CA , CH , CN , DD , DE , EA , EP , ES , FR , GB , JP , KR , OA , RU , SU , WO) ; FPRS ; EPO ; JPO ; DERWENT ; IBM_TDB)	OR	ON	ON	2021/02/03 12:02 PM
L40	10	L37 AND L9	(US-PGPUB ; USPAT ; USOCR ; FIT (AP , AT , AU , CA , CH , CN , DD , DE , EA , EP , ES , FR , GB , JP , KR , OA , RU , SU , WO) ; FPRS ; EPO ; JPO ; DERWENT ; IBM_TDB)	OR	ON	ON	2021/02/03 12:02 PM
L41	3	"20170367120"	(US-PGPUB ; USPAT ; USOCR ; FIT (AU , AP , AT , CA , CH , CN , DD , DE , EA , EP , ES , FR , GB , JP , KR , OA , RU , SU , WO) ; FPRS ; EPO ; JPO ; DERWENT ; IBM_TDB)	OR	ON	ON	2021/02/03 02:02 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N14	5	(merrett near2 graham).in.	(USPAT)	OR	ON	ON	2017/06/11 04:06 PM
N19	4	(message and client and address and packet and switched and WLAN and SMS).clm.	(USPAT)	OR	ON	ON	2018/01/21 06:01 PM
N20	11	(message AND client AND address AND packet AND switched AND WLAN AND SMS).clm.	(US-PGPUB ; USPAT)	OR	ON	ON	2020/10/09 01:10 PM

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Doc description: Information Disclosure Statement (IDS) Filed

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	Filing Date	2019-12-13
	First Named Inventor	Graham Merrett
	Art Unit	2461
	Examiner Name	Huy Duy Vu
	Attorney Docket Number	RMT-PT001.8

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6987985	B2	2006-01-17	Purkayastha et al.	
	2	7277724	B2	2007-10-02	Jones et al.	
	3	8060566	B2	2011-11-15	Appleman	
	4	6707472	B1	2004-03-16	Grauman et al.	
	5	6678524	B1	2004-01-13	Hansson et al.	
	6	7085812	B1	2006-08-01	Sherwood	
	7	7171190	B2	2007-01-30	Ye et al.	
	8	7298714	B2	2007-11-20	Foster	

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9	7600031	B2	2009-10-06	Toutonghi	
10	7751536	B1	2010-07-06	Abramson et al.	
11	8412846	B2	2013-04-02	Shao et al.	
12	5729544	A	1998-03-17	Lev et al.	

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	1	20060018290	A1	2006-01-26	Zhao	
	2	20100131858	A1	2010-05-27	Schultz et al.	
	3	20090305729	A1	2009-12-10	Bennett	
	4	20060167849	A1	2006-07-27	Marcus et al.	
	5	20060056309	A1	2006-03-16	Maanitty	

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6	20030040300	A1	2003-02-27	Bodic et al.
7	20020077131	A1	2002-06-20	Mizell et al.
8	20080004051	A1	2008-01-03	Sylvain
9	20070197237	A1	2007-08-23	Powell et al.
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	1	2006/006753	WO	A1	2006-01-19	SK Telecom Corporation		
	2	2006/014603	WO	A2	2006-02-09	Cingular Wireless II LLC		
	3	2004/061583	WO	A2	2004-07-22	Motorola Inc.		
	4	2005/018257	WO	A1	2005-02-24	Nokia Corporation		

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	5	20060077401	KR	A	2006-07-05	LG Electronics Inc.	* English abstract and copy of patent in Korean provided.	
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	1	LEI ET AL., "Context-Aware Unified Communication", Proceedings of the 2004 IEEE International Conference on Mobile Data Management, pgs. 1-11 (2004).	
	2	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Defendant's Response to the Federal Patent Court – In the Nullity action of Apple Retail Germany GmbH versus Rembrandt Messaging Technologies, LP concerning European patent EP 2 177 072 (60 2008 022 036)", Docket number (FPC): 5 Ni 22/16 (EP), Federal Patent Court, Munich Germany (October 25, 2016).	
	3	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Summons for a hearing – In the proceedings concerning the patent EP 2 177 072", Docket number (FPC): 5 Ni 22/16 (EP), Federal Patent Court, Munich Germany (September 14, 2017).	
	4	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Reply to Grounds of Objection of the Assignee", Docket number (FPC): 5 Ni 22/16 (EP), European Patent: EP 2 177 072, Federal Patent Court, Munich Germany (July 27, 2017).	
	5	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Response to the Preliminary Opinion of the Federal Patent Court", Docket number (FPC): 5 Ni 22/16 (EP), In the proceedings concerning the patent EP 2 177 072, Federal Patent Court, Munich Germany (November 13, 2017).	

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Name/Print	Brian P. Gordaychik	Registration Number	62,179

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	Filing Date	2019-12-13
	First Named Inventor	Merrett
	Art Unit	2400
	Examiner Name	William R. Korzuch
	Attorney Docket Number	RMT-PT001.8

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	1	2003088154	KR	A	2003-11-19	KIM JUN YUN		×
	2	200141477	WO	A1	2001-06-07	ARREO COMM CO LTD		☐
	3	2004008336	WO	A1	2004-01-22	BLACKBERRY LTD		☐

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	4	2004052033	WO	A1	2004-06-17	PHILIPS KONINKLL NV	☐
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	1	ANGERER, "IP-Enabled Communication – The Future of Voice," (2005).					
	2	AOL MOBILE SERVICES, "Full Service Mobile IM Using Text Messaging; Mobile Instant Messaging for the AOL Buddy List® Feature and AOL Instant Messenger™ Service," (2003).					
	3	EUROPEAN TELECOMMUNICATION STANDARDS INSTITUTE, "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 2 (3GPP TS 23.060 version 3.6.0 Release 1999).					
	4	FALSTROM ET AL., "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)," Network Working Group, RFC 3761 (April 2004).					
	5	HUSTON, "Lord of the Numbers," The ISP Column, Internet Society (July 2003).					
	6	NETPLANET.ORG, "Instant Messaging," (January 13, 2007) available at https://web.archive.org/web/20070113213800/www.netplanet.org/dienste/im.shtml (last visited October 16, 2020).					
	7	Screenshots from Focus-Online Magazine referring to the 10 Best Mobile Phones (June 21, 2007).					

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8	TECH-RECIPES.COM, "Send SMS Text Messages From AIM," (June 18, 2007) available at https://web.archive.org/web/20070618171355/http://www.tech-recipes.com/instant_messaging_tips116.html (last visited October 16, 2020).
9	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; Support of SMS and MMS over generic 3GPP IP access (Release 7)," 3GPP TR 23.804 V7.1.0 (September 2005).
10	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; Multimedia Messaging Service (MMS); Stage 1 (Release 7)," 3GPP TS 22.140 V7.0.0 (June 2007).
11	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; Services Aspects; Stage 1 Multimedia Messaging Service (3G TS 22.140 version 0.1.0)," 3GPP TS 22.140 V0.1.0 (July 1999).
12	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2 (Release 7)," 3GPP TS 23.060 V7.4.0 (March 2007).
13	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2 (Release 7)," 3GPP TS 23.060 V7.7.0 (June 2008).
14	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2 (Release 8)," 3GPP TS 23.060 V8.1.0 (June 2008).
15	VERIZON WIRELESS, "How to Use Guide: Mobile IM," (2005).
16	WIKIPEDIA, "General Packet Radio Service," (July 23, 2007).
17	WIKIPEDIA, "Home Location Register (HLR)," subsection of article on Network Switching Subsystem, (July 19, 2007).
18	WIKIPEDIA, "Instant Messaging," (July 6, 2007).†

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	Examiner Name	William R. Korzuch	
	Attorney Docket Number	RMT-PT001.8	

19	WIKIPEDIA, "Presence Information," (June 6, 2007).
20	WIKIPEDIA, "Sony Ericsson T68i," (June 25, 2007).
21	WIKIPEDIA, "Telephone number mapping," (June 27, 2007).
22	WIKIPEDIA, "Wi-Fi," (July 23, 2007).
23	SCHILLER, Mobile Communications, Addison-Wesley Publishers, ISBN 9780321123817 (1999).

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Signature	/Brian P. Gordaychik/	Date (YYYY-MM-DD)	2020-11-02
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16714113
	Filing Date	2019-12-13
	First Named Inventor	Merrett
	Art Unit	2400
	Examiner Name	William R. Korzuch
	Attorney Docket Number	RMT-PT001.8

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	2	200141477	WO	A1	2001-06-07	ARREO COMM CO LTD		☐
	3	2004008336	WO	A1	2004-01-22	BLACKBERRY LTD		☐

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4	2004052033	WO	A1	2004-06-17	PHILIPS KONINKLL NV	☐
5	2004056137	WO	A1	2004-07-01	NOKIA TECHNOLOGIES OY	☐

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	ANGERER, "IP-Enabled Communication – The Future of Voice," (2005).	
	2	AOL MOBILE SERVICES, "Full Service Mobile IM Using Text Messaging; Mobile Instant Messaging for the AOL Buddy List® Feature and AOL Instant Messenger™ Service," (2003).	
	3	EUROPEAN TELECOMMUNICATION STANDARDS INSTITUTE, "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 2 (3GPP TS 23.060 version 3.6.0 Release 1999).	
	4	FALSTROM ET AL., "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)," Network Working Group, RFC 3761 (April 2004).	
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	6	NETPLANET.ORG, "Instant Messaging," (January 13, 2007) available at https://web.archive.org/web/20070113213800/www.netplanet.org/dienste/im.shtml (last visited October 16, 2020).	
	7	Screenshots from Focus-Online Magazine referring to the 10 Best Mobile Phones (June 21, 2007).	

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	Attorney Docket Number	RMT-PT001.8

8	TECH-RECIPES.COM, "Send SMS Text Messages From AIM," (June 18, 2007) available at https://web.archive.org/web/20070618171355/http://www.tech-recipes.com/instant_messaging_tips116.html (last visited October 16, 2020).
9	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; Support of SMS and MMS over generic 3GPP IP access (Release 7)," 3GPP TR 23.804 V7.1.0 (September 2005).
10	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; Multimedia Messaging Service (MMS); Stage 1 (Release 7)," 3GPP TS 22.140 V7.0.0 (June 2007).
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12	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2 (Release 7)," 3GPP TS 23.060 V7.4.0 (March 2007).
13	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2 (Release 7)," 3GPP TS 23.060 V7.7.0 (June 2008).
14	THIRD GENERATION PARTNERSHIP PROJECT, "Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2 (Release 8)," 3GPP TS 23.060 V8.1.0 (June 2008).
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17	WIKIPEDIA, "Home Location Register (HLR)," subsection of article on Network Switching Subsystem, (July 19, 2007).
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	Attorney Docket Number	RMT-PT001.8	

19	WIKIPEDIA, "Presence Information," (June 6, 2007).
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23	SCHILLER, Mobile Communications, Addison-Wesley Publishers, ISBN 9780321123817 (1999).

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	Examiner Name	William R. Korzuch
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brian P. Gordaychik/	Date (YYYY-MM-DD)	2020-11-02
Name/Print	Brian P. Gordaychik	Registration Number	62,179

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 1 hour 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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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

Graham Merrett

Application No.: 16/714,113

Confirmation No.: 4546

Filed: December 13, 2019

For: MESSAGING SERVICE IN A
WIRELESS COMMUNICATIONS NETWORK

Group: 2400

Examiner: William R. Korzuch

Our File: RMT-PT001.8

Date: November 2, 2020

INFORMATION DISCLOSURE STATEMENT

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

Further to Applicant's Duty of Disclosure pursuant to 37 C.F.R. §1.56, Applicant wishes to bring to the Examiner's attention the material cited on the enclosed PTO Form SB-08.

Copies of the cited references are enclosed. Pursuant to 37 C.F.R. §1.98(a)(2)(ii), copies of the cited U.S. publications and/or patent documents have not been included. *Mobile Communications* by Jochan Schiller, the book cited on the PTO Form SB-08, was also cited in an IDS filed on October 30, 2020 for co-pending U.S.

Applicant: Rembrandt Messaging Technologies II, LP
Application No.: 16/714,113

Application No. 16/924,801. The book is currently in transit and will be available in the related application. The Applicant respectfully requests consideration of the book.

This Application is a continuation of U.S. Patent Application No. 15/966,965, filed April 30, 2018, which is a continuation of U.S. Patent Application No. 15/011,000, filed January 29, 2016, which is a continuation of U.S. Patent Application No. 14/307,166, filed June 17, 2014, which is a continuation of U.S. Patent Application No. 13/762,347, filed February 7, 2013, which issued December 23, 2014 as U.S. Patent No. 8,918,127, which is a continuation of U.S. Patent Application No. 12/452,883, filed July 7, 2010, which issued March 19, 2013 as U.S. Patent No. 8,401,576, which is the U.S. National Stage, under 35 U.S.C. §371, of International Application No. PCT/AU2008/001043, filed July 18, 2008, which claims the benefit of Australian Patent Application No. 2007906230, filed November 13, 2007 and Australian Patent Application No. 2007903979, filed July 24, 2007.

Applicant: Rembrandt Messaging Technologies II, LP
Application No.: 16/714,113

It is respectfully requested that the Examiner consider these documents and return an initialed copy of the PTO Form SB-08 indicating consideration of the cited materials.

Respectfully submitted,

Rembrandt Messaging
Technologies II, LP

By /Brian P. Gordaychik/ _____
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(74) Agent: **PARK, Young, Il**; Hyundai Life Insurance Bldg., 5F, 649-14, Yoksam-dong, Gangnam-gu, Seoul 135-080 (KR).

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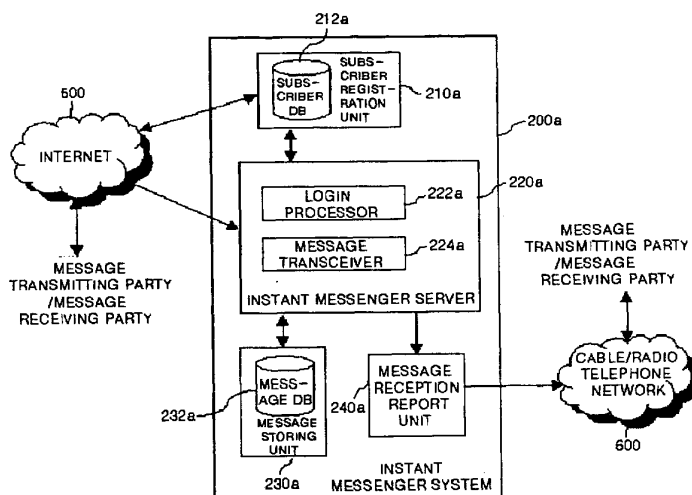
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(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.

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

TECHNICAL FIELD

5 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
10 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-
15 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-
20 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
5 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
10 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
15 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
20 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.

5 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
10 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
15 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.

20 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
5 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
10 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
15 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
20 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
5 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
10 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
15 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
20 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
5 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.

10 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;

15 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
20 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, 5 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, 10 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 15 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 20 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
5 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
10 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
15 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
20 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
5 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
10 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
15 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
20 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
5 300 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
10 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
15 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
20 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
5 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
10 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
15 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
20 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.

5 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
10 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
15 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.
20 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
5 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
10 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.

15 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
20 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
5 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.

10 "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
15 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
20 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
5 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.

10 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
15 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.

20 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
5 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.

10 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
15 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
20 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.

5 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
10 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
15 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,
20 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
5 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
10 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
15 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
20 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.

5 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
10 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
15 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
20 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
5 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
10 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
15 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
20 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.

10 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
15 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
20 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
5 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
10 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
15 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
20 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
5 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:

5 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;

10 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

15 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.

20 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
5 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.

10 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

15 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
20 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.

5 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
10 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
15 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
20 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.

5

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:

15 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.

5

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

- 5 (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.

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

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

- 15 (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.

20

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
5 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
10 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

15 (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.

20 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;

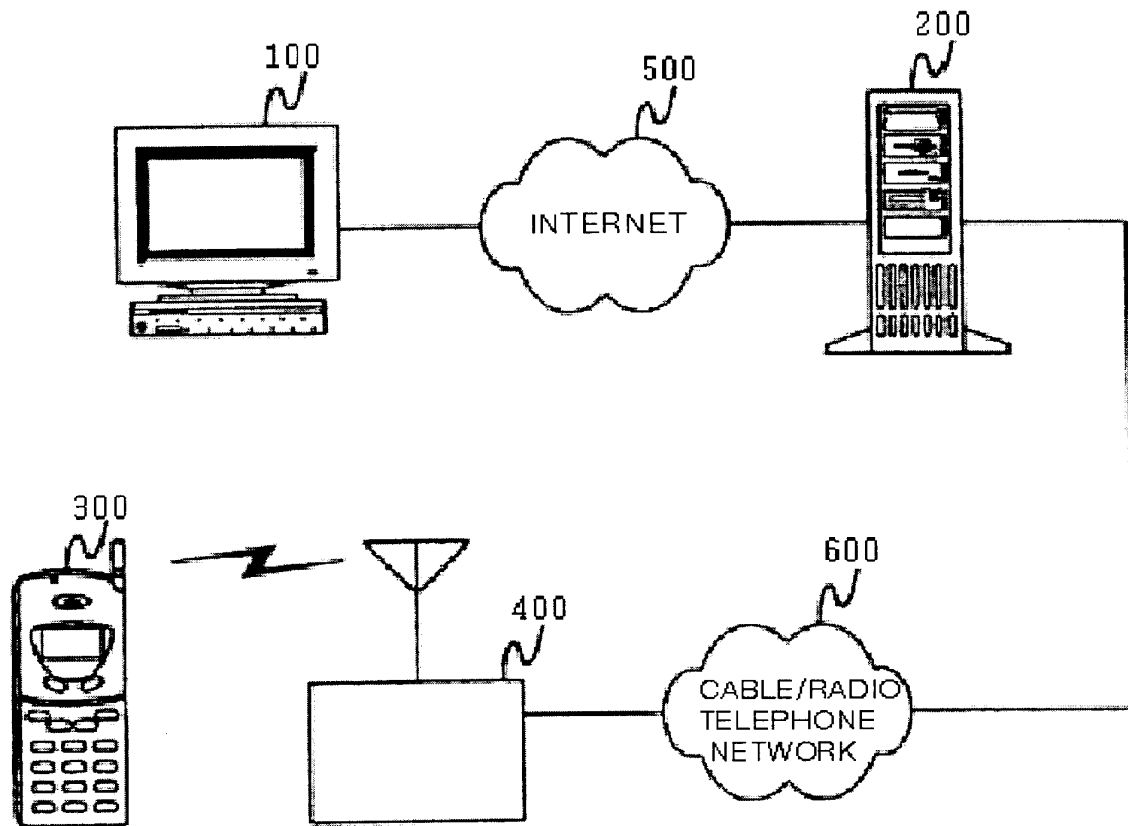
(b3) authenticating a user by receiving the transmitted password from the user;

5 (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.

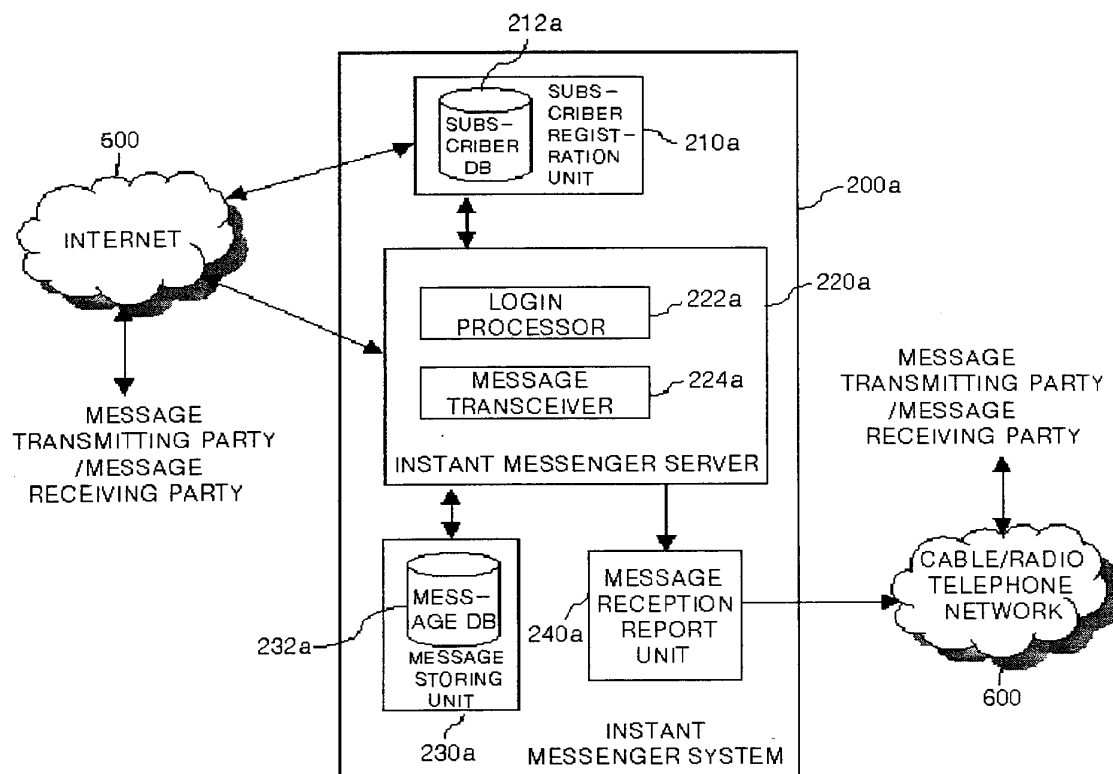
1/7

FIG. 1



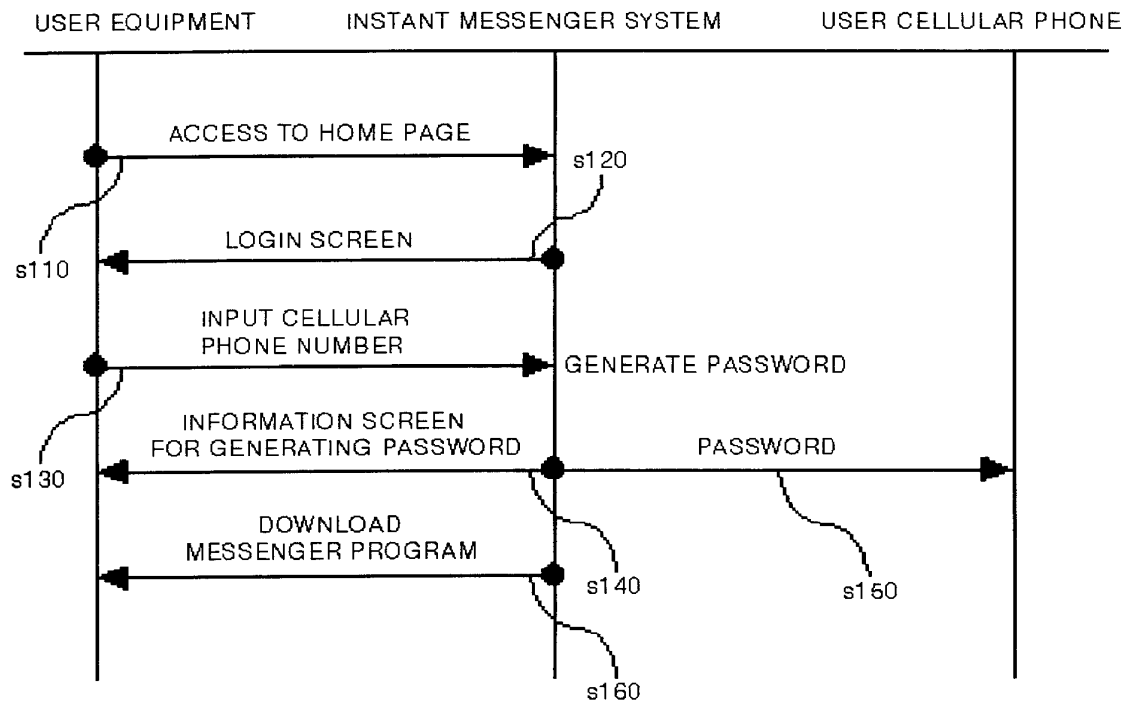
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FIG. 2



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FIG. 3



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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**

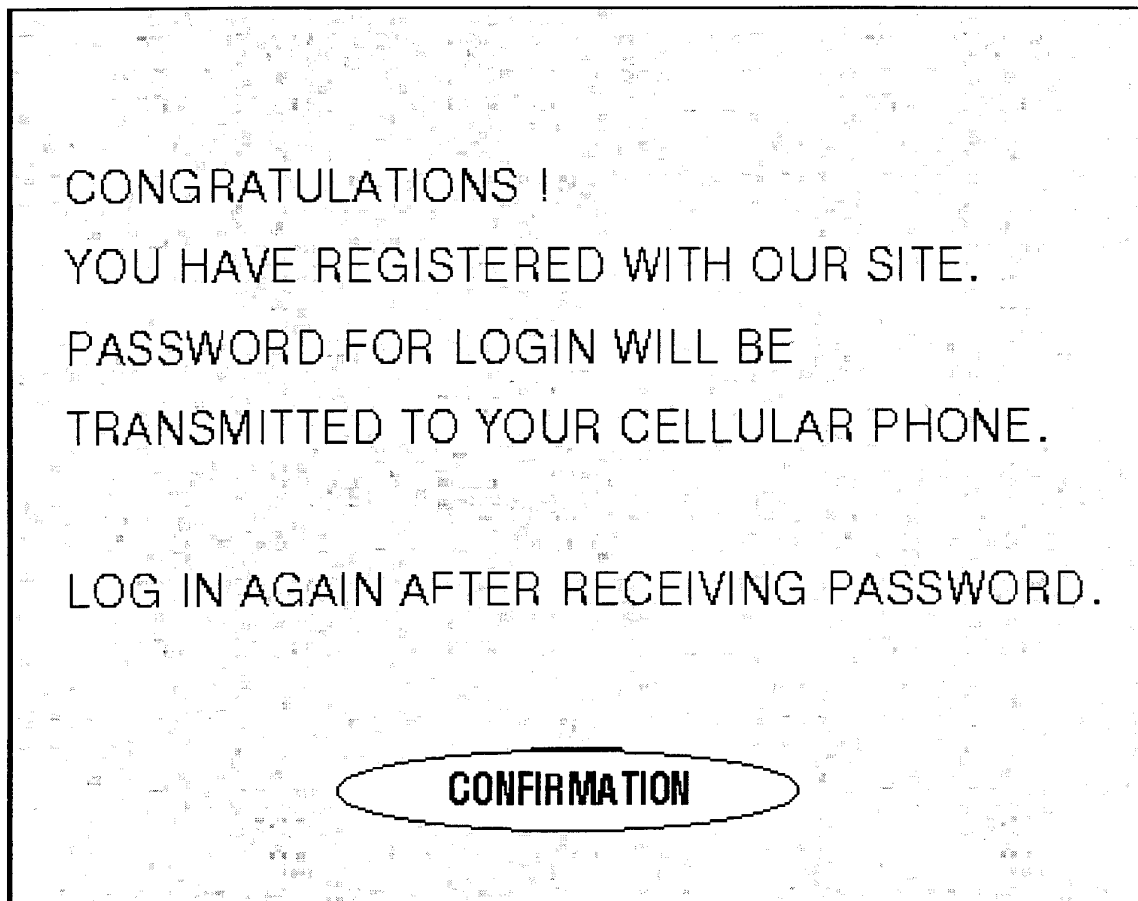
CELLULAR PHONE NUMBER :

PASSWORD:

CONFIRMATION

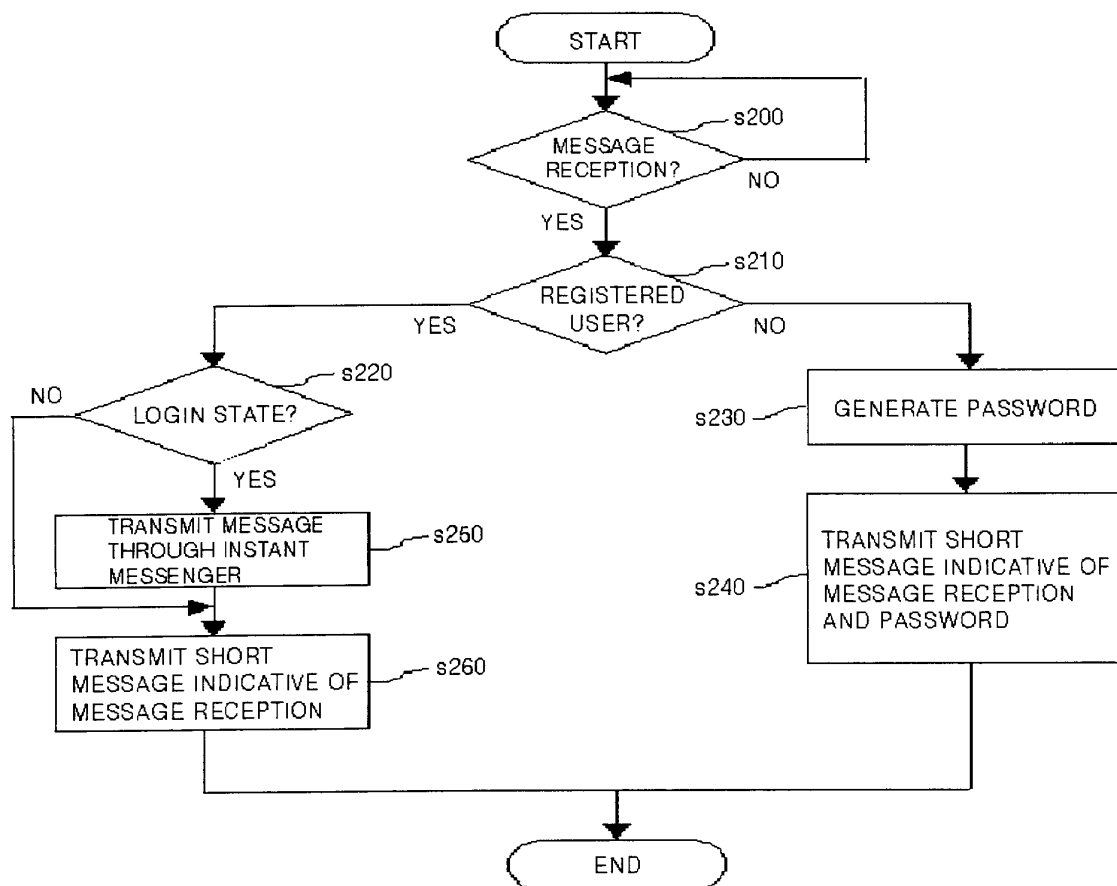
5/7

FIG. 4B



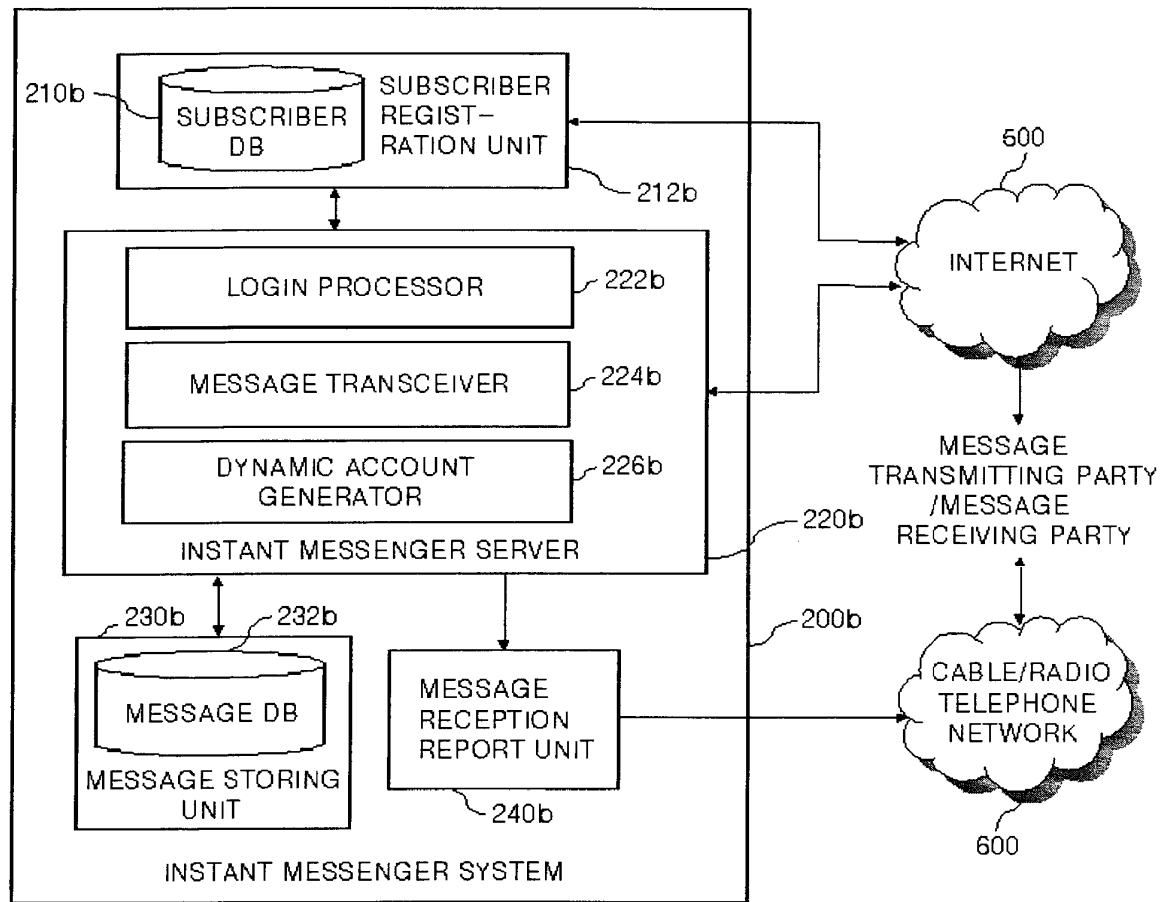
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FIG. 5



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FIG. 6



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		
Minimum documentation searched (classification system followed by classification symbols) H04Q 7/24, H04Q 7/38, G06F 13/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields 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 terms 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 relevance "E" earlier application or patent but published on or after the international filing date "I" 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 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		
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Name and mailing address of the ISA/KR Korean Industrial Property Office Government Complex-Taejeon, Dunsan-dong, So-ku, Taejeon Metropolitan City 302-701, Republic of Korea Facsimile No. 82-42-472-7140		Authorized officer BAE, Soon Goo Telephone No. 82-42-481-5742 

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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 EP 886826 A	01.02.00 30.12.98
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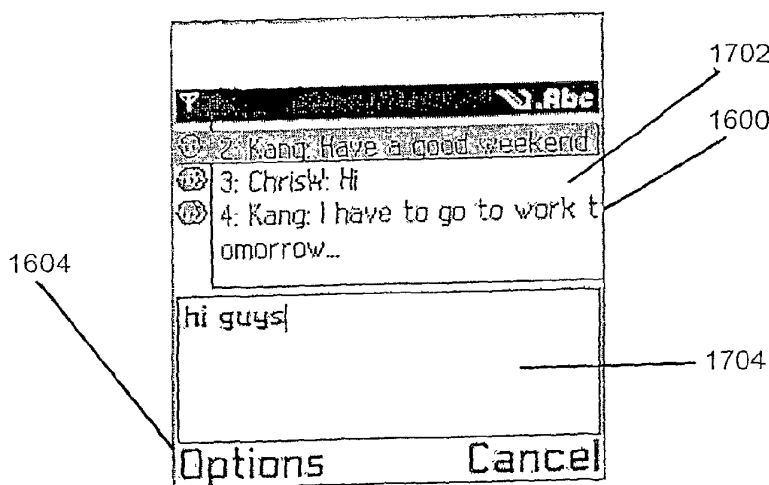
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(54) Title: METHOD AND SYSTEM FOR DISPLAYING GROUP CHAT SESSIONS ON WIRELESS MOBILE TERMINALS



(57) Abstract: A system and method for presenting chat group sessions at wireless mobile terminals is disclosed. The system includes plural wireless mobile terminals (100), each having a display screen (102). Each mobile terminal is capable of displaying a chat conversation that is updated in near real-time so that messages in the conversation progressively scroll on the screen. In addition, at least one of the mobile terminals is configured to present a text edit area (1704) on a portion of its screen while showing the chat conversation on another portion of the screen. A text editor resident in the mobile terminal permits a user to compose a message in the text edit area while simultaneously viewing the chat conversation as it progresses. The message can be a response to the conversation currently being displayed.

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**METHOD AND SYSTEM FOR DISPLAYING GROUP CHAT
SESSIONS ON WIRELESS MOBILE TERMINALS**

METHOD AND SYSTEM FOR DISPLAYING GROUP CHAT SESSIONS ON WIRELESS MOBILE TERMINALS

[0001] This application is a continuation-in-part of U.S. Patent Application No. 10/245,918 filed on September 18, 2002 and entitled "Voice and Text Group Chat Techniques for Wireless Mobile Terminals", which is a continuation-in-part of U.S. Patent Application No. 10/197,022 filed on July 17, 2002 and entitled "Voice and Text Group Chat Display Management Techniques for Wireless Mobile Terminals". The subject matter of the aforementioned applications is hereby incorporated by reference.

TECHNICAL FIELD

[0002] The present invention relates generally to wireless communication systems incorporating speech and textual input and output modalities and, in particular, to an improved technique for textually presenting real-time conversations (e.g., chat threads) on the displays of mobile units.

BACKGROUND OF THE INVENTION

[0003] Text and, to a lesser degree, speech chatting systems, are generally known in the art, particularly in relation to personal computing systems. Published U.S. Patent Application Nos. 2001/0042095 A1; 2001/0011293 A1; and 2002/0023128 A1 and U.S. Patent Nos. 6,212,548 and 6,286,034 illustrate exemplary system and user interfaces used today. A common feature of such systems is that the various conversations (or threads) are usually split out into distinct regions (or windows) on the display or screen. Furthermore, when a single thread comprises a plurality of both text and speech exchanges, such systems usually separate the two modalities: The speech is usually played over a speaker, whereas the plurality of text messages are displayed on the screen. Users have no means to reference old speech messages or distinguish when they occurred in the thread relative to other messages in that thread.

[0004] Published U.S. Patent Application No. 2002/0023128 A1 ("the '128 Publication") describes a system where the screen area is split into six distinct windows. One window presents a chat history of one thread (the thread in focus) while another window displays a chat history of the

combined plurality of the remaining threads. A chat history comprises a plurality of entries displayed on the screen that describe both inbound (i.e., received by the user's mobile terminal) and outbound (i.e., sent by the user's mobile terminal) chat messages. The entries are usually displayed on the screen in chronological order and usually only describe text messages.

[0005] Although the above described chat systems fulfill the needs of some chat group users, they focus primarily on large screens such as those found on personal computers. Viewable regions on the screen are dedicated to particular functionality. Such interfaces are not well suited for devices where the display area is small. On small screen devices, such as mobile devices, dedicating a region exclusively for text entry or other transient functionality consumes precious screen area. Such schemes do not allow the device to take full advantage of available screen display area when transient functionality (e.g., editing a new message.) is not in use.

[0006] Common practices on mobile device today usually transition the user through a series of screens. For example, when it is time to edit a message, the conventional practice on limited screen devices is to move the user from a chat history screen that occupies the entire content display region of the screen to a text editing screen, which also occupies the content display region of the screen. Such schemes do not allow a user to view a chat history as it progresses in real time while the user composes a message. When there is an incoming message, the user must move back to the history screen to see if the message currently being composed is still relevant given the context of messages received. A user interface that addresses such issues greatly enhances the desirability and convenience of participating in a chat session. Therefore, there is a need to provide a wireless chat messaging system that has an improved user interface at the mobile units, which permits the simultaneous display of chat threads and composition and/or editing of response messages on demand, taking into account limitations of mobile devices.

SUMMARY OF THE INVENTION

[0007] It is an advantage of the present invention to provide improved methods and systems for managing both single-modal (i.e., either voice or text) and multi-modal (i.e., combined voice and text) wireless chat services.

[0008] It is a further advantage of the present invention to provide a mobile terminal interface that allows a user to view a chat session as it progresses in real-time, while at the same time allowing the user to compose a message in response to the chat messages currently being viewed.

[0009] According to one embodiment of the present invention, a wireless system permits chat-based communications between mobile terminals. Each of the mobile terminals includes a display screen capable of presenting chat message text, a graphical user interface, and other information. At least some of the terminals execute a chat client application that provides chat services over wireless carrier networks. Mobile terminals running the chat client are capable of displaying a chat conversation that is updated in or near real-time so that messages in the conversation progressively scroll on the screen. In addition, the chat client allows a mobile terminal to present a text edit area on a portion of its screen while concurrently showing the chat conversation on another portion of the screen. A text editor resident in the mobile terminal permits a user to compose a message in the text edit area while simultaneously viewing the chat conversation as it progresses. The composed message can be a response to the conversation currently being displayed. Once the act of composing and sending the message is complete, the chat client allows the mobile terminal to remove the text edit area and expand the chat history area to occupy the freed screen area.

[0010] Other systems, methods, features and advantages of the invention will be or will become apparent to one with skill in the art upon examination of the following figures and detailed description. It is intended that all such additional systems, methods, features and advantages be included within this description, be within the scope of the invention, and be protected by the accompanying claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The components in the figures are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention. In the figures, like reference numerals designate corresponding parts throughout the different views.

[0011] FIG. 1 is a schematic illustration of a wireless mobile terminal usable in a chat system in accordance with an embodiment of the present invention.

[0012] FIG. 2 is a block diagram of a wireless communications system supporting chat services in accordance with a further embodiment of the present invention.

[0013] FIG. 3 is a block diagram of wireless communication chat components included in the system of FIG. 2.

[0014] FIG. 4 is a schematic illustration of an outbound text message usable in the system of FIG. 2.

[0015] FIG. 5 is a schematic illustration of an inbound text message usable in the system of FIG. 2.

[0016] FIG. 6 is a schematic illustration of a buddy list update message usable in the system of FIG. 2.

[0017] FIG. 7 is a table that illustrates the data contained in the presence manager shown in FIG. 2.

[0018] FIG. 8 is a table that illustrates the data contained in the nickname manager shown in FIG. 2.

[0019] FIG. 9 shows a buddy list display, presenting an exemplary nickname list in alphabetical order.

[0020] FIG. 10 shows a buddy list display, presenting an exemplary nickname list in group order.

[0021] FIG. 11 is a schematic illustration of a chat history display.

[0022] FIG. 12 is a schematic illustration of a title bar for the chat history display when speech is recorded.

[0023] FIG. 13 is a schematic illustration of a detail view display of an exemplary single communication message.

[0024] FIG. 14 is a schematic illustration of a text message editor.

[0025] FIG. 15 is a block diagram of a wireless communications system that has been extended to integrate legacy mobile terminals.

[0026] FIGS. 16-17 show an exemplary chat history/text editor display combination in accordance with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED EMBODIMENT

[0027] The present invention may be more fully described with reference to FIGS. 1-17. FIG. 1 illustrates a wireless mobile terminal 100 that may comprise any wireless communication device such as a handheld cellular phone or a wirelessly enabled Personal Digital Assistant (PDA). The configuration of the mobile terminal 100 shown in FIG. 1 is exemplary only, and it is generally understood that a variety of terminals and terminal configurations could be used. As shown, the mobile terminal 100 comprises a speaker 103 for rendering signals, such as received speech, audible; a display 102 to render text and graphical elements visible; a navigation rocker 105 that allows a user to navigate a list or menu displayed on the screen; programmable buttons (or "softkeys") 104; a keypad 106 that allows the user to input digits, letters, and other symbols (e.g., punctuation); a microphone 107 that captures audio such as the user's speech; and a push-to-talk button 101 that allows the user to initiate recording and transmission of audio. These and other components of the mobile terminal (not shown) are well known in the art and need not be described in greater detail herein. Additionally, there are a variety of styles and instances of components that can be used instead of (or in conjunction with) the components described in FIG. 1. For example, the push-to-talk button 101 may be omitted and replaced with automatic voice detection mechanisms. Touch screens and hand writing recognition techniques can replace the need for the softkeys 104, the navigation rocker 105, and the keypad 106. The present invention is not limited in this regard. Additional components of the terminal that are not necessarily visible to the user but are necessary to implement chat functionality are further described with reference to FIG. 3. The input devices available on the wireless mobile terminal (e.g., keypad, softkeys, etc.) may be employed by a user of the wireless mobile terminal to initiate a session of chat software and, within the operation of the chat software, to initiate one or more chat conversations (threads) as described in greater detail below.

[0028] FIG. 2 illustrates the overall system architecture of a wireless communication system comprising a plurality of mobile terminals 100 in accordance with an embodiment of the present invention. The terminals 100 communicate with at least one chat server complex 204 by wirelessly transmitting data to a corresponding wireless carrier's infrastructure 202. As known in the art, the wireless carrier infrastructures 202 comprise those elements necessary to support wireless

communications with the terminals 100. Various service providers (such as Verizon or Sprint in the U.S., or Orange in Europe) build and maintain such infrastructures. The data packets are sent on to a communication network 203 that forwards them onto the server complex 204. The communication network 203, which is a packet-based network, may comprise a public network such as the Internet or World Wide Web, a private network such as a corporate intranet, or some combination of public and private network elements. The server complex 204 preferably comprises a plurality of networked server computers that may be programmed to implement the functionality described below. The particular number of servers used and the manner in which they communicate with each other is a matter of design choice. Techniques for programming server computers and mobile terminals are well known in the art.

[0029] When the server complex 204 communicates with one or more mobile terminals, the server complex 204 sends its data to the network 203 that, in turn, forwards the data onto at least one of the carrier infrastructures 202. Each relevant carrier infrastructure 202 then transmits the data to one or more of its corresponding mobile terminals 100. Preferably, when a plurality of users chat together (i.e., send chat messages from one terminal 100 to another), data comprising text, speech, and/or graphical messages (or some combination thereof) are sent to the server complex 204. The server complex 204 then sends copies of the message out to the targeted terminals 100, preferably including, in one embodiment, the initiating or sending terminal.

[0030] The server complex 204 can be placed inside a wireless carrier's infrastructure 202, or that it may be eliminated in cases where direct terminal-to-terminal transfer is supported. In the latter case, substantially all of the chat messaging functionality is supported by the mobile terminals. Furthermore, the present invention would benefit systems other than packet data based systems, as well as systems that are limited in scope to a single wireless carrier's domain.

[0031] In the preferred embodiment, at least one chat server complex 204 resides outside the carrier's domain. As such, it is able to services a plurality of mobile terminals 100 that can be associated with a plurality of wireless carriers. In effect, the systems disclosed herein are independent of the wireless operators. They do not require any special hardware or software to be placed within the operator wireless network 202. The wireless operator's network (in conjunction with a public network 203) acts as a communication pipe between the mobile terminal 100 and the

server complex 204. Preferably, standard packet data transfer protocols are used to transmit and route data messages back and forth between the mobile terminal 100 and the server complex 204, such as the Internet Protocol (IP), Transmission Control Protocol (TCP), User Datagram Protocol (UDP), and World Wide Web protocols, such as the Hypertext Transfer Protocol (HTTP). The server complex 204 acts as a gateway between the various transfer protocols. Each of the plurality of mobile terminals 100 establishes a connection with the chat server complex 204 using a suitable transfer protocol. Messages flow from the mobile terminal 100 into the server complex 204 over at least one protocol. The server complex 204 copies the message's content and broadcasts it to other intended recipient mobile terminals 100 using the appropriate transfer protocol suitable for each of the targeted mobile terminals 100.

[0032] FIG. 3 illustrates in more detail components found in both the terminals 100 and the server complex 204 used to exchange group speech and text chat messages. Focusing on the components of the terminal 100, machine-readable and executable instructions (typically referred to as software, code, or program) are preferably stored in an application storage (or memory) 310 and executed (or run) on a central processing unit (CPU) 211. All storage devices described herein may comprise any combination of volatile (e.g., random access memory) or non-volatile (e.g., read-only memory) storage as known in the art. Likewise, the CPU 211 may comprise a microprocessor, microcontroller, digital signal processor, co-processor, similar devices or combinations thereof. Using known programming techniques, the software can manipulate the display 102, capture speech from the microphone 107, capture input data from the key pad 106, navigation rocker 105, soft keys 104 and/or push-to-talk button 101 using the I/O controller 312. Outbound chat messages sent to the server complex 204, as well as those inbound chat messages received from the server complex 204, pass through the network interface 306 that provides connectivity between the terminal and the data network. Where the terminal 100 comprises a wireless device, the network interface 306 comprises the entire physical interface necessary to communicate with the server complex 204, including a wireless transceiver. Preferably, but not necessarily, speech sent to the server complex 204 is first encoded using a voice codec 307, which may be implemented in software, but is preferably implemented using a combination of hardware and software components. Similarly, voice from the server complex 204, may, when necessary, be decoded using the voice codec 307 before it is sent to

the speaker 103. The software uses temporary storage 309 to save working data that does not persist between software initiations (sessions). On the other hand, the software uses the permanent storage 305 to persist data for longer periods of time that can span multiple software sessions.

[0033] Focusing on components of the server complex 204, the data traffic comprising encoded speech and text messages (e.g., outbound chat messages 400; see FIG. 4) flows into the server complex 204 preferably via the router 301. Note that the router 301, presence manager 302, message broadcaster 303 and nickname manager 304 may be implemented on one or more server computers or the like residing within the server complex 204. The router 301 directs the outbound chat message 400 towards a message broadcaster 303 that determines the plurality of inbound chat message copies (e.g., inbound chat messages 500; see FIG. 5) needed and their destinations. In the context of the present disclosure, the term inbound refers to messages directed to one or more mobile terminals, whereas the term outbound refers to messages sent by mobile terminals. The message broadcaster 303 decomposes the incoming message 400, and locates the list of recipient identifiers 402. It then queries a presence manager 302 to establish the recipients' current status 702 (i.e., an indicator of whether the recipient is ready to receive the particular type of message, speech and/or text messages only, etc.) and the terminal's address 703. FIG. 7 illustrates a table with the plurality of presence data records 700 contained within the presence manager 303. Each presence record 700, comprises the user's identifier 701, the current status 702, the current terminal address 703 (if known), a public display identifier, such as a public nickname 704 and a public short name 705, and a plurality of other user identifiers 706 that subscribe to the presence information of the user corresponding to that record. The public display identifiers or public nickname set 704-705 is used in inbound chat messages 500 sent to the terminal 100 unless the receiver (i.e., the receiving user) overrides the public nickname set 704-705 with private display identifiers or a private nickname set 802-803. When presence status 702 changes, the presence manager 302 sends a buddy list update message 600 to all the subscribers listed in the subscriber identifier field 706 of the corresponding presence record 700. The presence records 700 may contain other information and attributes such as forwarding address, processing rules that describe what to do in various circumstances, graphical representation for various status, profiles (i.e., a plurality of a different value sets that could be used at various times or depending on the receiver, etc.) and the like.

[0034] Although not illustrated in FIG. 3, the server complex 204 may include other components such as authentication and encryption servers that ensure the authenticity of the chat communication messages and secure the privacy of their content. The server complex 204 may also include a plurality of other components like speech-to-text and text-to-speech translators, natural language translators, voice transcoders, and other similar transformation gateways that transform the message, its contents, and any attachments (e.g., ring-tones, images, and so on) to a more meaningful and usable format by the receiver. Techniques for implementing such other components are well known in the art.

[0035] In the preferred embodiment, each of the plurality of wireless operators may deploy different wireless data technology in the wireless carrier network 202, such as Global System for Mobile Communication's (GSM) General Packet Radio Service (GPRS) and Code-Division Multiple Access's (CDMA) Single Carrier Radio Transmission Technology (1xRTT). In this respect, the systems disclosed herein do not depend on the data wireless technology employed.

[0036] In the preferred embodiment, the voice codec 307 used on the plurality of mobile terminals 100 is native to the terminals. The voice codec 307 native to the mobile terminal 100 is optimized for both the terminal's processing strategy and the wireless technologies used. In order for the system to be independent of the underlying wireless technology, the system uses commercially-available media scheme gateways (not shown). The media gateways transcode speech samples from one encoding to another. In operation, the message broadcaster 303 establishes the type of encoding used on the incoming message. It determines the type of encoding required for the each of the plurality of target mobile terminals 100. For each copy of the message, the message broadcaster 303 uses at least one media gateway to transcode the speech to a coding scheme appropriate of the target recipient. Techniques for detecting the type of encoding used by the incoming message and or required by the target terminals, as well as interfacing to media gateways are known in the art. Exception processing in cases where the media gateway is unable to fulfill a conversion can also be performed by the system. For example, a message may be sent back to the sender informing the sender that the message was not delivered to the target recipient because the system does not support the required transcoding techniques.

[0037] In addition, the system can be configured to optimize transcoding. For example, the message broadcaster 303 can reuse the same transcoding for all messages targeting mobile terminals 100 that require the same encoding. In addition, the message broadcaster 303 can avoid transcoding the speech if it detects that the message cannot be otherwise delivered to a target. Other optimization techniques can be employed as well.

[0038] In the preferred embodiment, the plurality of mobile terminals 100 are grouped and allocated among a plurality of chat server complexes 204. As such, each server complex 204 services a set of homogeneous mobile terminals 100 requiring the same speech encoding. Multiple server complexes 204 may use the same encoding. When a message reaches the message broadcaster 303 of one of the chat server complexes 204, the broadcaster forwards at least a copy of the message to another server complex 204 managing the connection with a subset of the intended recipients of the message. The message forwarded is transcoded by a media gateway in route between the two server complexes 204. The system benefits from using a common encoding for transferring the speech sample between the various server complexes 204. In particular, the message that is received by a server complex 204, is transcoded into the common encoding before it is forwarded to the plurality of other target server complexes 204 (only one transcoding is required in this case). Upon arrival of the message into each of the plurality of target server complexes 204, the message is converted into the encoding that is suitable for the target mobile terminal 100. Only one encoding at the end server complex is needed since all the terminals serviced by the complex use the same encoding. Messages not forwarded outside the server complex 204 need no transcoding since all the mobile terminals serviced by the complex use the same encoding. In this arrangement, simpler media gateways may be deployed between the complexes 204 because the gateways only need to transcode content between the common encoding and the encoding used by the mobile terminals 100 serviced by the complex 204. Also, detection of the type of transcoding required is inherent in the routing of messages i.e., structure and distribution of mobile terminals and does not required actual resolution based on any encoding information itself. It is done based only on the target address of the mobile terminal, which is resolved in all cases to route and direct messages. For example, instead of using multiple server complexes 204, a single server complex 204 can be subdivided where a plurality of message broadcasters 303 are used in the same spirit as distributed server complexes 204. The

invention is not limited to any particular arrangement of server complexes. Alternative arrangements can be employed for the server complexes.

[0039] Preferably, a nickname manager 304 resides in the server complex 204 and is responsible for managing lists of nickname sets 802-803 used by the receiver of an inbound chat message 500 to override public nicknames and short names. Note that nicknames and short names differ primarily in their length. Nicknames may be of any arbitrary length (possibly limited as a matter of design choice), whereas short names are preferably fixed in length or size. Additionally, nicknames and short names are instances of display identifiers used to identify the originators of chat messages. Such display identifiers are distinguished from identifiers used internally by the system to identify particular users (e.g., identifiers having reference numerals 701, 403, and 604 in the accompanying FIGS.). It should also be noted that short names might differ from nicknames in format or type. The system may use graphical, symbolic or other suitable forms of short names that are compact and fixed in dimension while using textual forms for nicknames. The system may vary the graphics and symbols based on context, user preferences, presentation themes and personalities.

[0040] FIG. 8 illustrates the nickname record 800 contained within the nickname manager 304. Preferably, each nickname record 800 comprises a receiving user's identifier 701, the buddy's identifier 801 (i.e., the identifier of the chat buddy for whom the receiving user desires the message broadcaster 303 to replace the buddy's public nickname set 704-705 with the receiver's private nickname set 802-803 on all inbound chat messages 500) and the private nickname 802 and private short name 803. Like the case of presence records 700, the nickname records 800 may contain other information and attributes such as forwarding address, processing rules, graphical representation for various status, profiles (i.e., different field values that could be used in various times, etc.) and so on. Upon receiving a message targeted to a recipient designated by the receiving user's identifier 701, the nickname manager 304 determines the buddy identifier 801 (i.e., the identification of the chat participant that initiated transmission of the message). Based on the buddy identifier 801, the nickname manager 304 inspects the nickname records corresponding to the targeted recipient. If the buddy identifier is not found in the targeted recipient's nickname records, the message is sent to the targeted recipient as in inbound message with the public nickname and public short name of the sender. In this case, the public nickname and/or short name of the sender will thereafter be displayed

on the targeted recipient's mobile terminal display. If the buddy identifier is located in the targeted recipient's nickname records, the nickname manager determines the private nickname and private short name associated with the buddy's identifier and replaces the public nickname with the private nickname and the public short name with the private short name in the subsequent inbound message sent to the targeted recipient, thereby causing the private nickname and/or private short name to be displayed on the recipient's mobile terminal display. In this manner, users (i.e., recipients) have a greater degree of control over how chat histories are displayed on their terminals. Note that the process of determining private display identifiers and substituting them for public display identifiers could be performed by the mobile terminals assuming that the necessary nickname records are stored on the mobile terminals.

[0041] FIG. 4 illustrates an outbound chat message 400 that the terminal 100 sends to the message broadcaster 303. The outbound chat message 400 comprises a message type 401 (e.g., text, speech, and so on), a number of intended recipients 402, a plurality of recipient identifiers 403, a thread identifier 404, a message length 405, message content 406, and a number of attachments 407. Preferably, the mobile terminal 100 generates the thread identifier 404 by aggregating a client identifier and a session identifier with a thread sequence number. The thread sequence number is a terminal-side number that starts from 0 each time a session is initiated. The client increments the thread sequence number by 1 each time the terminal 100 generates a new thread. Although not illustrated in FIG. 4, the payload may contain message encoding types and other attachments (e.g., icons, ring-tones, and so on). Other elements can be added to the outbound chat message, such as sequence numbers, time stamps, or the like.

[0042] The message broadcaster 303, upon receiving the outbound chat message 400, first compiles a list of target recipients comprising the sender's identifier (i.e., the first recipient identifier in the recipient identifier list 403) and the plurality of other recipient identifiers (i.e., the recipient identifiers in the identifier list 403 other than the sender's identifier). For each target, the message broadcaster 303, determines the status 702 of the target by locating the target's identifier in a presence record 700 with the matching identifier 701. For each available target (i.e., where the presence record indicates that the recipient can receive the message type 401), the broadcast manager 303, composes an inbound chat message 500. The message broadcaster 304 queries the nickname.

manager 304 to find the receiver's local nickname set 802-803 for the other recipients (i.e., the identifiers comprising the original list of targets without the receiver's identifier.) If no information is found (i.e., the receiver did not build a nickname record 800 for the particular recipient), the message broadcaster 304 queries the presence manager 302 for the recipient's public nickname information 704-705. The message broadcaster 303 extracts the receiver's address 703 from the presence manager 302 and sends the inbound message 500 to the receiver's terminal 100 via the router 301. Those having ordinary skill in the art will doubtlessly recognize that means to optimize the creation and broadcasting of messages, such as using common compression and encoding techniques may be employed, and that other information may be included in the inbound chat message 500, such as sequence numbers, timestamps, and so on.

[0043] FIG. 5 illustrates an inbound message 500 sent by the server complex 204 to the terminal 100. As shown, the inbound message 500 is largely a copy of an outbound chat message 400 sent from a terminal 100 to the server complex 204. The inbound message 500 preferably comprises the original outbound message 400 and a definition of new users not known to at the terminal 100 (i.e., not already in the receiver's buddy-list.) The new user definition comprises the number of new definitions 501 and a plurality of individual definitions comprising the recipient's identification 502, full name 503, public nickname 504, and public short name 505. In some cases, the original outbound message has to be transformed to be understood by the receiving terminal 100. It should also be noted that the server complex 204 may only need to include the new user definition once during a session. That user definition is placed in the terminal's 100 temporary storage 309. This enables less wireless data transfer. Other attributes can be placed in the inbound chat message 500 including such things as time stamps, sequence numbers, and so on. It should be noted also, that anonymous identifications and virtual or group identification could be used as well.

[0044] When a participant's presence status 702 changes, the message broadcaster 303, sends a buddy list update message 600 to other users subscribed to the participant's presence status 702. FIG. 6 illustrates a buddy list update message 600 sent from the server complex 204 to the mobile terminal 100. The message 600 comprises a list type 601 (e.g., alphanumeric list, group list, etc.), the number of groups identified in the message 602, at least one group definition 603-604, a list of ungrouped individuals 605-606, and a plurality of user definitions 502-505, 607. Note that the

recipient status field 607 indicates the value of the presence status 702. A group definition, in this context, comprises a group name 603 and a plurality of recipient identifiers 604. A recipient's identifier can exist in a plurality of group definitions. However, preferably, there will be only one user definition 502-505, 607. Furthermore, preferably, for each identifier in the list of recipient's identifiers 604, there is at least one user definition 502-505, 607 for that recipient in the buddy list update message 600. The list of ungrouped individuals is a special unnamed group. It comprises the number of ungrouped individuals 605 and the list of recipient identifiers 606. Preferably, recipient identifiers in the ungrouped definition cannot be in other groups. The records 600 can contain other fields of attributes and information such as presentation icons, audicons, or the like. In addition, it should be noted that the message does not have to contain the entire list of groups and individuals on updates, rather incremental updates could be used instead.

[0045] The presence manager 302 may send buddy list update messages 600 to the terminal 100 upon receiving a refresh request from the terminal 100. Those having ordinary skill in the art will recognize other reasons to send buddy list updates (e.g., initial connection,) as well as optimizations in the form of encoding the contents, sending incremental updates instead of the entire list, and so on.

[0046] In another embodiment, parts (or all) of the functionality of the message broadcaster 303 and the nickname manger 304 can reside on the terminal 100. In that case, the terminal 100 communicates with the server complex 204 when it exchanges presence information. Chat communication messages are broadcast from one terminal 100 to the plurality of other terminals 100 in a point-to-point fashion.

[0047] FIG. 9 illustrates a buddy list display with its entries sorted alphabetically. The screen 102 is divided into three regions. In a topmost region, there is a title bar region 901 allowing the display of one line of text and graphic symbols (i.e., icons). The software uses this region 901 to provide the user notices and other meta-information about the current task. In the case of the buddy list display, the title bar 901 comprises the user's own presence indicator 904, the user's own public nickname 704, and, on occasion, an inbound chat message indicator 905. Preferably, the presence indicator 904 is a icon that varies in appearance depending and the presence status 702 (i.e., there is a different and distinguishable feature associated with the various status values). Preferably, the

inbound chat message indicator 905 is an icon accompanied by an audible sound when the icon is first displayed. Combined, the visual and audible notice indicate to the user that there is at least one unheard and/or unread inbound chat message 500 that has arrived at the terminal 100. If the user's nickname is too long for the title bar 901, the software scrolls the title bar leaving only the inbound chat message indicator 905 in a fixed position for quick access. There are many familiar examples in the art today of such display techniques, any of which may be incorporated for use with the present invention.

[0048] In the middle region of the display is a content region 903. In the case of the buddy list display, the software preferably places a multi-selection list in the content region 903, which list has a plurality of entries each representing a buddy that was received by the terminal 100 from the server complex 204 in a buddy list update message 600 and stored in the temporary storage 309. Each entry can be highlighted 908 by the user. Highlighting and navigating list entries are implemented using common techniques in the art. Each entry in the list comprises a selection indicator 906 that indicates whether the user has selected the particular buddy for chatting (i.e., sending a chat communication message), the buddy's presence indicator 911, the buddy's nickname 802 or 704, and/or the buddy's short name indicator 907. Note that symbols other than text could serve the same function as the short name indicator 907 for the short name information 705 or 803 as indicated previously. For example, icons or other graphical elements could be used so long as they sufficiently differentiate buddies from one another. Further still, a combination of such graphical elements and text could be used if sufficient screen space is available.

[0049] On the bottom of the screen 102 is a softkey label region 202. Preferably, there is a minimum of two labels 909-910. The number of labels depends on the actual number of softkeys 104 available on the terminal 100. As shown, the left softkey label 910 is "select" while the right softkey label 909 is "write" if there is at least one selected entry in the buddy list. Otherwise, the right softkey label 909 is labeled "chat". If the user activates the left softkey with a single click (referred to onward as "single-clicking"), the highlighted entry 908 is selected (or deselected if it was already selected,) and consequently its selection indicator 906 changes to reflect the new state. If the user presses and holds (referred to onward as "click-holding") the left softkey, the software presents the user with a plurality of options such as the option to deselect or select the entire list; switch to

other displays (e.g., chat history display described in FIG. 11, group ordered buddy list display described in FIG. 10, etc.); request the details of the buddy (e.g., full name, the public nickname set 704 705, etc.); change the nickname set 802-803; show or hide fields (e.g., the short name indicator 907), and so on. Once again, techniques for programming such functionality and associating it with single-clicking and/or click-holding are well known in the art. It should also be noted that the use of a text string to represent a softkey label is exemplary and only intended to capture the spirit or intent of the invention. Other forms of labels can be used, such as graphical symbols, and the like.

[0050] If no buddies are selected, the right softkey label is "chat". Single-clicking or click-holding the right softkey in this context switches the user to chat history display described in more detail with reference to FIG. 11. If the user pushes the push-to-talk button 101 (referred to onward as pushes-to-talk,) an audible indicator reminds the user that buddies have to be selected first. If there is at least one buddy selected, single-clicking or click-holding the right softkey begins to compose a message for a new thread to the selected buddies. The display in that case switches to the text message editing display described in more detail with reference to FIG. 14. If the user pushes-to-talk, the display switches to the chat history, and the user is able to record and transmit a speech message and consequently start a new thread with the selected buddies.

[0051] FIG. 10 illustrates a buddy list display with its entries sorted by group. In a preferred embodiment, group entries and their member buddies are listed first followed by a list of ungrouped buddies. Individual entries are identical to those displayed in an alphabetically ordered list with the exception to a preferred indentation (i.e., an annotation that indicates membership to a group). Group entries comprise a group name 1005 and a group selection indicator 1001 which is similar to the individual selection indicator 906 except that a group selection indicator can indicate more than just selected and unselected states; it can indicate partial selection as well. Referring to the examples illustrated in FIG. 10, solid squares (group selection indicators) such as in groups 3 and 4, are completely selected. Group 5 has an empty square indicating partial selection. If there is a group without any of its members selected, there is no indicator at all on the group level (or the individual buddy level). To select a group, a user can either select all the members one by one or select the group directly. To partially select a group, a user can start by selecting a group then deselecting one or more member. Alternatively, a user can start with an unselected group and select one or more

members. A group entry can be collapsed (i.e., the members of the group are suppressed from the display.) In that case, the entry is annotated with a collapse indicator 1002. If the user highlights a collapsed group for a length of time, the group automatically expands to show the members. When the user moves to another group, the group display style reverts back to its collapsed state again. If a user selects or deselects a group entry, all the members of the group are automatically selected or deselected. The softkey labels 1003-1004 are similar in behavior to those described with reference to FIG. 9. However, click-holding when a group entry is highlighted (or an individual within a group is highlighted) presents the user with additional options to manage the group, such as renaming the group; removing the group or its the member; adding a new group or individual, collapsing or expanding the group; collapsing or expanding all groups; and so on. It should be noted that, in a preferred embodiment, only one level of grouping is allowed (i.e., nested groups are not allowed), although multiple levels could be provided.

[0052] Preferably, where the system supports presence profiles that are coupled to recipient users or groups, then as the user highlights the plurality of buddy entries 908, the user's presence indicator 904 and nickname 704 in the title bar 901 will vary to indicate the presence information of that particular buddy (or group of buddies). Also, it should be noted that if the information in the highlighted entry 908 is too long, the software can scroll the information, expand it, or use other techniques common to the art to present all the information to the user.

[0053] It is understood that there are other means to order lists (by date, events, and so on), and that other annotations could be added to the entries. For example, an indicator that there are messages that have not been read/heard available from the individual or group may be used.

[0054] FIG. 11 illustrates a chat history display. The content region 903 of the display is a single selection list comprising a plurality of entries representing inbound chat messages 500 received by the terminal 100 and a plurality of entries representing outbound chat messages 400 transmitted by the terminal 100. Outbound chat messages are preferably echoed back to the sender in full or in part (e.g., speech messages might not include the actual speech sent) in the form of inbound messages. That is, outbound chat messages go to the server complex for transmission to the targeted recipient(s). In addition to sending the message to the targeted recipient(s), the message broadcaster sends a copy of the outbound message to the transmitting terminal (i.e., the sender) as an

inbound message. In some cases, the copy of the message (the inbound message) to the transmitting terminal might not be identical to the message that was sent (the outbound message). For example, the speech content of an outbound voice message is not copied back to the transmitting terminal; only a text portion of a voice message is sent back as in inbound message. Note that, in this case, voice messages have text appended to them, even if only a generic character string or symbol is used to indicate that the message was a voice message. Of course, if speech-to-text conversion is available, the actual speech content of the message could be converted to text and copied back to the transmitting terminal. In this manner, the occurrence of voice message results in an entry being displayed on the screen. In an alternative approach, rather than having the text of an outbound message sent back to the transmitting terminal via an inbound message, the transmitting terminal can locally echo the text to the display directly. In this manner, use of wireless resources may be minimized.

[0055] A common problem in the art of chatting is the representation of successful delivery. A preferred approach to giving notice of delivery is to send an outbound message 400 back (as an echo inbound message 500) to the sender's mobile unit communicate to the sender that the message has been reliably delivered to the message broadcaster 303 in the chat server complex 204. Alternatively, the representation of that notice can be a text message that is placed in the chat history with a message indicating that the message sent was received by all recipients. The echo can be sent back when the outbound message 400 is received by the message broadcaster 303. The chat server complex 204 can then send a receipt notice when all the recipients have received the message. Preferably, the original echo is annotated when the delivery receipt arrives (e.g., changes color and/or font, or is adorned with a symbol like a check mark, etc.) to give notice of receipt. In an alternate approach, the echo message back to the user can be delayed until the broadcaster 303 has received confirmation that all intended recipients received copies of the message. However, the approach may present some presentation side effects that can be confusing to the user in environments where the delivery latency is relatively long and there is a high degree of latency variability between the deliveries of the plurality of copy messages. In such situations, at least one recipient may respond back to the sender before the message reaches the remaining recipients. In that case, the sender would see on his/her chat history display (see e.g., FIG. 11) the response to the message before the

echo. Several techniques can be deployed to rectify this problem. For example, the mobile terminal 100 or the server complex 204 could delay presentation or delivery of the recipient response until the original message was received by all recipients and the echo sent back to the user.

[0056] While not illustrated, at any time, the user may query the system as to who has (or has not) received the message. Other implementations may choose to forgo allowing the user to query the system for outstanding deliveries and instead provide comparable information by sending a plurality of receipt notices (one each time a copy is delivered to the user). While such techniques may be simpler to support in the chat server complex 204, they may require more communication resources.

[0057] In the example of FIG. 11, each entry comprises an attachment indicator 1104-1105 that indicates if there is any attached content (e.g., documents, files, etc.) or transmitted speech available; the short name of the sender 705 or 803, and at least part of the message content or text (all of the text if the text fits within 2-3 lines). Although not illustrated in FIG. 11, there may be other indicators present on an entry such as a locked entry indicator (i.e., indicates that an entry was saved in permanent storage 305 and will always appear in the chat history display until it is unlocked). Note that lesser amounts of information may be included in each entry of the display. For example, only the message content could be displayed without the short names of the senders.

[0058] When an entry is highlighted 1106, the plurality of nicknames 802 or 704 of the sender and the other recipients is placed in the title bar 1101. If the list is too long, the contents of the title bar 401 scroll. Alternatively, short names or other symbols may be used in place of the nicknames in the title bar 1101. As the user selects an entry 1106, all related chat messages in the same thread are emphasized 1103 as well. Emphasis can be done by changing or annotating the related entries or changing unrelated entries (e.g., graying out the entries). If a selected entry is too long to be displayed in its entirety and is selected for a length of time, the contents of the entry can expand automatically to display the entire text content. In that case, when the user moves to another entry, the entry immediately shrinks back to fit within its originally allocated space of 2-3 lines of text. The actual number of allocated lines depends on the screen size. As new inbound chat messages 400 arrive, new entries are added automatically to the list, for example, at the bottom of the list. The bottom or buddy list entry 1107 is a special entry referencing the list of buddies currently

selected in the buddy list display. The user can use the entry to start a new thread with the buddies. The bottom entry 1107 only appears when the user has selected buddies, and comprises an icon 1110 distinguishing the entry from other “regular” chat message entries. If the user selects the bottom entry 1107, the list of buddies appears in the title bar 1101 in the same manner recipients are displayed when the “regular” entries of the chat history are highlighted.

[0059] The left softkey label 1108 is “buddies”. Single-clicking or click-holding the left softkey switches the user to the buddy list display (see FIGS. 9 and 10). The right softkey label 1109 is “reply” if the highlighted entry is a chat message entry. Otherwise, it is labeled “write,” as before. Single-clicking the right softkey moves the user to a message editor display described in more detail with reference to FIG. 14. The target recipients of a message are either derived from the list of recipients of a chat message entry 1106 or those associated with the buddy list entry 1107. In the case where the highlighted entry is a chat message entry 1106, click-holding the right softkey presents the user options similar to those described in more detail with reference to FIG. 13. Otherwise, if the highlighted entry is the buddy list entry 1107, a “send to all” action is indistinguishable from normal “reply to all action” of single-clicking. If the user pushes-to-talk, the target recipients are compiled (i.e., either the sender and recipients of the chat message entry 1106, or the buddies of the buddy list entry 1107), the title bar is updated in a manner described in more detail with reference to FIG. 12, and the recording and transfer of a speech chat message begins.

[0060] It should be noted, that if an inbound speech message arrives while the chat history display is not visible to the user, the received speech is queued up. In a current implementation, the most recently received speech message (or at least that portion that will fit in available memory) are queued at the receiving terminal. In an alternate approach, such queuing can occur at the server complex such that the recipient can request playback within a predetermined period of time. Further still, queuing could occur at both the terminal and the server-side such that playback may be requested from the server in the event that a given speech message is no longer available at the terminal. While the speech entry is the most recent speech entry, the associated speech remains queued and ready for automatic playback upon the user’s return to the chat history display. When the user switches back to the chat history display, if the speech entry is visible on the screen, it is automatically played back. Only the last speech message received is automatically played back. The

playback is abandoned if the user returned to the chat history to record and transmit a speech chat message.

[0001] Unambiguous delivery of speech messages to the user is a problem when integrating multiple multi-modal threads of conversation into a single chat history. In the current art, it is difficult for a user to associate speech with a particular discussion threads. The system disclosed herein solves the association problem in two ways. First, as discussed above, each speech message leaves an entry on the display. The entries link to their corresponding threads and represents at least the sender and the list of other recipients of the message. This, however, is not sufficient in cases where the user is unable to view the display while listening to speech messages. For this reason, the system disclosed herein uses a second technique in conjunction with the first. Preferably, when a user selects a thread, all speech messages associated with the selected thread are played back to the user automatically, unless otherwise provisioned by the user. Any speech messages not belonging to the selected thread are not played back automatically. Instead, the mobile terminal 100 presents an audible signal to the user indicating that there is other incoming speech message(s) in other thread(s). The user at that point can chose to playback the message or request the system drop it. Irrespective of whether the incoming speech message is played, the text portion of the incoming speech message is presented on the display. This helps the user in the decision process of choosing to listen to the message or ignoring it. Further optimizations are possible. For example, the user can be given the option to drop the message. Any speech data being transmitted is then dropped and the server is notified that it can stop transmitting the remainder of the speech message and begin transmitting the next message in the queue (if one exists).

[0061] The delivery techniques can be optimized. For example, the mobile terminal 100 may send a message to the chat server complex 204 whenever the user selects a thread. This allows the chat server complex 204 to suppress sending the speech components of the speech message not belonging to the selected thread until the user indicates he/she wants to listen to the speech. This minimizes sending large amounts of data to the mobile terminal 100 that may not be used.

[0062] FIG. 12 illustrates the title bar of a chat history display when the user is recording and transmitting an outbound speech message. The title bar comprises a recording indicator 1201; the plurality of recipient nicknames 705 or 802 (which does not include the sender) and, optionally, a

single label 1203 indicating to the user that he or she is talking to the identified recipients. If the list of recipients is too long, the list scrolls; however, the recording indicator 1201 remains fixed in position. There may be a delay between the times when the user pushes-to-talk requesting to record and transmit speech and when the system grants the user access to do so. Preferably, the recording indicator 1201 is an icon that changes its appearance (e.g., color or graphic symbol) to indicate when the user has and or loses speech recording/transmitting access. Shortly after the user releases the push-to-talk button 101, the title bar reverts back to the normal title bar 1101 on the chat history display.

[0063] FIG. 13 illustrates a detail view display of an inbound chat message 500. The title bar 1301 comprises the sender's presence indicator 904; the sender's nickname 705 or 802; and optionally a time stamp (when the message was sent or received.) If the information in the title bar is too long, the nickname scrolls. In that case, the remaining indicators preferably remain fixed. The content region 1303 comprises an attachment indicator 1302 that notifies the user of the availability of attachments or speech; the full text of the message 1309; a separator 1304; and the plurality of entries representing other recipients (not including the sender or the receiver). In the example shown in FIG. 13, each entry comprises the user's nickname set 703-705 or 802-803. Alternatively, each entry could comprise only some portion of the nickname set (either the nickname or short name) or some other type of display identifier. The left softkey label 606 is "cancel". Single-clicking and click-holding the left softkey exits the display and restores the previous display. The right softkey label 607 is "write". Single-clicking the right softkey moves the user to a message editor display described in more detail in FIG. 14. Click-holding the right softkey presents the user options such as playing back the available speech; viewing or storing available attachments; locking the entry in the chat history display; saving the inbound chat message in permanent storage 305; moving to the next or previous chat message, replaying to only the sender or one of the other recipients (i.e., initiating a new thread), and so on. If the user pushes-to-talk, the detail view display is exited. The user moves to the chat history and begins talking to the sender (unless the user is the sender) and all other recipients. Playback of any queued speech is abandoned in that case.

[0064] FIG. 14 illustrates a text message editor display. In this example, the title bar 1401 comprises a plurality of target recipient nicknames 704 or 802 and a single action label that indicates

to the user that he or she is composing a message. The title bar 1401 scrolls if the contents are too long. A text entry area 1402 is provided below the title bar 1401 for composing text messages. The left softkey label 1404 is "cancel". Single-clicking and click-holding the left softkey exits the display, preferably abandons the contents, and restores the previous display (except in the case where the previous display was a detail view display, in which case the detail view display's previous display is restored instead of the detail view display.) The right softkey label 1403 is "send". Single-clicking the right softkey causes the software to build and send an outbound text message 400. Click-holding the right softkey provides the user a set of options such as attachment of other content (e.g., ring tones, etc.), spell checking the message, displaying the full details of the recipients and so on. Preferably, if the user pushes-to-talk, the display is exited, its contents are abandoned; the user moves to the chat history and begins talking to selected recipients. Playback of any queued speech is also abandoned in that case.

[0065] The present invention is not limited to multi-modal chatting between humans. Multi-modal chatting can include machines. There exists text-based chatting systems, such as those deployed by Active Buddy, Inc., that allow users to interact with inventive services in the network using a chat metaphor. Unlike these systems, however, the systems disclosed herein allow the chatting dialogue to use both text and speech. For example, a user wishing to get status on a delivery of a package may send a speech message to a package deliver service presence. The speech would include at least the package identifier. The automated response service, using speech recognition techniques known in the art, determines the user's request and composes a response. That response can be speech based (e.g., it may send a speech message indicating it wasn't able to understand the request,) or it can be textual (e.g., the list of details of the package in route to its destination.) The service subscribes to the user's presence. The service sends the results back to the user when it notices the users presence's status allows sending the details in the preferred format.

[0066] The inventive systems also allow services to incorporate commands that can be fulfilled at either the mobile terminal 100 (e.g., initiate a phone call) or at the server complex 204 (possibly in conjunction with other services in the network), or some combination thereof. For example, an individual chatting with another user may at some point wish to initiate a phone conversation. Preferably, the user requests the server complex 204 to initiate a phone conversation

by sending a command from the mobile terminal 100 to the server complex 204 comprising at least the information needed to establish a phone call between the sender and the target recipient. The server complex 204 initiates a request to a Voice Over IP (VoIP) telephony system. That system then establishes the closest telephony access points to the end points and sets up a call by calling back the sender and the target user routing the calls between those access point using such common protocol as Session Initiation Protocol (SIP) and Real-Time Transport Protocol (RTP). The system may use a chatting interface to collect and establish the details of the call (as described earlier) or it may collect the information and initiate a command using common techniques known to those with ordinary skill in the art. In an alternative approach, the server complex 204 sends a command back to the mobile terminal 100 comprising at least the target's phone number. The mobile terminal 100 then initiates a telephony call with the target. Conventional techniques may be used to establish a phone call at the mobile terminal 100.

[0067] The quality characteristics of connections over wireless data networks can change with time. For example, a mobile user can move into a no coverage area where the data connection is dropped. The connection can be re-established later when coverage is available again, however, in the process the mobile terminal 100 may acquire a new IP address. Consequently, the server complex 204 is left unable to forward messages to the mobile terminal 100. To deal with this, the system disclosed herein uses a session identifier to describe the connection between a particular mobile terminal 100 and the server complex 204. Whenever a mobile terminal re-establishes a connection (after losing it due to loss of coverage, as an example) the mobile terminal 100 re-uses the session id of the interrupted session. The server complex 204 then rebinds the new connection to the existing session. If the mobile terminal 100 does not reconnect within a given timeout period, the server complex 204 can terminate the session. Other events causing a disconnection can include a lost session termination command sent from the mobile terminal 100, improper shut down of the chat application at the mobile terminal 100, battery failure, and the like.

[0068] Preferably, all routing that occurs within (or among) server complexes 204 is done using the session ids. A session id is preferably used instead of a client id because a user may choose to terminate a session and establish another. In this manner, all messages bound to the terminated session may be removed from the system. Only transactions associated the active sessions are

maintained. Also, in a distributed server complex 204 environment where there are many message broadcasters 303 (i.e. physical server hosts), the client may attach to different hosts servers. Using session ids provides a simple means to find where the client is currently connected. In addition, on re-establishing a connection, the server complex 204 can use what is commonly known in the art as sticky load-balancing switches that direct a re-connecting client to physically re-establish its connection with its previous host server based on the session id (even in cases where the IP address of the mobile terminal 100 may have changed.)

[0069] In addition, many wireless operator networks do not allow unsolicited network-initiated messages to reach the mobile terminal 100. Network-initiated messages, as they pertain to the systems described herein are messages going from the server complex 204 toward the mobile terminal 100 that appear to the network operator as if it was unsolicited by the mobile terminal 100. This is a common problem in chatting environments since a message broadcaster 303 commonly sends unsolicited inbound messages 500 to the recipients of a message. To overcome this, the system uses keep-alive strategies. These strategies vary depending on the data transfer protocol established between the particular mobile terminal 100 and the server complex 204. The keep-alive strategies involve periodically sending a message from the mobile terminal 100 to the server complex 204. The keep-alive message appears to the mobile network as a request. Subsequent messages sent back to the mobile terminal 100 can then be considered by the operator as responses to requests as long as the messages sent to the mobile terminal 100 originate from the same address the mobile terminal 100 sent the keep alive message to. The frequency of the keep-alive messages is a matter of design choice and transfer protocol used. When HTTP is used as the transfer protocol, the system uses a polling mechanism. Using this mechanism, the keep-alive message is sent frequently and acts as a poll to determine if there are any pending messages at the server complex. If there are pending messages, those messages are sent back as a response to the polling request. TCP and or UDP do not require a polling mechanism and can use keep-alive techniques, such as simply sending at least the session id in a message to the server complex 204 with a significantly longer time between messages. Sending keep-alive messages may be optimized. For instance, the keep-alive messages do not have to be sent when outbound messages 400 have been recently sent from the mobile terminal 100 to the server complex 204.

[0070] Preferably, all messages sent to the mobile terminal 100 from the server complex 204 go through the same router and possibly the same physical host server that the mobile terminal 100 attaches to in the server complex 204. This ensures that the operators can treat the messages as responses to a mobile terminal's 100 requests. Other techniques to make traffic appear to originate from the same location, such as address mapping and the like can also be used by the system.

[0071] In addition, keep-alive messages work in conjunction with other techniques described above to inform the chat server complex 204 if the address of the mobile terminal has changed. This is especially useful in cases where UDP is used as the transport protocol. On every keep-alive message sent, the server complex 204 notes the address of the mobile terminal 100. If the address changed, the server complex 204 then rebinds the session id to the new address. As such, the keep-alive message may still benefit the system even if the operator does not block network-initiated messages.

[0072] It is possible that the server complex 204 is unable to deliver a message to a mobile terminal 100 because it doesn't have the most up-to-date address -- the address of the mobile terminal 100 may have changed before a keep-alive message is sent. In this situation, the system may, for example, hold on to the undelivered message for a period until the next keep-alive message arrives; it may drop the message and inform the sender that it failed to send the message; or it may send the message using some out-of-band mechanism, such as the out-of-band mechanism described in connection with FIG. 15.

[0073] A problem in some currently deployed wireless packet data networks is communication channel resource contention. While a wireless data connection is established, some systems (e.g., CDMA's 1xRTT) can lose the capability to route telephony calls and other wireless related services to the mobile terminals 100. As such, the keep-alive strategy used by the system described above can become problematic. To solve this problem, the preferred embodiment uses a back-off strategy that is based on predicting the user's involvement in the chatting service. The back-off strategy uses a dynamic timeout scheme. For example, when the mobile terminal 100 is presenting a chat history display where there are active updates (i.e., inbound messages 500) and the likelihood of participation is high, the length of timeout is significantly longer than when there are no updates or when the mobile terminal 100 is presenting a buddy list display and the likelihood of

participation is lower. The purpose of the timeout is to guard against cases where the user might have forgotten or otherwise inadvertently left the chatting application running preventing any incoming telephony calls or other communications from reaching the user. When a timeout occurs, the user is given the opportunity to continue the session. A prompt notifying the user that the connection between the mobile terminal 100 and the server complex 204 is about to be severed. The user can choose to cancel the action and keep the connection alive. Otherwise, if the user doesn't cancel within the allotted time to respond, the connection is automatically terminated. When the mobile terminal is disconnected, it can no longer receive chat messages through the previously established packet data connections.

[0074] Alternative disconnect schemes can be used. For example, the chatting program running on the mobile terminal may choose to periodically reconnect with the server complex 204 to see if there are any messages pending delivery. If not, the chatting program on the mobile unit may automatically disconnect. Otherwise, the messages are delivered and the program updates the chat history display as described above and resumes operations until either the user terminates the session or a timeout occurs as described above.

[0075] FIG. 15 illustrates how the overall system architecture of a wireless communication system comprising the elements described in FIG. 2 is extended to integrate with a legacy mobile terminal 1502. Within the context of the systems described herein, a legacy mobile terminal 1502 is capable of transmitting and receiving at least text messages over some well-established conventional mechanism, such as Short Messaging Service (commonly referred to in the art as SMS messages or simply SMS.) However, unlike a mobile terminal 100, the legacy mobile terminal 1501 lacks the elements required to communicate directly with the chat server complex 204 and or to directly participate in any chatting transactions described herein.

[0076] To integrate a legacy terminal, the chat server complex 204 communicates with at least one SMS aggregator 1501 via the communication network 203 (such as the Internet or World Wide Web). The SMS aggregator 1501, which can be a commercially-available device, comprises all those elements needed to allow entities that may not have any direct affiliation with wireless carriers to inject SMS messages into at least one wireless carrier network 202. The SMS aggregator 1501 takes as input (via its interfaces to the communication network) a description of the SMS. The

description comprises all the elements needed to send a message to the target mobile terminal 100. The description comprising at least the originator's address, such as a mobile terminal's 100 address, or a special return address known as a short code or a long code, the destination address, such as a terminal 100 address, and the content of the message.

[0077] The SMS aggregator 1501 communicates with the target operator via its wireless carrier network 202 interfaces and injects an SMS on behalf of the requestor. In this system, the requestor is the chat server complex 204 or any agents acting on its behalf.

[0078] The mobile terminal 100 allows a user to enter the address of a legacy mobile terminal 1502. This can be done in an ad-hoc fashion where the user is prompted for the address at the time of creating the outbound message 400. The address in this context is typically the telephone number of the mobile terminal 1502. Alternatively, for a user frequently targeting a particular legacy mobile terminal 1502, the system may provide that user means to build a buddy presence in the system comprising at least a presence data record 700 and a nickname data record 800. Conventional data collection and construction methods for the processes of adding a legacy buddy or using ad-hoc addressing, can be employed.

[0079] The legacy address, be it the actual address or a recipient's id of legacy buddy, can be used in the same manner as any other recipient id. It is placed in the list of recipient ids (403 and 502) in outbound messages 400 and inbound messages 500. In the case where the actual address is used, the address presentation is usually distinguishable from non-legacy addresses. That allows the system to process the address in a different manner than the remaining recipient ids.

[0080] The legacy address can be a part of a group communication with at least another legacy mobile terminal 1502 and at least another [non legacy] mobile terminal 100. Alternatively, the legacy address can be the only address supplied in a one-to-one communication with the legacy terminal. The legacy address can be part of initiating a new thread of conversation, or it can be part of a reply to an existing thread.

[0081] In the case of ad-hoc entry of legacy address, the system has to establish recipient fields (503-505) in inbound messages 500. The system may place generic representation in these fields. For example, it can use the address as the recipient's name 503. Where available, the system may query public address books to find the actual name. Other techniques may also be deployed.

For example, in cases where the information is considered private and the system is not permitted to present it, the mobile terminal 100 (or the server complex 204) may replace the information with proxy representations.

[0082] The outbound message 400 carrying a legacy address is sent to the message broadcaster 303 in the chat server complex 204. The message broadcaster 303 detects the legacy address of the legacy mobile terminal 1502 (either the actual address or a reference to it using a legacy buddy recipient id). For each non-legacy mobile terminals 100, the message broadcaster 303 builds inbound messages 500 as described above herein.

[0083] For each of the target legacy terminals 1502, the broadcaster 303 sends an SMS request to the SMS aggregator 1501. To do this, the broadcaster 303 sets the originator address of the SMS request to the mobile address of the sender's mobile terminal 100 initiating the message. The SMS aggregator 1501 sends an SMS on behalf of the chat server complex 204 and the sending user to the legacy mobile terminal 1502.

[0084] The message sent to the legacy mobile terminal 1502 contains at least the original message. Other information can be included in the message. For example, the message may comprise the list of other recipients, the thread identification, the time of delivery, a service provider identity, an advertisement, or the like. In the case of a voice message that can not be delivered via the out-of-band messaging scheme, the chat server complex 204 can replace the voice content with textual content. Where speech-to-text service are available, the chat server complex 204 can place the derived text message whole or truncated. Otherwise, the chat server complex 204 can place a representation of the discussion. For example, it may drop the voice part and only send the text part similar to what is displayed on a chat history display when an inbound voice message is received.

[0085] Once the SMS is delivered to the recipient's legacy mobile terminal 1502, the SMS application native to the legacy mobile terminal 1502, which typically resides in an application storage and is executed on a CPU within terminal 1502 intercepts the SMS and notifies the user allowing the user to read the contents of the message. The recipient may respond to the message using the SMS application on the legacy mobile terminal 1502. In that case, the application builds a reply SMS that targets the sender using the originator address in the original inbound SMS that was supplied by the chat server complex 204. In this situation, the message does not go back to the chat

server complex 204. Instead, the reply SMS goes directly to the target mobile terminal 100 via the wireless carrier's network 202. When the response reaches the target mobile terminal 100, the chat application, intercepts the message and displays it as part of the chat history display as described in FIG. 11) as inbound message.

[0086] Some mobile terminals do not allow the chat application to access the out-of-band messaging system. In that case, the user would either have to respond using the native out-of-band application, move the message (in part or in whole) between the two applications, or otherwise manage the message in the application.

[0087] Currently most SMS systems do not comprise the elements necessary to allow the chat server complex 204 to predictably embed any information that would manifest itself in an SMS response coming back from the legacy mobile terminal 1502 (such as a thread id, list of recipients, or the like.) As such, the reply SMS is not guaranteed to have any identification that would allow the chat application program on the mobile terminal 100 to bind the inbound message to an existing thread. As a result, the message may appear in the chat history display as a new message in a new thread. The client on the mobile terminal 100 under these conditions can generate the thread id on behalf of the legacy mobile terminal 1502. In the event the user replies, the new message and the legacy mobile terminal's 1502 address (i.e., the originator address of the reply SMS address) are sent to the chat server complex 204.

[0088] In an alternate embodiment, the chat server complex 204 does not place the sender's mobile address as the SMS originator address as described in the preferred embodiment. Instead, the chat server complex 204 uses a long code or alternatively, a short code. In this case, the SMS reply from the legacy mobile terminal 1502 goes back to the server complex 204. The chat server complex 204 can de-multiplex the messages from the legacy mobile terminals 1502 over of codes using various conventional techniques to bind a reply SMS to an existing thread. In this case, the message broadcaster 303 in the chat server complex's 204 can broadcast the message back to all the participants in the thread via the appropriate channels. For example, if another legacy mobile device was participating in the thread, the message broadcaster 303 could send the message via the SMS aggregator 1501 as described above herein.

[0089] The legacy integration role of the message broadcaster 303 can be performed at the mobile terminal 100 instead of in the chat server complex 204. In this case, the mobile terminal 100 does not use the SMS aggregator 1501. Instead, the mobile terminal 100 could inject the SMS directly into at least one wireless carrier network 202 for each of the targeted legacy mobile terminal(s) 1502.

[0090] Other out-of-band communication mechanisms can be used such as email, Multimedia Messaging Services (MMS), or the like. In such cases, other gateway forms replace the SMS aggregator 1501. Other delivery mechanisms may allow embedding other information in the reply message from the legacy terminal, further allowing the system to bind the replies to the existing threads.

[0091] A problem confronted by some mobile terminals 100 is loss of application context when the user initiates another, non-chat application on the terminal 100. For example, when a user on a mobile terminal 100 receives an incoming telephony call, the mobile terminal 100 may drop data connection resources, suspend or halt executing the chat program, and/or otherwise disable the chat application from communicating and fulfilling chat transactions with the chat server complex 204. In this case, the user may shutdown the chat application when there is little perceived activity or the chatting program may disconnect automatically to free up resources, as described above herein. As such, what was once considered a valid mobile terminal 100 for chatting according to the systems disclosed herein may act in a manner indistinguishable from that of a legacy mobile terminal 1501. The techniques that are described above as methods to integrate the chat environment with legacy mobile terminals 1502 can be applied in these situations as well. The out-of-band delivery of messages (via SMS for example) acts as a hailing to the user. It informs the recipient that a chat thread is in progress. The user may then choose to re-activate the chat program and resume the chat conversation. Alternatively, if resumption is not possible or convenient, the user may still choose to participate using the available out-of-band mechanism. In cases where the chatting application has access to the incoming out-of-band message, the chatting application on the mobile terminal 100 may extract the content and place them in the chat history display. It may also allow the recipient to reply to the sender. The reply may go back as an out-of-band message or it may go through the chatting system as an outbound message 500 band through the chat systems disclosed herein.

[0092] The presence status 702 represented on the mobile terminal 100 by presence status indicators 904 and 911 describes what is referred to as availability. Availability in such contexts indicates that a user is able to receive inbound messages 500 (and optionally the type of inbound messages 500.) A status that indicates lack of availability in such contexts presents the fact that a user is unable to receive inbound messages 500 (or a particular type thereof). As such, either the system will drop messages targeting the unavailable user, or it will store the messages for some time until the user is available again. For example, the system may always attempt to deliver the message (even to legacy mobile terminals 1502). In addition, the availability (as defined by the current art) of legacy mobile terminals 1502 may not be determinable. Furthermore, it could be argued that the usefulness of availability (as defined by the current art) is somewhat diminished in cases where the mobile terminal 100 (and 1502) accompany the user the majority of time.

[0093] The presence status 702 can implement availability as defined above. In addition, the systems use presence status 702 and presence status indicators 904 and 911 to communicate other information, such as message delivery type. To accomplish this, the user on the mobile terminal 100 is presented with a representation of the means the system will likely use to deliver the message such as using in-band communications over the wireless packet data or through an out-of-band method such as SMS, email, or the like. It may also provide a representation of the subset or type of the messages that are likely be delivered. For example, an SMS-text-only representation can indicate that only the text portions of the message would likely be sent via SMS to the target recipient. As such, any attachments (e.g., pictures) as well as any speech components of outbound messages 400 would likely be dropped or otherwise not delivered to the target recipient. Such representation is better suited to the mobile user. For example, it may communicate to the user the cost associated with the delivery of the message, the expected delays, and or quality of service.

[0094] FIGS. 16-17 show a chat history/text editor display combination in accordance with a preferred embodiment of the present invention.

[0095] FIG. 16 illustrates a terminal screen 1600 in a first display mode. In the first display mode, the screen 1600 presents the chat history 1602, as well as graphic user interface (GUI) controls 1604. Other information can also be presented on the screen 1600, as disclosed herein. As shown in the example, the chat session history 1602 that includes a sequence of messages posted by

participants in the current chat group. As described above herein, the displayed messages identify the sender and show the posted text.

[0096] By activating the GUI controls 1604, a user can selectively place the terminal screen 1600 in second mode, as shown in FIG. 17. For example, in the preferred embodiment, the user may select a reply to message or a compose new message option from the selection list control 1604. In the second mode, the screen 1600 presents the chat history 1702 concurrently with a text edit area 1704. The chat history 1702 continues to be updated and can scroll on the screen while the text edit area 1704 is presented. A text editor resident on the mobile terminal is also activated so that the user can write one or more text messages in the edit area 1704 while simultaneously viewing the chat history 1702 as it progresses. The GUI controls 1604 permit the user to post the messages composed in the text edit area 1704 to the chat session. They are then displayed in the chat history 1702 in chronological order. Preferably, once the user sends the message using the GUI control 1604, the text editor can be deactivated by the user to collapse the text edit area 1704 so that the text edit area 1704 is removed and the screen switches back automatically to the first mode. The chat history 1702 can then be expanded to occupy the entire screen area.

[0097] Preferably, the screen 1600 can be switched back and forth between the first and second modes using a user-selectable area of the mobile terminal GUI, such as a button or selection included in a pull-down menu or toolbar. However, other user-operable switches, such as a momentary contact switch, key pad button(s), configurable soft key(s), or the like can be used to place the terminal display screen into either mode.

[0098] The functionality for the display modes illustrated in FIGS. 16-17 can be implemented by software included in the mobile terminal, and is preferably implemented by the chat client application.

[0099] What has been described above is merely illustrative of the application of the principles of the present invention. Other arrangements and methods can be implemented by those skilled in the art without departing from the spirit and scope of the present invention.

[00100] What is claimed is:

CLAIMS

1. A method of presenting a chat session on the display of a wireless mobile unit, comprising:
showing, on the display, a chat conversation that is progressively updated so that messages included in the conversation scroll on the display;
providing a user-operable switch for selectively activating an edit text message function; and
in response to user activation of the edit text message function via the user-operable switch, presenting a text edit area on a portion of the display while continuing to show the chat conversation on another portion of the display.
2. The method of claim 1, wherein the user-operable switch is a user-selectable area of a graphical user interface presented by the display.
3. The method of claim 1, further comprising:
providing a text edit interface that allows the user to compose a message in the text edit area while the chat conversation progresses.
4. The method of claim 3, wherein the message is a response to the chat conversation.
5. The method of claim 1, further comprising:
providing a user-operable switch for selectively deactivating an edit text message function;
and
in response to a user deactivation of the edit text message function via the user-operable switch, removing the text edit area and expanding the chat conversation to reoccupy the removed text edit area of the display.
6. A wireless mobile unit, comprising:
a screen;

means for displaying on the screen a chat conversation that is updated so that messages in the conversation progressively scroll on the screen;

a user-operable switch for selectively activating a text edit area;

means, responsive to the user-operable switch, for presenting the text edit area on a portion of the screen while continuing to show the chat conversation on another portion of the screen.

7. The wireless mobile unit of claim 6, wherein the user-operable switch is a user-selectable area of a graphical user interface presented on the screen.

8. The wireless mobile unit of claim 6, further comprising:

a text editor allowing a user to compose a message in the text edit area while the chat conversation progresses.

9. The wireless mobile unit of claim 6, wherein the message is a response to the chat conversation.

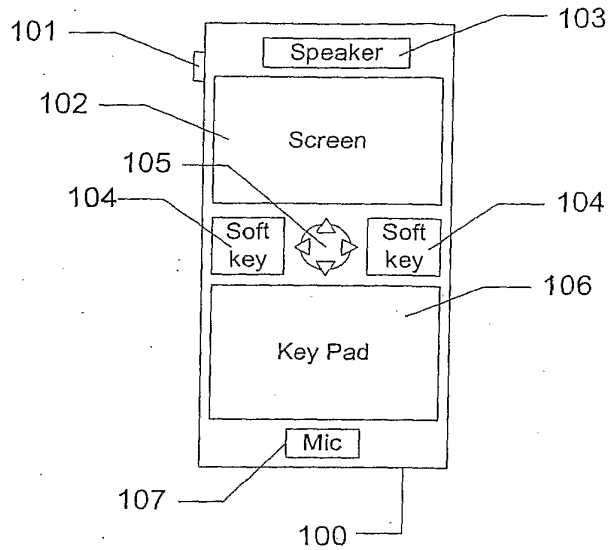


FIG. 1

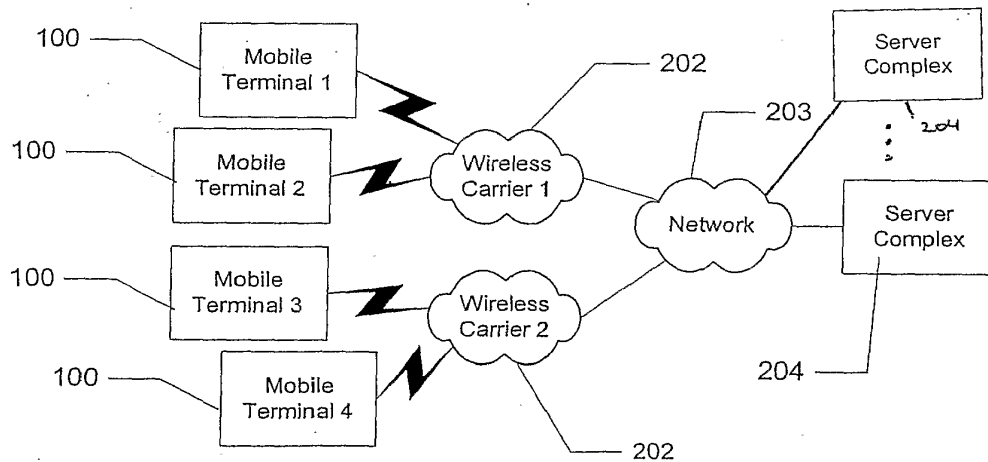


FIG. 2

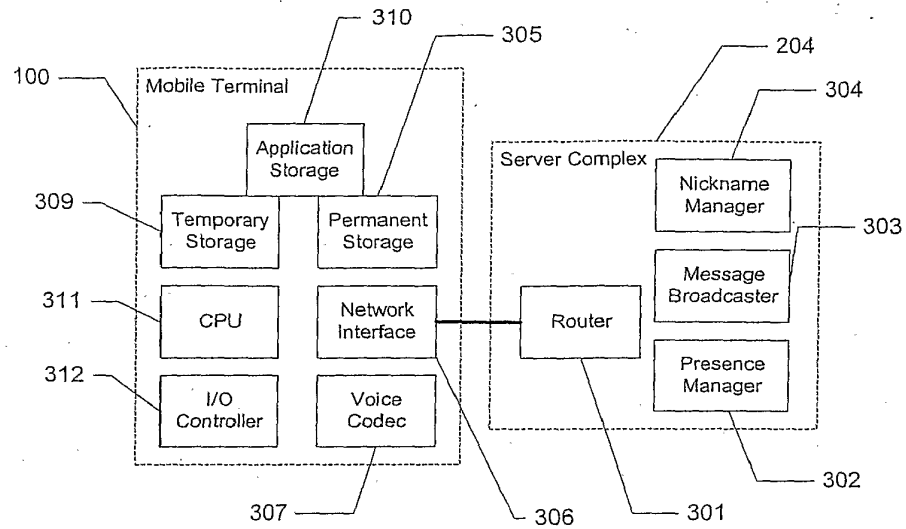


FIG. 3

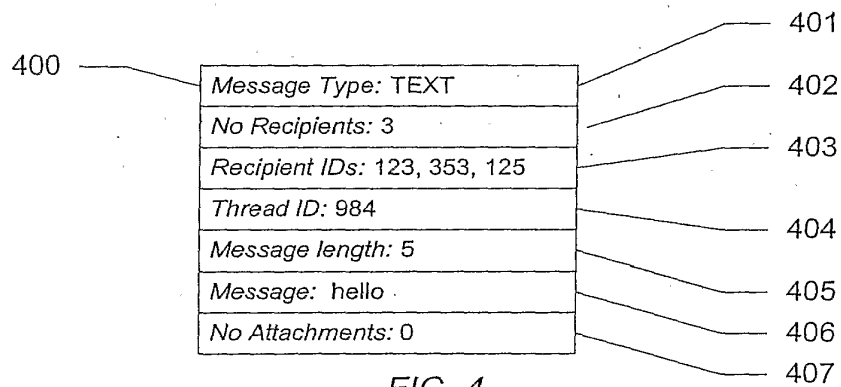
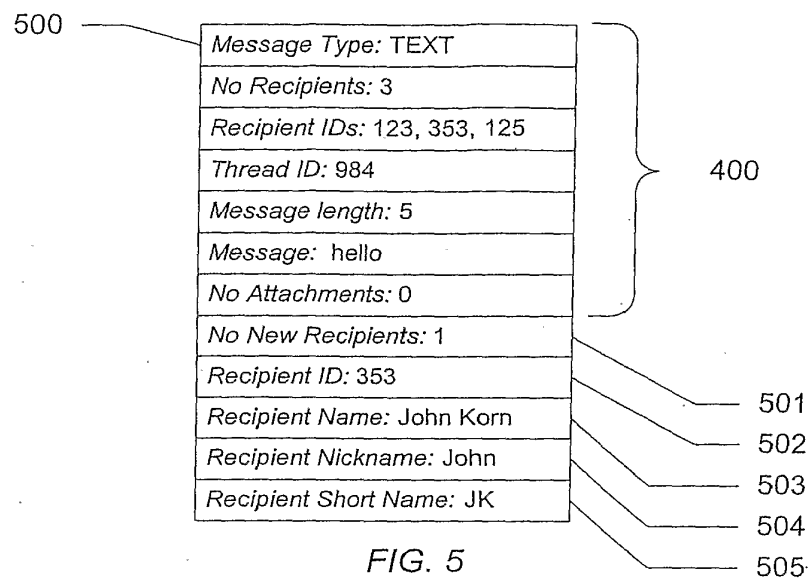


FIG. 4



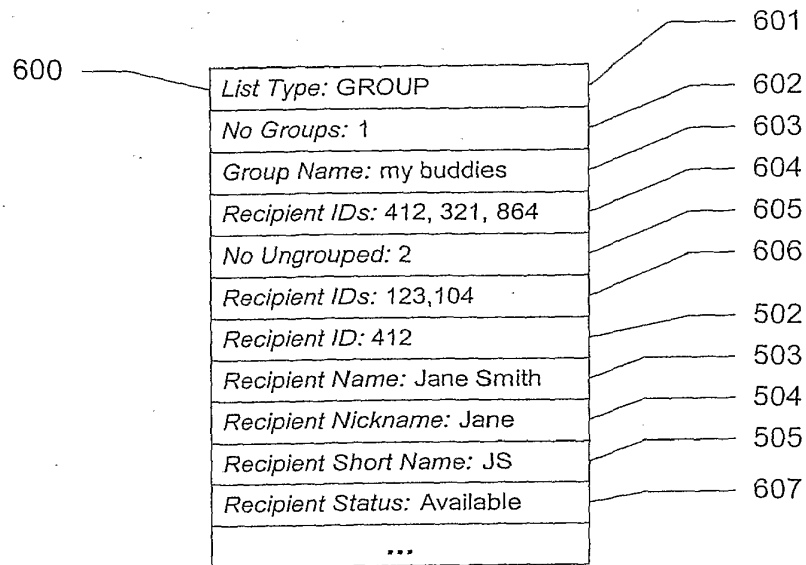


FIG. 6

ID:	Status:	Address:	Public Nickname:	Public Short Name:	Subscriber IDs:
123	Available	123.210.12.112:2016	JimJ	JJ	120, 415, 654
136	Off	113.10.112.10:8012	Chris	CC	345, 246, 235, 346
876	TextOnly	123.10.112.10:7291	JaneT	JT	102, 349
...					

FIG. 7

ID:	Buddy ID	Nickname:	Short Name:
123	325	Cool	OO
123	124	Dad	D
876	325	BstFrnd	JT
...			

FIG. 8

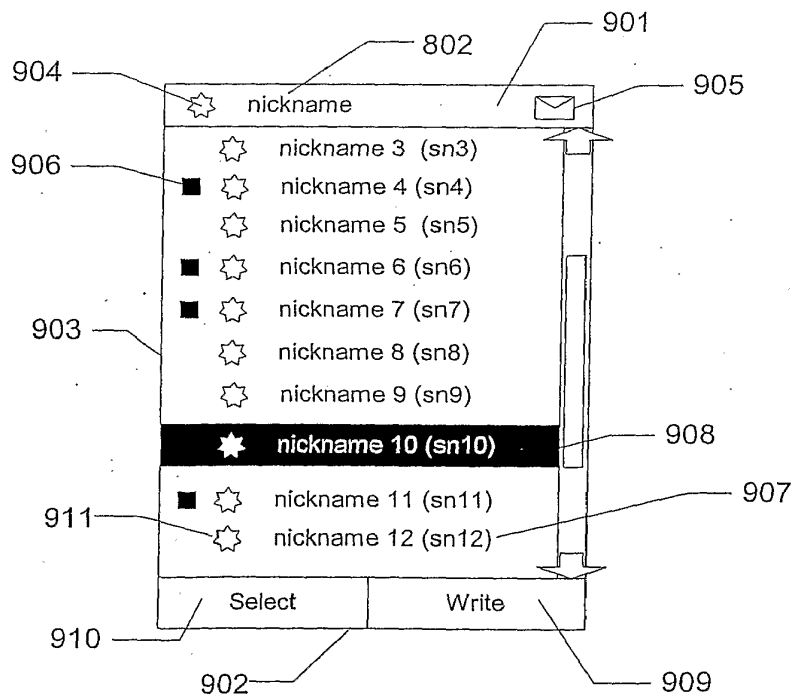


FIG. 9

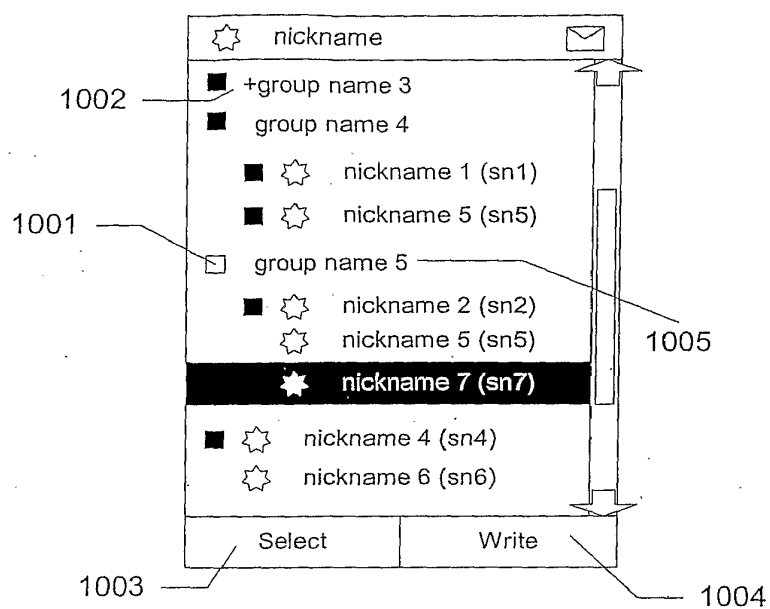


FIG. 10

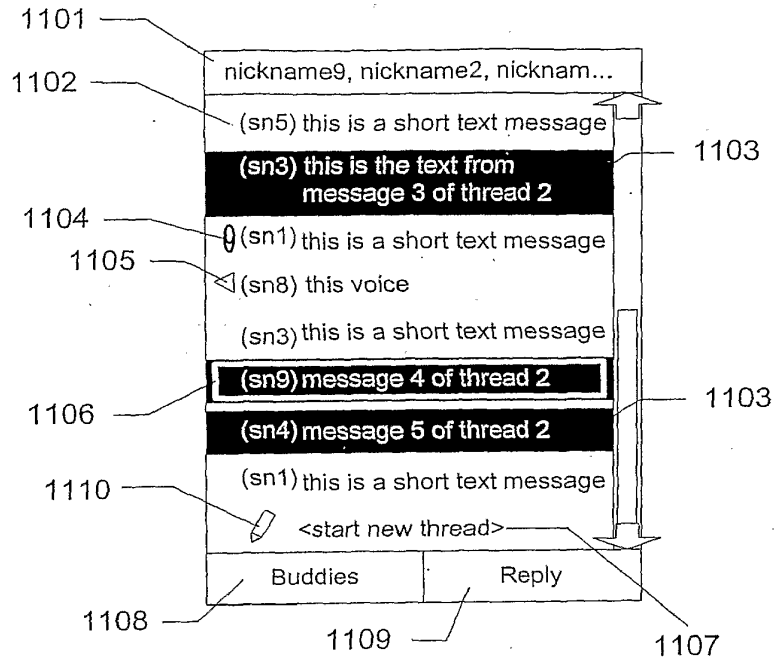


FIG. 11

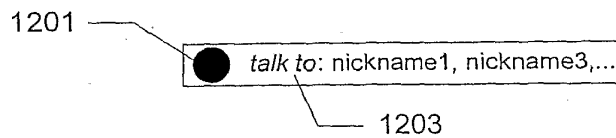


FIG. 12

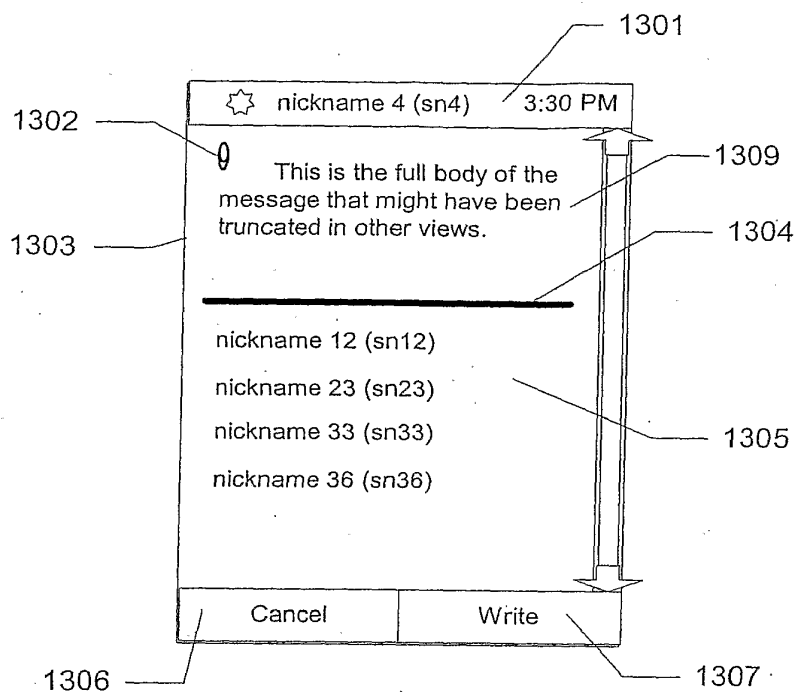


FIG. 13

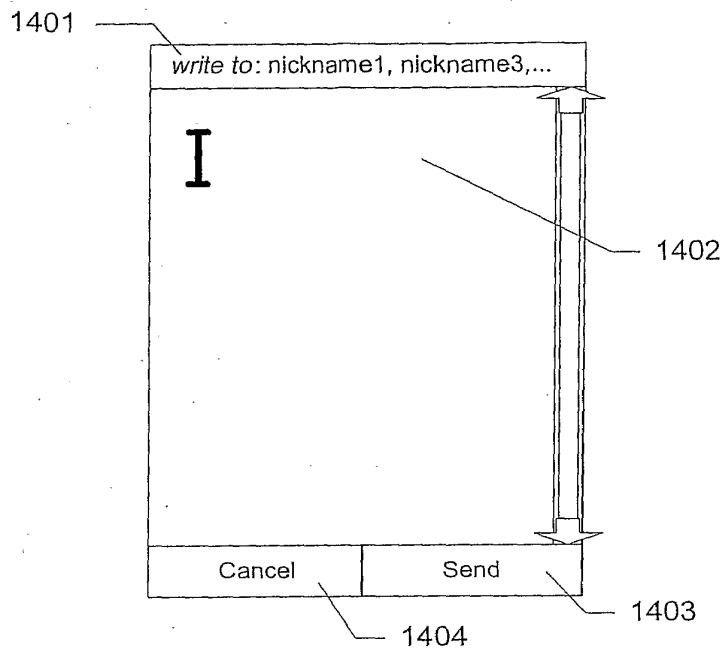


FIG. 14

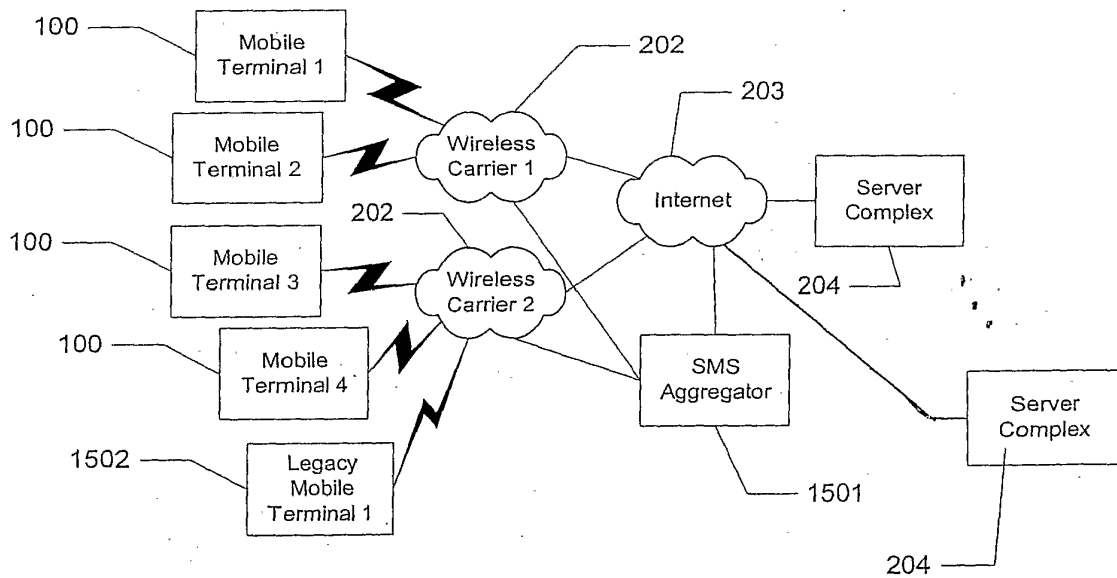


FIG. 15

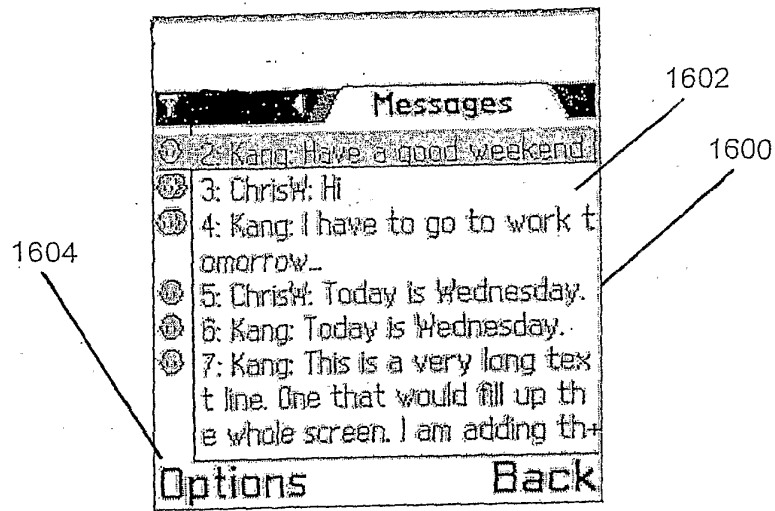


FIG. 16

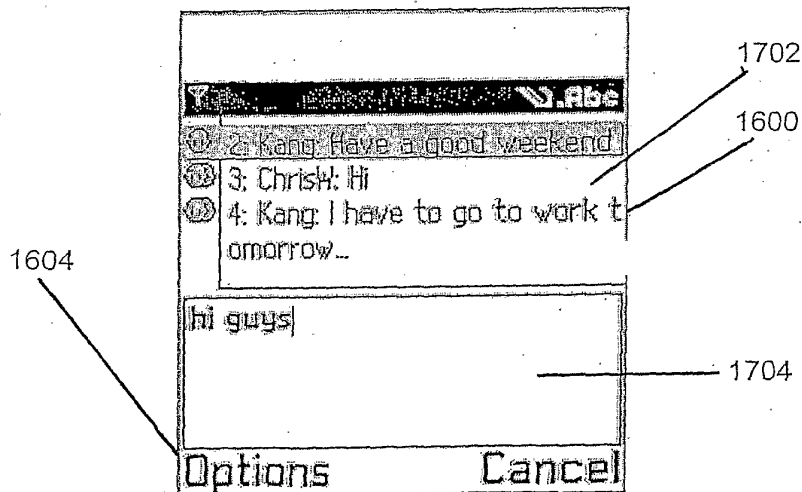


FIG. 17

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22358

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 15/16

US CL : 709/204, 205, 206, 207; 345/751, 752, 753, 758, 759

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, 205, 206, 207; 345/751, 752, 753, 758, 759

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,301,609 B1 (ARAVAMUDAN et al) 09 OCTOBER 2001, ABSTRACT, COL. 3, LINES 25-67 AND COL. 4, LINES 1-64	1-9
Y	US 6,061,716 A (MONCREIFF) 09 MAY 2000, ABSTRACT, FIGURES 4 THROUGH 11.	1-9

☐ 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 relevance

"E" earlier application or patent published on or after the international filing date

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"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

05 September 2003 (05.09.2003)

Date of mailing of the international search report

26 SEP 2003

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

PCT/US03/22358

Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: mobile, pda, palm, wireless, cellular, handheld, collaboration, chat, conference

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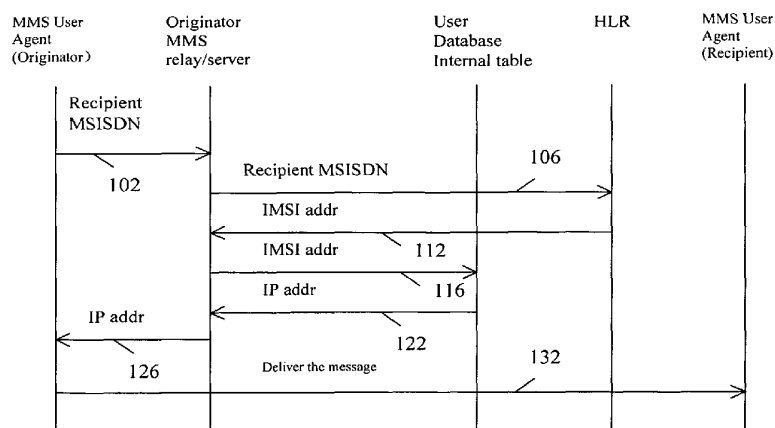
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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, 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 (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (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 patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: WIRELESS NETWORK SYSTEM FOR EFFICIENTLY DELIVERING MULTIMEDIA MESSAGES



(57) Abstract: The present invention provides a wireless network system that enables direct wireless delivery of a multimedia message from a first MMS user agent to a second MMS user agent. In accordance with one embodiment of the invention, the wireless network system includes a MMS server that receives, from the first MMS user agent, a request to send a multimedia message to the second MMS user agent. The request includes an identification (ID) number of the second MMS user agent. From a core network, for example, the MMS server obtains an Internet address of the second MMS user agent based on the ID number of the second MMS user agent, if the ID number is not an Internet address of the second MMS user agent. Then the MMS server forwards the Internet address to the first MMS user agent to enable the first MMS user agent to wirelessly deliver the multimedia message directly to the second MMS user agent using the Internet address. Therefore, by not involving a MMS server in delivering multimedia messages, a substantial amount of network resources is saved, and delivery speed of multimedia messages is significantly increased. As a result, the performance of the overall network system is greatly improved.

WO 2004/052033 A1

**Declaration under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations 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, 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, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY,

KG, KZ, MD, RU, TJ, TM), European patent (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 patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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.

WIRELESS NETWORK SYSTEM FOR EFFICIENTLY DELIVERING MULTIMEDIA MESSAGES

BACKGROUND OF THE INVENTION

5 The invention relates generally to wireless network communications, and more particularly to wireless network systems and methods for efficiently delivering multimedia messages.

 Mobile terminals (e.g., mobile phones, PDAs, etc.) have become a popular means to communicate with other people. Messages in various forms, e.g., voice,
10 text, data, graphics, audio, video, etc., can be sent and received via mobile terminals. As mobile terminals become more and more popular, numerous functions are added and enhanced. One such function is to allow multimedia messages to be communicated between mobile terminals. Multimedia messaging depends on high speed of transmission. With introduction of advanced wireless communications
15 technologies, such as GPRS (General Packet Radio Service) and high speed 3G (Third Generation Mobile System) technologies, sending and receiving multimedia messages have become practical. In sending and receiving multimedia messages, several industry standards have been proposed. One such standard is the Multimedia Messaging Service (MMS), which is defined by the 3GPP (Third
20 Generation Partnership Project) Technical Specifications: 3GPP TS 22.140, 3GPP TS 23.140 and 3GPP TS 26.140. This standard allows users to use mobile terminals that support the MMS standard, and web sites if the web server supports the MMS standard, to send and receive MMS messages via a MMS user agent in formatted text, graphics, photographic images, audio and video clips. A MMS user
25 agent refers to an application residing on a user equipment (UE), a mobile station (MS) or mobile terminal or an external device that performs MMS-specific operations

on a user's behalf. Thus, a MMS user agent may be an application residing on a mobile phone or even a web server.

The MMS standard supports standard image formats such as GIF (Graphics Interchange Format) and JPEG (Joint Photographic Expert Group), video formats
5 such as MPEG (Motion Pictures Experts Group) 4, and audio formats such as MP3 (MPEG-1 Audio Layer-3) and MIDI (Musical Instrument Digital Interface). Thus, video sequences, audio clips and high-quality images can be downloaded to the mobile terminals from WAP (Wireless Application Protocol) sites, transferred to the terminals via an attached accessory, such as a digital camera, or received as a
10 MMS message. Photographs, audio and video clips may be stored in the mobile terminals for later use. MMS messages can also be sent either to another MMS-enabled mobile terminals or to an e-mail address.

FIG. 1 shows a MMS reference architecture 10 as defined by 3GPP (Third Generation Partnership Project), which is an organization that develops
15 specifications for a 3G system. In FIG. 1, a MMS relay/server 20 is connected to various elements, including a billing system 32, MMS VAS (value added service) applications 34, MMS user databases 36, a HLR (home location register) 38, and a plurality of external servers 42 to 48 for providing functionalities such as E-mail, fax, SMS, etc. MMS relay/server 20 is also connected to a "foreign" MMS relay/server
20 40, which is located in a MMSE (Multimedia Messaging Service Environment) different from the MMSE in which MMS relay/server 20 is located. A MMSE refers to a collection of MMS specific network elements under the control of a single administration and may include more than one MMS relay/server. Connection between MMS relays/servers 20 and 40 allows communications between a MMS
25 user agent A in one MMSE and a MMS user agent in another MMSE.

FIG. 2 is a simplified diagram illustrating how a multimedia message (MM) is delivered between two MMS user agents within the same MMSE in a conventional way. A MMS user agent provides the following application layer functionalities: initiating delivery of a MM to another MMS user agent, retrieval of a MM, terminal

capability negotiation, and optionally MM composition, MM submission, and MM presentation, etc. A MMS relay/server, on the other hand, is responsible for providing storage, generating notifications and reports, and general handling of messages. A MMS relay/server also provides other functionalities such as
5 generating charging data records (CDR) for billing purposes. In FIG. 2, a MMS user agent A can send a MM to another MMS user agent C and vice versa, via MMS relay/server 20. For example, a MMS user agent A can submit a MM to MMS relay/server 20 via WAP or TCP/IP. MM relay/server 20 will forward the MM to user agent C.

10 FIG. 3 is a simplified diagram illustrating how a MM is delivered between two MMS user agents located in two different MMSEs in a conventional way. As shown in FIG. 3, a MM user agent A can send a MM to MMS user agent B via MMS relay/server 20 via WAP or TCP/IP. MM relay/server 20 will forward the MM to user agent B via MM relay/server 40.

15 The conventional ways of delivering MMs between different user agents in the same or different MMSEs, as illustrated above, suffer from serious drawbacks. A main drawback is that it wastes valuable network resources, particularly with respect to MMS relay/servers since the MMS relay/servers are required to process and forward voluminous MMs exchanged among numerous MMS user agents. In
20 other words, all the MMs sent to or pushed from a MMS user agent must go through at least one MMS relay/server. For example, the MMS relay/server will have to receive a MM from a MMS user agent and then forward the same message to another MMS user agent, even if the two MMS user agents are located in the same MMSE. Thus, at least two transactions are required, i.e., delivering a MM by a MMS
25 user agent to a MMS relay/server and then forwarding the same MMS by a MMS relay/server to another MMS user agent. If the two MMS user agents are located in two different MMSEs, an additional transaction is required to transfer the MM from one MMS relay/server and another MMS relay/server. This will inevitably cause significant delays in delivering the MMs. Further, it requires high performance
30 servers with a very large storage capacity since MMs are typically very large in size.

This will add considerable costs for the MMS service provider to deploy and maintain the network.

Therefore, there is a need to provide a wireless network system for efficiently delivering MMs that not only saves the valuable network resources, but also speeds
5 up delivery of the MMs between two MMS user agents.

SUMMARY OF THE INVENTION

The present invention provides a wireless network system that enables direct wireless delivery of a multimedia message from a first MMS user agent to a second MMS user agent.

10 In accordance with one embodiment of the invention, the wireless network system includes a MMS server that receives, from the first MMS user agent, a request to send a multimedia message to the second MMS user agent. The request includes an identification (ID) number of the second MMS user agent. From a core network, for example, the MMS server obtains an Internet address of the second
15 MMS user agent based on the ID number of the second MMS user agent, if the ID number is not an Internet address of the second MMS user agent. Then the MMS server forwards the Internet address to the first MMS user agent to enable the first MMS user agent to wirelessly deliver the multimedia message directly to the second MMS user agent using the Internet address.

20 Therefore, by not involving a MMS server in delivering multimedia messages, a substantial amount of network resources is saved, and delivery speed of multimedia messages is significantly increased. As a result, the performance of the overall network system is greatly improved.

25 Other objects and attainments together with a fuller understanding of the invention will become apparent and appreciated by referring to the following description and claims taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained in further detail, and by way of example, with reference to the accompanying drawings wherein:

5 FIG. 1 shows a MMS reference architecture as defined by 3GPP;

FIG. 2 is a simplified diagram illustrating how a MM is delivered between two MMS user agents within the same MMSE in a conventional way;

FIG. 3 is a simplified diagram illustrating how a MM is delivered between two MMS user agents located in two different MMSEs in a conventional way;

10 FIG. 4 is a simplified diagram showing a two-way wireless messaging system according to a first embodiment of the invention;

FIG. 5 shows how a recipient's IP address is resolved by using the recipient's MSISDN in the wireless network system in FIG. 4;

15 FIG. 6 is a simplified diagram showing a two-way wireless messaging system according to a second embodiment of the invention; and

FIG. 7 shows how a recipient's IP address is resolved by using the recipient's MSISDN in the wireless network system in FIG. 6.

Throughout the drawings, the same reference numerals indicate similar or corresponding features or functions.

20

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 4 is a simplified diagram showing a two-way wireless messaging system 60 according to a first embodiment of the invention. In system 60, a MMS relay/server 20' serves two MMS user agents A and C (e.g., two mobile phones or one web site and one mobile phone) located within the same MMSE. By using peer-to-peer technology, MMS user agent A can directly deliver MM contents to MMS user agent C and vice versa, without going through MMS relay/server 20'. For MMS messaging, MMS relay/server 20' is involved only in the recipient's address resolution, billing and authentication. In this way, the network operator can save huge amount of network resources resulting in substantial savings, while may still be able to charge the same fees to MMS users.

To enable peer-to-peer delivery of MMs, several approaches are available. In a preferred embodiment of the invention, the IP (Internet Protocol) based packet switched wireless network system (e.g., IP based GPRS network system) is used, and the recipient's IP address is resolved by using its unique MSISDN (Mobile Station International ISDN Number), as illustrated in FIG. 5. For a mobile phone, its unique MSISDN is the associated telephone number. For wireless based web sites, their allocated IP addresses are used directly.

As shown in FIG. 5, an originating MMS user agent referred to as originator (e.g., MMS user agent A) sends a request to an originator MMS relay/server (e.g., MMS relay/server 20') to obtain the MSISDN of a receiving MMS user agent referred to as recipient (e.g., MMS user agent C) (step 102). Upon receiving the request from the originator, the MMS relay/server sends a request for the corresponding IMSI (International Mobile Subscriber Identity) address to the HLR (step 106), which stores the mapping table for MSISDN to IMSI. The IMSI address is used by the network system to uniquely identify a user agent and corresponds to the MSISDN on a one-to-one basis, as illustrated in Table 1. In response to the request, the HLR returns the IMSI address to the MMS relay/server (step 112).

Table 1: An exemplary format of the mapping table for IMSI to MSISDN

IMSI	MSISDN	Other Data
310-68-4451000	813-567-1234	...
310-68-4451001	813-567-4355	
310-68-4451002	813-567-8479	
...	...	

After receiving the IMSI address, the MMS relay/server sends a request with the IMSI address to the user databases or an internal table in the core network (e.g., in the GGSN (Gateway GPRS Support Node) or the HLR) in order to obtain the recipient's IP address (step 116). IP addresses corresponding to the IMSI of a wireless device may be configured in the user databases or internal table. If the IP address can be found for the recipient from the user databases or internal table, as illustrated in Table 2, the address will be returned to the MMS relay/server (step 122), which will forward it to the originator (step 126). After receiving the IP address, the originator can directly deliver the message contents to the recipient by using the known IP technology (step 132).

Table 2: An exemplary format of relevant portions of user databases/internal table

IP address	IMSI	Other data
172.31.1.2	310-68-4451000	...
172.31.1.3	310-68-4451001	
172.31.1.4	310-68-4451002	
...	...	

On the other hand, if no corresponding IP address is found for the recipient in the user database or the internal table, it may be because the recipient's terminal doesn't support the IP technology or because it is simply powered off. In such case, the MMS relay/server will inform the originator, and the originator will deliver the message contents in a conventional way.

In the above, the terminal capability negotiation for determining whether a specific standard (e.g., JPEG) is supported by the recipient would be based on the

Internet standard (e.g. CC/PP (Composite Capability/Preference Profiles)), and can follow the standard IP based MMS implementation. Further, the originator MMS relay/server can collect the billing information for sending the MM at the time of contacting the HLR and other network nodes for the information of recipient.

5

FIG. 6 is a simplified diagram showing a two-way wireless messaging system 150 according to a second embodiment of the invention. In system 150, MMS user agents A and B are respectively served by two MMS relays/servers 20' and 40' respectively located in MMSE's A and B. Preferably, the two MMSE's are
10 connected to an IP network and operated by the same telecom operator to ensure that the same mechanism for IP address allocation is used. By using peer-to-peer technology, MMS user agent A can directly deliver MM contents to MMS user agent B and vice versa, without going through the two MMS relays/servers. Like the first embodiment in FIG. 4, for MMS messaging, MMS relays/servers 20' and 40' are
15 involved only in the recipient's address resolution, billing and authentication. As a result, a huge amount of network resources can be saved with substantial savings. In the meantime, the network operator may still be able to charge the same fees to MMS users.

FIG. 7 shows how the recipient's IP address is resolved by using the
20 recipient's MSISDN in the wireless network system illustrated in FIG. 6. In this case, the originator MMS relay/server relays all requests from the originator to the recipient (step 204), and relays all responses from the recipient MMS relay/server to the originator (step 224). All other steps are similar to the corresponding steps illustrated in FIG. 5. Therefore, for simplicity the detailed descriptions of these steps
25 are omitted.

In the above, the embodiments of the invention are described in connection with a GPRS network system in which the network layer is based on the IP protocol. In fact, any wireless network system with a MMS implementation in which the underlying network layer is IP based can be used to implement the invention. Such

examples include IP based MMS implementation and WAP based MMS implementation on top of IP protocol. Since the 3G wireless network systems (e.g., CDMA2000, TD-SCDMA, WCDMA) will be based on the IP protocol, the 3G systems can also be used to implement the invention.

- 5 While the invention has been described in conjunction with specific embodiments, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, it is intended to embrace all such alternatives, modifications and variations as fall within the spirit and scope of the appended claims.

10

WHAT IS CLAIMED IS:

1. A wireless network system that enables direct wireless delivery of a multimedia message from a first multimedia messaging service (MMS) user agent to a second MMS user agent, the system comprising:

5 means for receiving, from the first MMS user agent, a request to send a multimedia message to the second MMS user agent, the request including an identification (ID) number of the second MMS user agent;

means for obtaining an Internet address of the second MMS user agent based on the ID number of the second MMS user agent, if the ID number is not an
10 Internet address of the second MMS user agent; and

means for forwarding the obtained Internet address to the first MMS user agent to enable the first MMS user agent to wirelessly deliver the multimedia message directly to the second MMS user agent using the obtained Internet address.

15 2. The system of claim 1, wherein the obtaining means includes:

means for sending the ID number to a core network; and

means for obtaining the Internet address of the second MMS user agent from the core network.

20 3. The system of claim 1, wherein the identification number is a mobile station international ISDN number (MSISDN).

4. The system of claim 3, wherein the obtaining means includes:

means for sending the MSISDN to a core network,

means for obtaining an international mobile subscriber identity (IMSI) address corresponding to the MSISDN from the core network,

means for sending the obtained IMSI address to the core network, and

means for obtaining the Internet address corresponding to the IMSI from the
5 core network.

5. The system of claim 4, wherein:

the MSISDN is sent to a home location register (HLR) in the core network;

the IMSI address is obtained from the HLR;

the obtained IMSI is sent to a user database in the core network; and

10 the Internet address is obtained from the user database.

6. The system of claim 1, the wireless network system is implemented in an Internet Protocol (IP) based network.

7. A wireless network system for enabling direct wireless delivery of a multimedia message from a first multimedia messaging service (MMS) user agent
15 located in a first multimedia messaging service environment (MMSE) to a second MMS user agent located in a second MMSE, the system comprising:

a first MMS server located in the first MMSE; and

a second MMS server located in the second MMSE;

wherein the first MMS server includes:

means for receiving, from the first MMS user agent, a request to send a multimedia message to the second MMS user agent, the request including an identification (ID) number of the second MMS user agent, and

means for forwarding the request to the second MMS server;

5 wherein the second MMS server includes:

means for obtaining an Internet address of the second MMS user agent based on the ID number of the second MMS user agent, if the ID number is not an Internet address of the second MMS user agent;

means for forwarding the obtained Internet address of the second
10 MMS user agent to the first MMS server;

wherein the first MMS server forwards the obtained Internet address received from the second MMS server to the first MMS user agent to enable the first MMS user agent to wirelessly deliver the multimedia message directly to the second MMS user agent using the obtained Internet address.

15 8. The system of claim 7, wherein the obtaining means of the second MMS server includes:

means for sending the ID number to a core network of a wireless network system, and

means for obtaining the Internet address of the second MMS user agent from
20 the core network.

9. The system of claim 7, wherein the identification number is a mobile station international ISDN number (MSISDN).

10. The system of claim 9, wherein the obtaining means includes:

means for sending the MSISDN to a core network of a wireless network system,

means for receiving an international mobile subscriber identity (IMSI) address
5 corresponding to the MSISDN from the core network,

means for sending the received IMSI address to the core network, and

means for receiving the Internet address corresponding to the IMSI from the core network.

11. The system of claim 10, wherein:

10 the MSISDN is sent to a home location register (HLR) in the core network;

the IMSI address is received from the HLR;

the IMSI is sent to a user database in the core network; and

the Internet address is received from the user database.

12. The system of claim 7, the wireless network system is implemented in
15 an Internet Protocol (IP) based network.

13. A method for enabling direct wireless delivery of a multimedia message from a first multimedia messaging service (MMS) user agent to a second MMS user agent, the method comprising the steps of:

(a) receiving from the first MMS user agent a request to send a multimedia
20 message to the second MMS user agent, the request including an identification (ID) number of the second MMS user agent;

(b) obtaining an Internet address of the second MMS user agent based on the ID number of the second MMS user agent, if the ID number is not an Internet address of the second MMS user agent; and

(c) forwarding the obtained Internet address to the first MMS user agent to
5 enable the first MMS user agent to wirelessly deliver the multimedia message directly to the second MMS user agent using the obtained Internet address.

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

sending the ID number to a core network of a wireless network system; and

obtaining the Internet address of the second MMS user agent from the core
10 network.

15. The method of claim 13, wherein the identification number is a mobile station international ISDN number (MSISDN).

16. The method of claim 15, wherein step (b) includes:

(i) sending the MSISDN to a core network of a wireless network system,

15 (ii) obtaining an international mobile subscriber identity (IMSI) address corresponding to the MSISDN from the core network,

(iii) sending the obtained IMSI address to the core network, and

(iv) obtaining the Internet address corresponding to the IMSI from the core
network.

20 17. The method of claim 16, wherein:

at step (i) the MSISDN is sent to a home location register (HLR) in the core network;

at step (ii) the IMSI address is obtained from the HLR;

at step (iii) the IMSI is sent to a user database in the core network; and

5 at step (iv) the Internet address is obtained from the user database.

18. The method of claim 13, wherein the method is implemented in an Internet Protocol (IP) based network.

19. A method for enabling direct wireless delivery of a multimedia message from a first multimedia messaging service (MMS) user agent located in a first multimedia messaging service environment (MMSE) to a second MMS user agent located in a second MMSE, the method comprising the steps of:

10

(a) receiving, by a first MMS server located in the first MMSE, from the first MMS user agent a request to send a multimedia message to the second MMS user agent, the request including an identification (ID) number of the second MMS user agent;

15

(b) forwarding the request to a second MMS server located in the second MMSE;

(c) obtaining, by the second MMS server, an Internet address of the second MMS user agent based on the ID number of the second MMS user agent, if the ID number is not an Internet address of the second MMS user agent;

20

(d) forwarding, by the second MMS server, the obtained Internet address of the second MMS user agent to the first MMS server; and

(e) forwarding, by the first MMS server, the obtained Internet address to the first MMS user agent to enable the first MMS user agent to wirelessly deliver the multimedia message directly to the second MMS user agent using the obtained Internet address.

5 20. The method of claim 19, wherein step (c) includes:

 sending the ID number to a core network of a wireless network system; and

 obtaining the Internet address of the second MMS user agent from the core network.

 21. The method of claim 19, wherein the identification number is a mobile
10 station international ISDN number (MSISDN).

 22. The method of claim 21, wherein step (c) includes:

 (i) sending the MSISDN to a core network of a wireless network system,

 (ii) receiving an international mobile subscriber identity (IMSI) address corresponding to the MSISDN from the core network,

15 (iii) sending the received IMSI address to the core network, and

 (iv) receiving the Internet address corresponding to the IMSI from the core network.

 23. The method of claim 22, wherein:

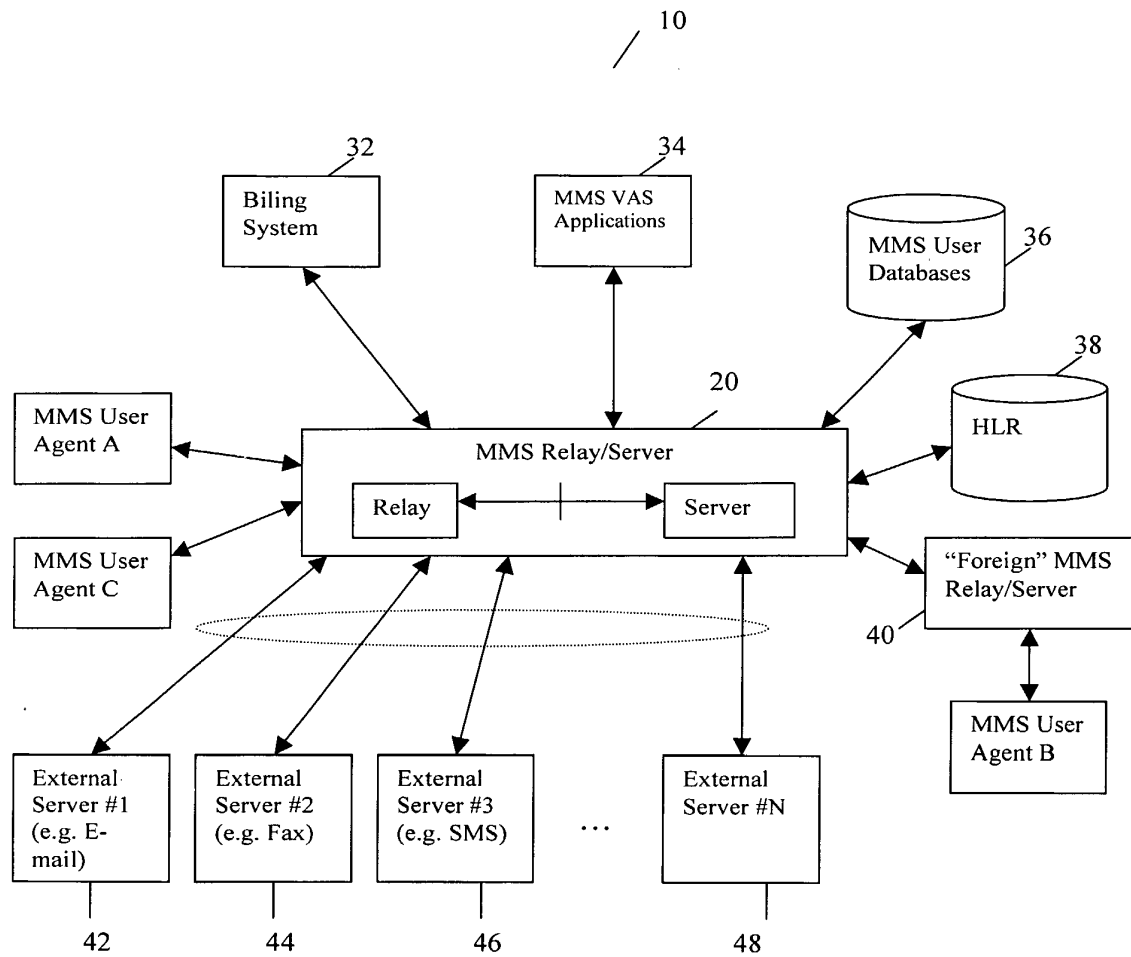
 at step (i) the MSISDN is sent to a home location register (HLR) in the core
20 network;

 at step (ii) the IMSI address is received from the HLR;

at step (iii) the IMSI is sent to a user database in the core network; and

at step (iv) the Internet address is received from the user database.

24. The method of claim 19, wherein the method is implemented in an Internet Protocol (IP) based network.



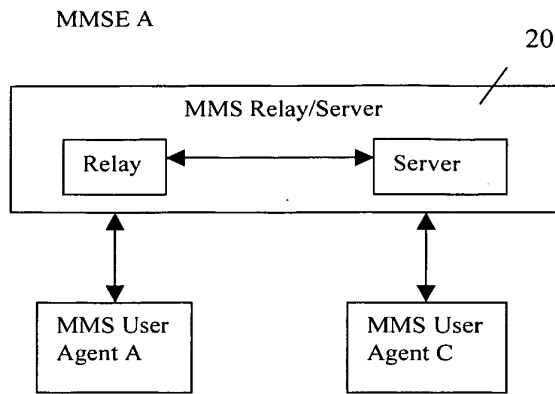


FIG. 2
(PRIOR ART)

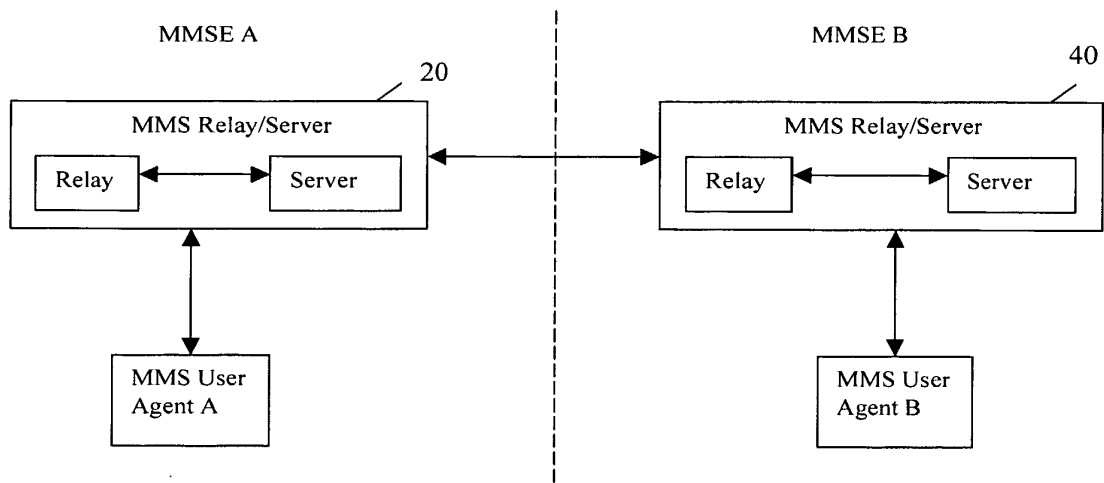


FIG. 3
(PRIOR ART)

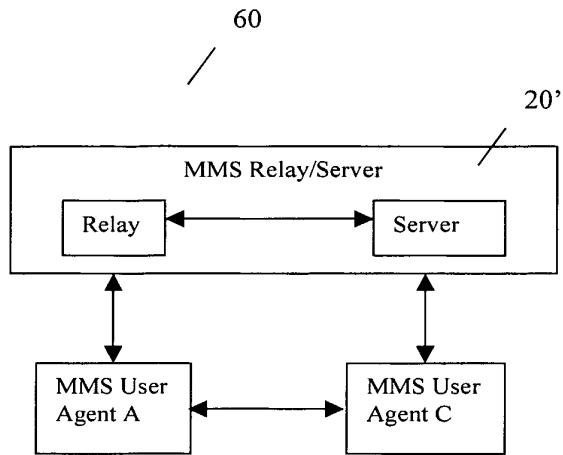


FIG. 4

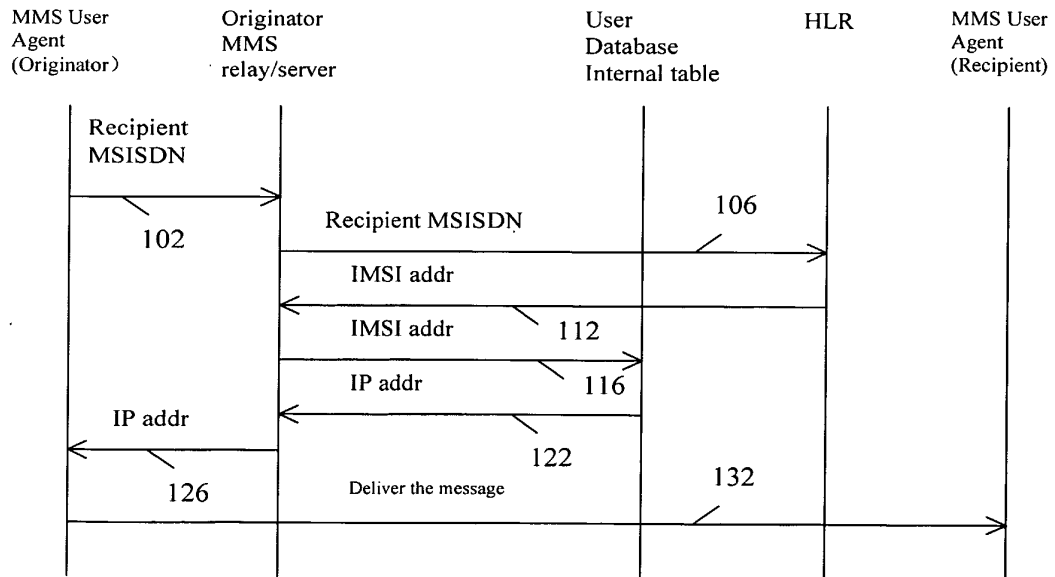


FIG. 5

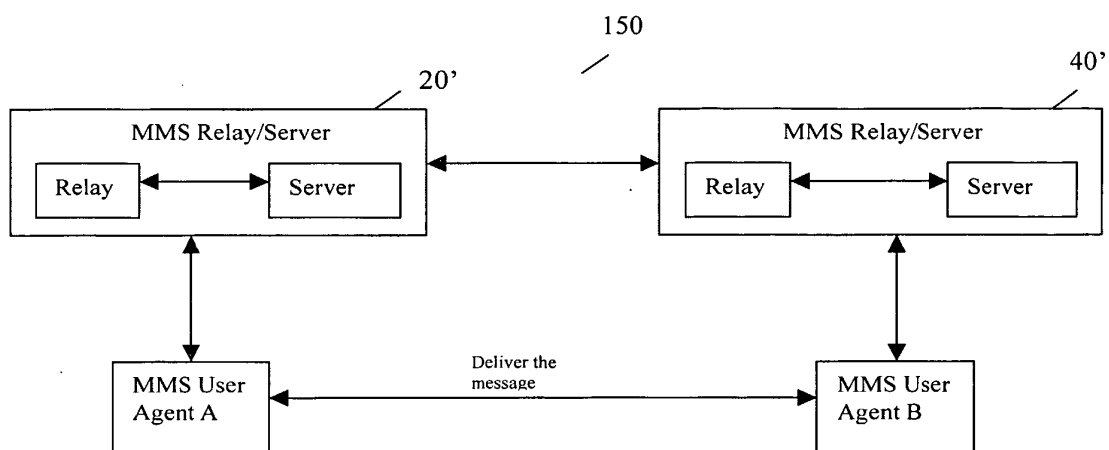


FIG. 6

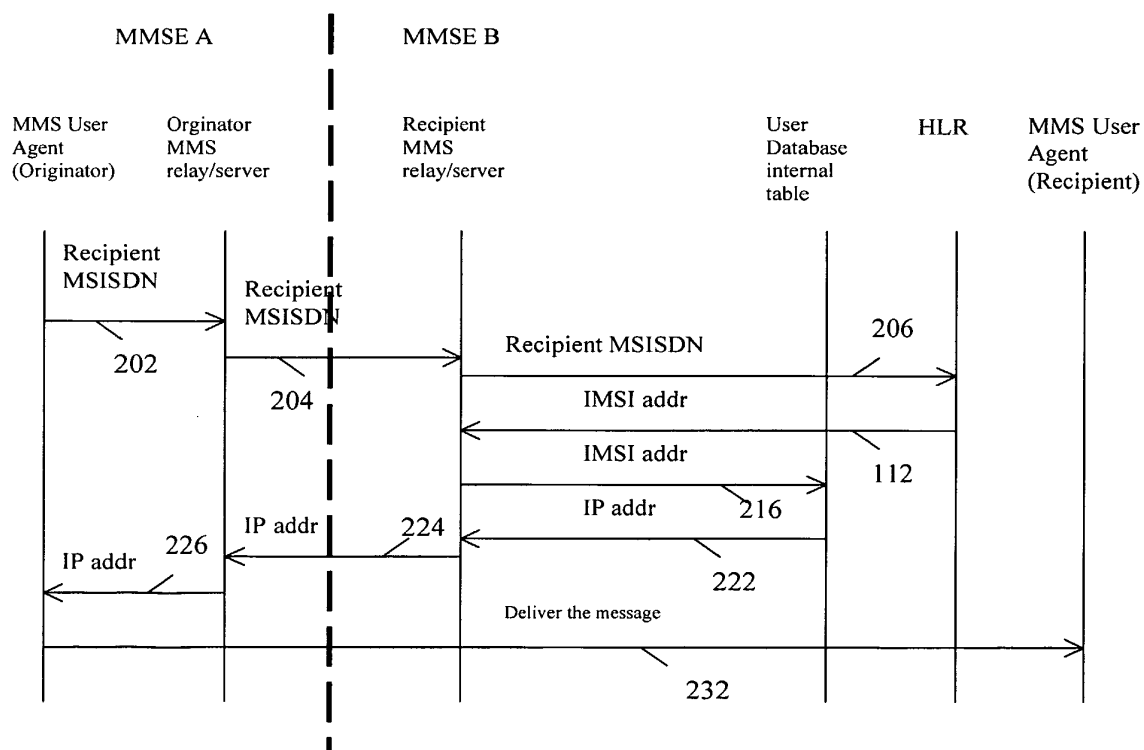


FIG. 7

INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/IB 03/05382

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		
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, COMPENDEX		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02 17650 A (VAEAENAENEN MIKKO KALERVO) 28 February 2002 (2002-02-28) page 2, line 21 -page 3, line 6 page 6, line 29 -page 8, line 19 page 13, line 17 - line 29 ---	1-3, 6-9, 12-15, 18-21, 24
A	WO 00 79825 A (NOKIA NETWORKS OY ;NOKIA INC (US)) 28 December 2000 (2000-12-28) abstract page 32, line 23 -page 39, line 3 -----	1-24
☐ Further documents are listed in the continuation of box C. ☒ Patent family members are listed in annex.		
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Date of the actual completion of the international search 23 February 2004		Date of mailing of the international search report 03/03/2004
Name and mailing address of the ISA 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 Poort, I

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INTERNATIONAL SEARCH REPORT

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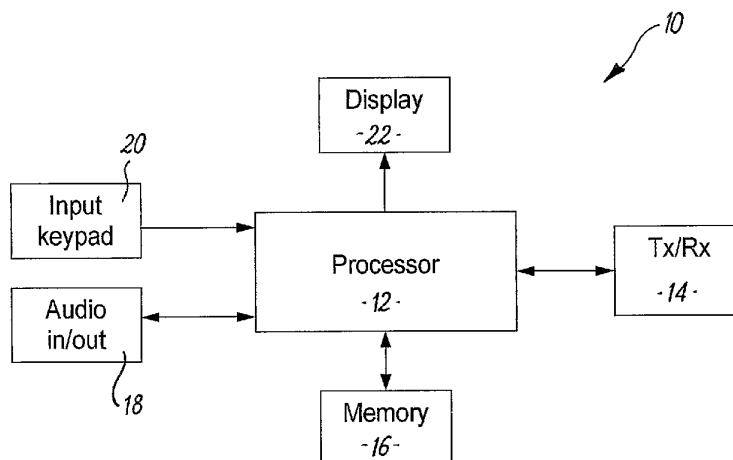
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(54) Title: INSTANT MESSAGING AND PRESENCE SERVICES



(57) **Abstract:** A mobile telephone terminal provides a user with a selectable option to transfer a telephone call to an instant messaging session and to transfer an instant messaging session to a telephone call. A presence attribute indicator for a first party is displayed, in a mobile telephone application, with an entry associated with the telephone number of the first party. A user, while displaying an entry for a party in a mobile telephone application, has a selectable option for initiating instant messaging with the party. The mobile telephone provides a customised menu of selectable options for initiating communication. The menu is dependent upon received presence attribute information. A calendar application can store the content of an instant messaging dialogue in an appointment record. When an application accesses a stored telephone number of a party the stored instant messaging address of that party is automatically accessed or accessible and when the application accesses a stored instant messaging address of a party, the stored telephone number of that party is automatically accessed or accessible.

Instant Messaging and Presence Services

Embodiments of the present invention relate to the integration of instant messaging functionality with the existing functionality of mobile telephones.

5

The Wireless Village (www.wireless-village.org) is an initiative for Instant Messaging and Presence Services (IMPS) backed by a number of leading mobile telephone manufacturers. The Wireless Village has published a specification for IMPS.

10

The specification describes how an IMPS client communicates with a server to provide an Instant Messaging service and a Presence Attribute service. Instant messaging allows messages such as text, pictures or files to be sent between IMPS clients via the server. This allows two users to 'chat' interactively by exchanging messages instantly between their clients. Presence Attributes allow a user to publish attribute information about the user or their terminal, such as whether they are available for instant messaging, their preferred method of contact etc. Another IMPS client can obtain this attribute

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information and be informed of changes to the information.

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The Wireless Village specifications are concerned with enabling IMPS which is a powerful new technology. They are not concerned with the how it will be integrated with existing technology.

25

It would be desirable to integrate mobile telephone functions and instant messaging and presence services.

30

According to a first aspect of the present invention there is provided a mobile telephone terminal arranged to provide a user with a selectable option during a telephone call with a first party, the selection of which initiates communication with the first party by instant messaging. There is also provided a method according to claim 13 and a system according to claim 14.

35

According to a second aspect of the present invention there is provided a mobile telephone terminal arranged to provide a user with a selectable option while instant messaging with a first party, the selection of which initiates a telephone call with the first party. There is also provided a method according to claim 27 and a system according to claim 28.

According to a third aspect of the present invention there is provided a mobile telephone terminal comprising at least one mobile telephone application, wherein the mobile telephone application is arranged to display to a user a presence attribute indicator for a first party with an entry associated with the telephone number of the first party. There is also provided a method according to claim 55, a method according to claim 56 and a system according to claim 57.

According to a fourth aspect of the present invention there is provided a mobile telephone terminal comprising at least one mobile telephone application, wherein the mobile telephone application is arranged to display an entry associated with a first party and to provide to a user, while displaying the entry, a selectable option for initiating instant messaging with the first party. There is also provided a method according to claim 77.

According to a fifth aspect of the present invention there is provided a mobile telephone terminal arranged to display an entry associated with a first party and provide a customised menu of selectable options for initiating communication with the first party, wherein the selectable options displayed are dependent upon received presence attribute information for the first party. There is also provided a method according to claim 96.

According to a sixth aspect of the present invention there is provided a terminal comprising: an instant messaging client for participating in an instant messaging dialogue with one or more parties; and a calendar application, for recording appointments, arranged to store the content of an instant messaging dialogue in an appointment record. There is also provided a method according to claim 109.

According to a sixth aspect of the present invention there is provided a terminal comprising: at least one application from which a telephone call and instant messaging can be initiated, wherein when the application accesses a stored telephone number of a party the stored instant messaging address of that party is automatically accessed or accessible and when the application accesses a stored instant messaging address of a party, the stored telephone number of that party is automatically accessed or accessible.

For a better understanding of the embodiments of the present invention and to understand how the same may be brought into effect, reference will now be made, by way of example only, to the accompanying drawings in which:

Fig. 1 illustrates a mobile telephone terminal;

Fig. 2 illustrates one type of user interface for the mobile telephone terminal;

Fig. 3A and 3B illustrate a user interface during the transfer of a communication session from instant messaging to a telephone call;

Fig. 4 illustrates a user interface for a mobile telephone application (call register); and

Fig. 5 is a process flow-diagram for a Calendar application.

5

Fig. 1 illustrates a mobile telephone terminal 10 for communicating in a cellular radio telecommunications network. The mobile telephone terminal 10 comprises a processor 12, a cellular radio transceiver 14, a memory 16, audio input/output 18, an input keypad 20 and a display 22. The processor 12 receives input commands from the input keypad 20, controls the output of the display 22, receives audio input from and provides audio output to the audio input/output 18, is arranged to read from and write to the memory 16 and is arranged to communicate in the cellular radio telecommunications network using the cellular radio transceiver 14.

15 Fig. 2 illustrates a user interface of the mobile telephone terminal 10. The user interface includes a display 22 and an input keypad 20. The input keypad 20 has a first soft key button 42, a second soft key button 44, an up scroll key 46, a down scroll key 48 and a keypad array (not shown). The display 22 has a main central display portion 30, a first text display portion 32 adjacent the first soft key 42 and a second text display portion 34 adjacent the second soft key 44. The first text display portion 32 is used to display text indicating the function of the first soft key 42. The second display portion 34 is used to display text indicating the function of the second soft key 44. The text displayed in the first text display portion 32 and in the second text display portion 34 changes as the functions of the respective first and second soft keys change. Although, two soft keys are shown in this example, in other user interfaces a single soft key may be used.

The memory 16 stores software, which when loaded into the processor 12 controls the operation of the mobile telephone terminal 10. This software provides applications and a menu for entering the applications. The menu can be navigated using the input keypad 20. If multiple options are to be provided to a user at a particular point in the menu this can be provided via the soft keys or, if the options out-number the number of soft keys, as a list in the main display portion 30. An entry in the list can be chosen by highlighting the desired entry using the scroll keys 46, 48 and then selecting the entry using a soft key 42, 44.

35

The mobile telephone terminal 10 is capable of making and receiving telephone calls. It will also generally be capable of sending messages via the cellular telephone

communication network. For example, in 3GPP (GSM, GPRS, WCDMA) network the mobile telephone terminal 10 may be capable of sending alphanumeric SMS messages and/or multimedia MMS messages.

5 The mobile telephone terminal 10 is also an Instant Messaging Client (Wireless Village embedded client) that can connect to an instant messaging server using the cellular telecommunications network as a bearer for the IMPS.

10 An IMPS session is established when a client logs onto an instant messaging server and is terminated when the client logs out or is logged out. If two clients are to communicate by instant messaging, they must both have a session with the server.

15 Instant messages can be addresses using a User-ID which is a unique instant messaging address assigned to a user. The User-ID is syntactically equivalent to an e-mail address. It has the format *alphanumeric string or alphanumeric string @ domain*. A user may also be referred to by screen names, nicknames and aliases. These identifiers implicitly and explicitly refer to the User-ID.

20 Communication in IMPS occurs as a series of separate transactions. Each transaction consists of a request and a response between a client and a server.

25 An instant messaging client is able to originate and receive instant messages. To send an instant message from the client of the originator, the client initiates a Send Message Transaction. It sends a SendMessageRequest message to the server, which replies with the SendMessageResponse message. The SendMessageRequest message comprises the originator's User-ID, the recipient's User-ID and the instant message content. The server sends the instant message to the client of the recipient using a Message Delivery Transaction. The server sends the NewMessage message to the recipient client, which replies with the MessageDelivered message. The NewMessage
30 message comprises the originator's User-ID, the recipient's User-ID and the instant message content.

35 An IMPS client may obtain presence information associated with a target user and/or the user's client terminal by initiating a Subscribed Presence Transaction or a Get Presence Transaction with the server. Only those attributes that are authorized for publication will be provided.

In the Subscribed Presence Transaction, the initiating client sends a SubscriberPresenceRequest message to the server and the server replies with a Status message. The SubscriberPresenceRequest message identifies the User-ID(s) of the target users(s) and the presence attributes for which notification is requested. The requesting client subsequently receives from the server the current presence information in a PresenceNotificationRequest message and will be informed of future changes to the subscribed presence attributes for the subscribed users as they happen. In order to stop continual updating of the presence information from the server it is necessary to unsubscribe at the server.

The Get Presence Transaction may be initiated at any time. The initiating client sends a GetPresenceRequest message to the server containing the target's User-ID and optionally a list of requested presence attributes. The server responds with a GetPresenceResponse message containing the result of the request and the presence attributes.

The presence attributes that can be made available include presence information about the client and presence information about the user. The information about the client (client status) may include 'online status' and 'registration'. 'Online Status' indicates whether a client has an active session i.e. is logged into an IMPS server and is therefore available for instant messaging. 'Registration' indicates whether a client device is registered in a mobile telecommunications network and should therefore be available for receiving a telephone call, SMS or MMS. The information about the user (user status) may include 'user availability', 'preferred contact' and 'contact info'. 'User Availability' indicates the availability of the user and the amount of acceptable distraction i.e. available, unavailable, selectively available. 'Preferred contact' indicates the preferred method of contact e.g. call, SMS, MMS, IM, email. A 'contact address' attribute may give the address for the preferred contact method e.g. phone number, MMS address, User-ID, email address. 'Contact Info' is a vCard (i.e. an electronic introduction card) for the user that can be sent as an MMS message.

The inventor has realized that the functionality of a mobile telephone terminal and an IMPS client can be integrated more closely together, to provide an improved telecommunications terminal. Currently, the mobile telephone terminal has certain mobile telephone applications that relate to its functionality e.g. telephone calls and SMS/MMS messages and some applications that are used for organization such as a Calendar. An IMPS client in a mobile telephone has certain applications that relate to its functionality e.g.

obtaining information about presence attributes and instant messaging. Although currently the IMPS client can be integrated physically within a mobile telephone terminal, the functions associated with the mobile telephone and the functions associated with the IMPS client are provided as alternative components in the menu structure. This is inconvenient
5 as it means that a long navigation of the menu may be required to perform a function associated with the phone and then a function associated with the IMPS. The inventors have developed a simple and innovative mechanism that allows the functionality of the mobile telephone and IMPS client to be integrated.

10 The terminal (mobile telephone and IMPS) 10 is arranged so that when a mobile telephone application (e.g. telephone calling, SMS messaging) has access to a telephone number for a party it also has immediate access to the IMPS address (User-ID) for that party.

15 A database in memory 16 associates, for each contact party, the telephone number of the party and the User-ID for that party. The mobile telephone applications (e.g. telephone calling, SMS messaging, Call Register etc) are adapted so that when an application recalls a telephone number from the database for a party, it recalls automatically, or has the ability to recall automatically, the associated User-ID for that party
20 (if in the database). The IMPS applications (e.g. obtaining presence attributes, instant messaging) may be adapted so that when an application recalls a User-ID from the database for a party, it recalls automatically, or has the ability to recall automatically, the associated telephone number for that party (if in the database).

25 In one embodiment, the database storing contact information for the user (e.g. the phonebook) is arranged so that the User-ID for a party and the telephone number for the party are treated as different fields in a single entity that is associated with the party and retrievable by an application.

30 In one implementation, a database entry would use a data field identifying a party (e.g. a name) and a pointer field for a default contact point, which would point to a default phone number and the User-ID. When an application queries the database for an entry both fields are returned. The application can then immediately recall one or both of the telephone number and User-ID from the database using the pointer field.

35 In another implementation, an entry in a phonebook for a party would use a data field for the name, a data field for a default telephone number and a data field for a User-

ID. When an application queries the database for a party, all the data fields for that party's entry are returned. The application can then immediately use one or other of the telephone number and the User-ID. Even though only one of the telephone number and User-ID are to be used, they are both stored in active memory so that the other is readily accessible
5 should it be required.

The database used by the phonebook application has a data entry field for User-ID, that a user can fill in, when entering the phone number of a new party.

10 As a consequence of the close association of the User-ID and telephone number, an application that requires access to one of the phone number and User-ID for one mode of operation automatically has access to the other one for another mode of operation. The user only chooses whom to contact. The application, depending on the mode of operation, which may be user selected, chooses which of the phone number and User-ID will be
15 used. The application may therefore easily switch from a communication mode using the phone number to another communication mode using the User-ID. Thus telephone modes, including telephone conversations and SMS messaging (i.e. modes using the telephone number), are interchangeable with IMPS modes, including instant messaging (a mode using the User-ID).

20 The functionally integrated mobile telephone terminal and IMPS client may provide any one or more of the following additional services:

- 1) The simple switching of a communication session between a telephone call and instant messaging.
- 25 2) The provision of presence attribute information in relation to telephone functions (e.g. in a phonebook, call register or SMS message register).
- 3) The initiation of instant messaging directly from a telephone function (e.g. a phonebook, call register or SMS message register).
- 4) The dynamic customization of a menu of communication options based on presence
30 information.
- 5) The integration of instant messaging with other telephone functions (e.g. Calendar)

It is possible to continue a communication session between parties A and B by transferring the communication means from instant messaging between parties A and B to
35 a telephone call between users A and B. In the situation in which party A and party B are engaged in instant messaging, one or other of A or B can transfer the instant messaging

session into a telephone call. It is of course preferable that the transfer process cannot be unilateral but must be by mutual consent.

Fig. 3A illustrates the user interface of a mobile telephone terminal 10 which is being used by a user A to communicate using instant messaging with a party B. The mobile terminal used by B may have a similar user interface. In the example of Fig. 3A, the first soft key 42 is activated by user A to access available options and the second soft key 44 is activated to end the interactive messaging session. When user A presses the first soft key 42, a number of different options are displayed on the main display portion 30. The user may scroll through these options using the up scroll key 46 and the down scroll key 48 and then select one of the options using one of the first or second soft keys 42, 44. One of the options is "call". Selecting this option causes the mobile telephone terminal 10 to call the party B to whom instant messages are being sent.

In another embodiment, while instant messaging, the first soft key 42 has the associated function of initiating a call and the associated text display portion 32 displays "Call". Activating the first soft key 42, while instant messaging, initiates a call to user B without having to enter an options menu.

Selecting the "call" option either directly or through the options menu, immediately and automatically initiates the process for making a telephone call as shown in Fig. 3B.

To initiate a telephone call between A and B, it is necessary for either A or B to have the telephone number of the other. In the situation where user A selects the call option during the interactive messaging session, his terminal will attempt to originate the telephone call.

In the situation in which A has initiated the instant messaging session from his phonebook and has therefore recalled B's telephone number as well as his user-ID from the database, A's terminal will have B's telephone number immediately available and can therefore automatically make the call.

If A's terminal does not have B's telephone number immediately available, it may try and find a stored version of the telephone number within the terminal. This may be achieved by searching the database of terminal A using the User-ID of user B to obtain the associated mobile telephone number. It may also be achieved by searching received presence attributes for user B stored in the terminal.

If the terminal is unable to find a telephone number for user B, it may attempt to obtain user B's telephone number by initiating a Get Presence Transaction by sending a GetPresenceRequest message to the instant messaging server containing user B's user-
5 ID and the contact address attribute. The server may respond with the address for the preferred contact method by which to contact user B which may be his telephone number. User A's terminal processes the received presence information to determine whether or not a telephone number has been received and if it has, it is extracted and used to telephone user B.

10

As an alternative, or in addition to, requesting the present attributes, the terminal of user A may send a special call initiation instant message to user B. This special instant message, is not a message that is displayed on the display of the terminal of user B but is a control message that enables the terminal of user B to send user B's telephone number
15 to the terminal of user A. The call initiation instant message results in an option being presented to the user B who may decline or accept it. If it is accepted, user B's telephone number is sent automatically to user A in the body of an instant message (or an SMS message). User A's terminal extracts the telephone number from the body of the instant message (or from the SMS) and uses it to call user B.

20

It should be appreciated that when a user is using the instant messaging functionality, it is a simple process for them to access the telephone call functionality. There is no need for them to navigate through the menu structure, as the ability to transfer the instant messaging session to a telephone conversation is readily available.

25

It is also possible to transfer a telephone call to an instant messaging session. In the situation in which A and B are engaged in a telephone conversation, one or other of A or B can transfer the telephone conversation into an instant messaging session. It is of course preferable that the transfer process cannot be unilateral but must be by mutual
30 consent.

While a user is engaged in a telephone conversation, they may select "options" by depressing the first soft key 42. One of the options consequently displayed is "start IM". If the user selects this using the up and down scroll keys 46, 48, and a soft key his terminal
35 will start the transfer process by which the telephone conversation is transferred to an instant messaging session. In an alternative user interface arrangement, while a user is

engaged in a telephone conversation, they may select "start IM" by depressing the first soft key 42.

It is assumed in the following that A and B are both logged onto an IMPS server i.e.
5 that they are both in session. If one or both are not logged on, then they would have to log on before they can exchange instant messages. This can be done automatically without prompting for passwords.

In the situation in which user A has initiated the telephone call from his phonebook
10 and therefore recalled the user-ID of party B as well as the telephone number of party B from the database to active memory, then the terminal of user A is simply able to send an instant message to B. This instant message will by default also include user A's user-ID and consequently both A and B will have all the necessary information to have an instant messaging chat session.

15 In the situation in which the user who is initiating the transfer from the telephone call into instant messaging, did not originate the telephone conversation, then the terminal may search a database associating telephone numbers and User-IDs, using the telephone number of user A obtained via call line identification (CLI). If the database has an entry for
20 user A that contains both its telephone number and user-ID, the user-ID can be accessed and used to send an instant message to user A. This instant message will by default include the user-ID of user B and consequently both users' terminals will have the necessary information to have an instant messaging chat session.

25 In the situation in which the terminal which is initiating the transfer from a telephone conversation to an instant messaging chat session, e.g. the terminal of user A, does not have the user-ID of B, the terminal of user A can send an SMS to the terminal of party B that includes the user-ID of user A. The terminal of party B, when it receives this SMS, is able to extract the user-ID of user A and use this to start the instant messaging chat
30 session. The user-ID of user A may be extracted from the SMS either by searching for an alphanumeric text string including "@" or it could be done with a settings or business card SMS message. It is of course also possible for the user who accepted the incoming call to initiate the transfer of the telephone conversation to an instant message chat session. This would be achieved by sending an SMS message to user A. This is possible because
35 the telephone number of user A may be obtained using call line identification.

It should therefore be appreciated that if a user is involved in a telephone conversation, the user does not have to navigate through a complex menu to an IM section, choose to initiate an IM session and choose whom to talk to and then activate the process. Instead, the user can simply access the instant messaging functionality via the
5 current mobile telephone application.

As the telephone number and user-ID are associated together, any application that primarily uses a telephone number can also use a feature of IMPS. Thus any mobile telephone application related to a telephone number such as the phonebook, the call
10 register (missed calls, received calls, made calls etc.) and the SMS register (sent messages, received messages, etc.) can also give presence information for the user-ID associated with the relevant telephone number. The mobile telephone applications relate to sending and receiving using communication mechanisms specified for the mobile telecommunications network.

15

As shown in Fig. 4, the presence information can be given by a presence indicator 50 on the display 22. The presence indicator may be in the form of a small icon, an exclamation mark, a different colour scheme or other signifying symbol next to the relevant entry for a user. The presence indicator may give an indication of the "on-line status" presence attribute of a user so that it is immediately apparent whether the user is logged
20 on and available for instant messaging. The presence indicator may be an indication of the "registration" presence attribute and therefore indicate whether a client device is registered in a mobile communications network and should therefore be available for receiving a telephone call, SMS or MMS. The presence indicator 50 may be an indication
25 of the "user availability" presence attribute of the user and therefore indicate whether the user is available or unavailable. The presence indicator 50 may be an indication of the "preferred contact" presence attribute and therefore indicate the preferred method of contact e.g. telephone call, SMS, MMS, instant messaging etc.

30 The phonebook application displays multiple entries, each of which has an associated telephone number. A telephone call can be initiated from a displayed entry to the associated telephone number. All or selected ones of the phonebook entries display a presence attribute indicator 50.

35 The call register application displays any one of a set of multiple entries. There is a set of multiple entries for each of: missed calls; received calls; and calls made. Each entry has an associated telephone number. A telephone call can be initiated from a displayed

entry to the associated telephone number. All or selected ones of the entries display a presence attribute indicator 50.

A text message register application displays any one of a set of multiple entries.

- 5 There is a set for each of received messages and sent messages. Each entry has an associated telephone number. A telephone call can be initiated from a displayed entry to the associated telephone number. All or selected ones of the entries display a presence attribute indicator 50.

- 10 The presence attributes for one or more entries can be automatically updated by subscribing, using a Subscribed Presence Transaction, to receive updated presence attribute information. The presence attributes can be selectively updated using a Get Presence Transaction. The received presence attributes are processed to determine the appropriate presence attribute indicator for an entry in a mobile telephone application.

- 15 In Fig. 4 a telephone call register is illustrated. It indicates that a call was missed from the party "Peter". The presence attribute indicator 50 may for example indicate that the client device of that party is registered in a mobile telecommunications network and/or that the preferred contact method is by telephone call and/or that the user is available.
- 20 The user may therefore choose that a telephone call is the most appropriate way of contacting the user. By selecting the first soft key 42, the options menu is entered. The user may then use the input keypad 20 to select the option for initiating the telephone call to the user. Alternatively, the presence indicator 50 may alternatively or in addition indicate that the user is logged on to the IMPS server and/or the preferred method of
- 25 contact is by instant messaging and/or that the user is available. The user may therefore decide that the appropriate method of contact is by instant messaging. The user may enter the options menu by selecting the soft key 42. The option of starting an instant messaging session with the user is then selected from the options menu using the input keypad 20.

- 30 Although the above example has been given with respect to the call register it should be appreciated that it is equally applicable to the SMS register and/or the phonebook. For example, each entry in a phonebook may have a presence indicator 50 adjacent it indicating whether the person should be contacted by instant messaging,
- 35 telephone call or SMS.

In the above described examples, it may be necessary to obtain presence attribute information for a large number of parties e.g. the content of a phonebook. This may place a considerable demand on a terminal. It may not therefore be appropriate to obtain presence information for all of the entries e.g. in a phone book. It is desirable for the
5 mobile terminal to have a user configurable option so that the user can determine which entries should have presence data information associated with them and what information should be obtained.

According to one embodiment of the present invention, the options menu itself is
10 automatically adapted or customised by the terminal in dependence upon the presence information available with respect to a certain party. Thus, if the preferred contact method for the party is by instant messaging and not by telephone call, then when the communications options menu is entered for that party, the option of starting an instant messaging session is provided but the option of starting a telephone call is not. Likewise if
15 the preferred method of contact is by telephone conversation, then when the communications options menu is entered for that party, there may be an option to start a telephone conversation but not an option to start an instant messaging session. As another example, if the mobile terminal is not registered in a telecommunication network or the user is not available, there may not be an option of having a telephone conversation or
20 an instant messaging session but there may be the option of sending an SMS. The SMS would be stored in the network and would be pushed to the user when they next attach to the network. Thus the menu system of the mobile telephone terminal may be dynamic in that it changes in dependence upon the presence information received. This allows, in particular, menu options for communicating with a particular party to be automatically and
25 dynamically customised. As an example, the options available from the phonebook may be dynamically varied in dependence upon the presence information received for a particular contact entry. Thus for an entry in a telephone book for one party, there is presented the options of contacting that party by telephone call, SMS or instant messaging whereas for an entry for another party there may only be presented the option of contacting that other
30 party by instant messaging only.

It is also possible to integrate instant messaging into other functions of the mobile telephone terminal, such as the calendar application. The calendar application is adapted so that a reminder to participate in an instant messaging meeting can be entered into the
35 calendar at a particular date. The reminder includes the user-ID of each of the intended participants of the instant messaging meeting. When the time and date for the meeting arrives, the mobile telephone terminal offers the user the opportunity to automatically

initiate the meeting via instant messaging. The dialogue that occurs during the meeting is displayed on the display 22 but is in addition stored in memory 16. At the end of the meeting, the user is given the option of storing the recorded dialogue of the interactive instant messaging meeting as a note associated with the entry for the meeting in the calendar. Thus, when the meeting entry in the calendar is opened in the future, it is possible to review the content of the instant messaging meeting.

This process of using the calendar is illustrated in more detail in Fig. 4. At step 100, the user enters the calendar application for recording an appointment. At step 102 the user selects a date. At step 104 the selects the appointment type as a meeting. At step 106 the user is prompted for and enters the text describing the purpose of the meeting. At step 108 the user is prompted for and enters the time of the meeting. At step 110, the user is prompted for and enters the names or aliases of the attendees. At step 112 the user is prompted to indicate what type of meeting it is for example whether or not it is an instant messaging meeting. If the meeting is to be an instant messaging meeting, then the calendar application at step 114 sends out an invitation to all attendees. This may be sent as an instant message, if possible, or as an SMS. The appointment record is then entered in the calendar at step 116 and the user exits the application.

When the date and time for the appointment comes around, an alert for the IM meeting goes off at step 120. At step 122, the terminal checks the presence information on the intended attendees for the meeting to determine whether or not they are available. It checks to discover the "on-line status" of the attendees. If the terminal does not have this information, it initiates a get presence transaction. It sends a GetPresenceRequest message to the server containing the user-IDs of the intended attendees and also identifies the on-line status presence attribute. At step 124, the appointment record is opened and the user is informed of which attendees are available for instant messaging. A presence attribute indicator may be displayed with each attendee. At step 126, the user is prompted to decide whether or not to initiate the IM meeting. If the IM meeting is initiated the process proceeds to step 128. At step 128, the mobile terminal initiates the IM session using the user-IDs of all the available attendees. If necessary, the terminal automatically logs on to the instant messaging server. At step 130 the IM session occurs and the dialogue is stored in the memory. At step 132 the IM session is terminated by the user. At step 134 the user is prompted whether or not they wish to save the stored dialogue in the appointment record. If the user chooses to save the stored dialogue, they are given an opportunity to edit the dialogue at step 136 and before it is imported into the appointment at step 138 and the appointment saved at step 140. The user then exits the application at

step 142. If the user decides not to initiate the IM session at step 126 or decides not to store the saved dialogue at step 134 the process jumps to step 142 and exits the application.

5 Although embodiments of the present invention have been described in the preceding paragraphs with reference to various examples, it should be appreciated that modifications to the examples given can be made without departing from the scope of the invention as claimed. For example embodiments of the present invention may find
10 application in terminals other than mobile telephone terminals such as personal digital assistants, portable computers or computer terminals than have an embedded instant messaging client.

 Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood
15 that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

Claims

1. A mobile telephone terminal arranged to provide a user with a selectable option during a telephone call with a first party, the selection of which initiates communication with the first party by instant messaging.
2. A mobile telephone as claimed in claim 1, wherein the terminal automatically initiates communication with the first party by instant messaging after user selection of the provided option without further user intervention.
3. A mobile telephone terminal as claimed in claim 1 or 2, wherein the user selectable option is one of many user selectable options that are provided as a menu during a telephone call at the instigation of the user.
4. A mobile telephone as claimed in claim 3 wherein the instigation involves a single key-stroke during the telephone call.
5. A mobile telephone as claimed in claim 1 or 2, wherein the user selectable option is selected by a single keystroke during the telephone call.
6. A mobile telephone terminal as claimed in any preceding claim arranged to automatically log on to an instant messaging server.
7. A mobile telephone terminal as claimed in any preceding claim, wherein if the terminal stores the first party's instant messaging address it initiates communication by sending an instant message to the first party.
8. A mobile telephone terminal as claimed in any preceding claim, wherein if the terminal does not store the first party's instant messaging address it initiates communication by sending the user's instant messaging address to the first party.
9. A mobile telephone terminal as claimed in any preceding claim arranged to obtain automatically an instant messaging address from a received text message.
10. A mobile telephone terminal as claimed in any preceding claim comprising a memory for storing a database in which the instant messaging address of the first party and a telephone number of the first party are associated together.

11. A mobile telephone terminal as claimed in claim 10 arranged to search the database for an instant messaging address using an associated telephone number.
- 5 12. A mobile telephone terminal as claimed in any preceding claim comprising:
option means for controlling a display to display a user selectable option or options;
selection means for enabling a user to select a displayed option;
an instant messaging client arranged to initiate instant messaging; and
control means responsive to the selection means when the selected option indicates the
10 initiation of instant messaging to enable the instant messaging client.
13. A method of changing the mechanism by which a first party and a second party communicate during a communication session comprising the steps of:
communicating via a telephone call between the first and second parties; and
15 displaying a user selectable option during the telephone call to at least one of the parties, the selection of which initiates the establishment of instant messaging between the parties.
14. A system for providing communication between a first party and a second party using a telephone call and instant messaging, arranged to
20 switch a communication session between the parties from a telephone call to instant messaging.
15. A mobile telephone terminal arranged to provide a user with a selectable option while instant messaging with a first party, the selection of which initiates a telephone call
25 with the first party.
16. A mobile telephone as claimed in claim 15, wherein the terminal automatically initiates a telephone call with the first party after user selection of the provided option without further user intervention.
30
17. A mobile telephone terminal as claimed in claim 15 or 16, wherein the user selectable option is one of many user selectable options that are provided as a menu, while instant messaging, at the instigation of the user.
- 35 18. A mobile telephone as claimed in claim 17 wherein the instigation involves a single key-stroke while instant messaging.

19. A mobile telephone as claimed in claim 15 or 16, wherein the user selectable option is selected by a single keystroke while instant messaging.
20. A mobile telephone terminal as claimed in any one of claims 15 to 19, wherein if
5 the terminal stores the first party's telephone number it initiates communication by placing a telephone call to the first party.
21. A mobile telephone terminal as claimed in any one of claims 15 to 20, wherein if
10 the terminal does not store the first party's telephone number it initiates communication by sending an instant message to the other party providing the user's telephone number or requesting the first party's telephone number.
22. A mobile telephone terminal as claimed in any one of claims 15 to 21, wherein if
15 the terminal does not store the first party's telephone number it initiates communication by requesting a presence attribute for the first party.
23. A mobile telephone terminal as claimed in any one of claims 15 to 22 arranged to obtain automatically a telephone number from a received instant message.
- 20 24. A mobile telephone terminal as claimed in any one of claims 15 to 24 comprising a memory for storing a database in which the instant messaging address of the first party and a telephone number of the first party are associated together.
- 25 25. A mobile telephone terminal as claimed in claim 24 arranged to search the database for a telephone number using an associated instant messaging address.
26. A mobile telephone terminal as claimed in any one of claims 15 to 25 comprising:
option means for controlling a display to display a user selectable option or options;
selection means for enabling a user to select a displayed option;
30 a cellular radio transceiver arranged to initiate a telephone call; and
control means responsive to the selection means when the selected option indicates the initiation of a telephone call to initiate a telephone call using the cellular radio transceiver.
27. A method of changing the mechanism by which a first party and a second party
35 communicate during a communication session comprising the steps of:
communicating via instant messaging between the first and second parties; and

displaying a user selectable option during the instant messaging to at least one of the parties, the selection of which initiates the establishment of a telephone call between the parties.

- 5 28. A system for providing communication between a first party and a second party using a telephone call and instant messaging, arranged to switch a communication session between the parties from instant messaging to a telephone call.
- 10 29. A mobile telephone terminal comprising at least one mobile telephone application, wherein the mobile telephone application is arranged to display to a user a presence attribute indicator for a first party with an entry associated with the telephone number of the first party.
- 15 30. A mobile telephone terminal as claimed in claim 29, wherein the presence attribute indicator indicates any one or more of:
- a) the availability of the first party for instant messaging;
 - b) the availability of the first party for a telephone call and/or text messaging;
 - c) a preferred method of contact for the first party; and
 - 20 d) the amount of distraction the first party will accept.
- 25 31. A mobile telephone terminal as claimed in claim 30, wherein the presence attribute indicator indicates one or more of the following presence attributes: 'online status'; 'registration'; 'preferred contact'; and 'user availability'.
32. A mobile terminal as claimed in claim 29, 30 or 31 arranged to update automatically the displayed presence attribute indicator for a first party.
33. A mobile terminal as claimed in claim 29, 30, 31 or 32, comprising:
- 30 an instant messaging client arranged to subscribe, at a server, to presence attributes for a plurality of parties and arranged to receive from the server presence attribute information for each of the parties; and
- processing means arranged to process the received presence attribute information and display, for each of the parties, a presence indicator with the entry in the mobile telephone
- 35 application associated with the party.
34. A mobile terminal as claimed in any one of claims claim 29 to 32, comprising:

an instant messaging client arranged to get presence attribute information for a party from a server; and
a display for displaying a presence indicator with the entry in the mobile telephone application associated with the party.

5

35. A mobile telephone terminal as claimed in any one of claims 29 to 34 comprising a memory for storing a database in which the instant messaging address of the first party and a telephone number of the first party are associated together.

10

36. A mobile telephone terminal as claimed in claim 35 arranged to search the database for an instant messaging address using an associated telephone number.

37. A mobile telephone terminal as claimed in claim 35 or 36, arranged to search the database for a telephone number using an associated instant messaging address.

15

38. A mobile telephone terminal as claimed in any one of claims 29 to 37, wherein the mobile telephone comprises a cellular radio transceiver for transmitting and receiving in a cellular radio telecommunications network using predetermined communication mechanisms specified for that network and wherein the mobile telephone application is an application relating to transmission and/or reception of information using one or more of the specified communication mechanisms.

20

39. A mobile telephone terminal as claimed in any one of claims 29 to 38, wherein the mobile telephone application is a phonebook arranged to display multiple entries, each of which has an associated telephone number arranged to display a presence attribute indicator for a first party with the phonebook entry for the first party.

25

40. A mobile telephone terminal as claimed in any one of claims 29 to 39, wherein the mobile telephone application is a call register arranged to display multiple entries, each of which has an associated telephone number and arranged to display a presence attribute indicator for a first party with the call register entry for the first party.

30

41. A mobile telephone terminal as claimed in claim 40, wherein the call register displays a first set of multiple entries for missed calls and/or a second set of multiple entries for received calls and/or a second set of multiple entries for calls made.

35

42. A mobile telephone terminal as claimed in any one of claims 29 to 38, wherein the mobile telephone application is a text message register arranged to display multiple entries, each of which has an associated telephone number and arranged to display a presence attribute indicator for a first party with the call register entry for the first party.
- 5 43. A mobile telephone terminal as claimed in claim 42, wherein the text message register displays a first set of multiple entries for received text messages and/or a second set of multiple entries for text messages sent.
- 10 44. A mobile telephone terminal as claimed in any one of claims 29 to 43, wherein the mobile telephone application is arranged to provide a user, while displaying an entry associated with a first party, a selectable option for initiating instant messaging with the first party.
- 15 45. A mobile telephone terminal as claimed in claim 44, wherein the displayable entry is associated with the telephone number of the first party.
- 20 46. A mobile telephone as claimed in claim 44 or 45, wherein the terminal automatically initiates communication with the first party by instant messaging after user selection of the provided option without further user intervention.
- 25 47. A mobile telephone terminal as claimed in claim 44, 45 or 46, wherein the user selectable option is one of many user selectable options that are provided as a menu during a telephone call at the instigation of the user.
- 30 48. A mobile telephone as claimed in claim 47, wherein the instigation involves a single key-stroke during the telephone call.
49. A mobile telephone as claimed in claim 44, 45 or 46, wherein the user selectable option is selected by a single keystroke during the telephone call.
50. A mobile telephone terminal as claimed in any one of claims 29 to 49 arranged to automatically log on to an instant messaging server.
- 35 51. A mobile telephone terminal as claimed in claim 44, wherein if the terminal stores the first party's instant messaging address it initiates instant messaging by sending an instant message to the first party.

52. A mobile telephone terminal as claimed in claim 44, wherein if the terminal does not store the first party's instant messaging address it initiates instant messaging by sending the user's instant messaging address to the first party.

5

53. A mobile telephone terminal as claimed in any one of claims 29 to 52 arranged to obtain automatically an instant messaging address from a received text message.

54. A mobile telephone terminal as claimed in claim 44 comprising:

- 10 option means for controlling a display to display a user selectable option or options;
selection means for enabling a user to select a displayed option;
an instant messaging client arranged to initiate instant messaging; and
control means responsive to the selection means when the selected option indicates the initiation of instant messaging to enable the instant messaging client.

15

55. A method of controlling the user interface appearance of a mobile telephone terminal comprising the step of:

selecting an entry or entries of a mobile telephone application for which a presence attribute indicator will be obtained and displayed

20

56. A method of controlling the user interface appearance of a mobile telephone terminal comprising the step of:

obtaining and displaying presence attribute indicators for entries of a mobile telephone application.

25

57. A system comprising a server storing presence attribute information for a plurality of parties and a mobile telephone terminal

wherein the mobile telephone terminal comprises at least one application, from which a telephone call can be made to a party, arranged to display to a user a presence attribute indicator for the first party in dependence upon presence attribute information received from the server.

30

58. A mobile telephone terminal comprising at least one mobile telephone application, wherein the mobile telephone application is arranged to display an entry associated with a first party and to provide to a user, while displaying the entry, a selectable option for initiating instant messaging with the first party.

35

59. A mobile telephone as claimed in claim 58, wherein the terminal automatically initiates communication with the first party after user selection of the provided option without further user intervention.
- 5 60. A mobile telephone terminal as claimed in claim 58 or 59, wherein the user selectable option is one of many user selectable options that are provided as a menu at the instigation of the user.
61. A mobile telephone as claimed in claim 60, wherein the instigation involves a single
10 key-stroke during the telephone call.
62. A mobile telephone as claimed in claim 59 or 60, wherein the user selectable option is selected by a single keystroke during the telephone call.
- 15 63. A mobile telephone terminal as claimed in any one of claims 58 to 62, arranged to automatically log on to an instant messaging server.
64. A mobile telephone terminal as claimed in any one of claims 58 to 63, comprising a
memory for storing a database in which the instant messaging address of the first party
20 and a telephone number of the first party are associated together.
65. A mobile telephone terminal as claimed in claim 64, arranged to search the database for an instant messaging address using an associated telephone number.
- 25 66. A mobile telephone terminal as claimed in any one of claims 58 to 65, wherein the displayable entry is associated with the telephone number of the first party.
67. A mobile telephone terminal as claimed any one of claims 58 to 66, wherein the
mobile telephone comprises a cellular radio transceiver for transmitting and receiving in a
30 cellular radio communications network using predetermined communication mechanisms specified for that network and the mobile telephone application is an application relating to transmission and/or reception of information using one or more of the specified communication mechanisms.
- 35 68. A mobile telephone terminal as claimed in any one of claims 58 to 67, wherein the mobile telephone application is a phonebook arranged to display multiple entries, each of

which has an associated telephone number and enables the initiation of a telephone call to the associated telephone number.

69. A mobile telephone terminal as claimed in any one of claims 58 to 68 wherein the mobile telephone application is a call register arranged to display multiple entries, each of which has an associated telephone number and enables the initiation of a telephone call to the associated telephone number.

70. A mobile telephone terminal as claimed in claim 69, wherein the call register displays a first set of multiple entries for missed calls and/or a second set of multiple entries for received calls and/or a second set of multiple entries for calls made.

71. A mobile telephone terminal as claimed in any one of claims 58 to 70, wherein the mobile telephone application is a text message register arranged to display multiple entries, each of which has an associated telephone number and enables the initiation of a text message communication to the associated telephone number.

72. A mobile telephone terminal as claimed in claim 71, wherein the text message register displays a first set of multiple entries for received text messages and/or a second set of multiple entries for text messages sent.

73. A mobile telephone terminal as claimed in any one of claims 58 to 72, wherein if the terminal stores the first party's instant messaging address it initiates instant messaging by sending an instant message to the first party.

74. A mobile telephone terminal as claimed in any one of claims 58 to 73, wherein if the terminal does not store the first party's instant messaging address it initiates instant messaging by sending the user's instant messaging address to the first party.

75. A mobile telephone terminal as claimed in any one of claims 58 to 74, arranged to obtain automatically an instant messaging address from a received text message.

76. A mobile telephone terminal as claimed in any one of claims 58 to 75, comprising:
option means for controlling a display to display a user selectable option or options;
selection means for enabling a user to select a displayed option;
an instant messaging client arranged to initiate instant messaging; and

control means responsive to the selection means when the selected option indicates the initiation of instant messaging to enable the instant messaging client.

77. A method of communicating with a first party from a mobile telephone application,
5 comprising the steps of:
displaying an entry associated with a first party in a mobile telephone application; and
displaying a user selectable option for initiating instant messaging with the first party within
the mobile telephone application.
- 10 78. A mobile telephone terminal arranged to display an entry associated with a first
party and provide a customised menu of selectable options for initiating communication
with the first party, wherein the selectable options displayed are dependent upon received
presence attribute information for the first party.
- 15 79. A mobile telephone as claimed in claim 78, wherein the selectable options for
communication include placing a telephone call and instant messaging
80. A mobile telephone as claimed in claim 79 wherein the displayed selectable options
20 may include placing a telephone call, but not instant messaging
81. A mobile telephone as claimed in claim 79 or 80, wherein the displayed selectable
options may include instant messaging but not placing a telephone call
82. A mobile telephone as claimed in any one of claims 78 to 81, wherein the
25 selectable options displayed are dependent upon presence attribute information indicating
the availability of the first party for instant messaging.
83. A mobile telephone as claimed in any one of claims 78 to 82, wherein the
30 selectable options displayed are dependent upon presence attribute information indicating
the availability of the first party for a telephone call.
84. A mobile telephone as claimed in any one of claims 78 to 83, wherein the
35 selectable options displayed are dependent upon presence attribute information indicating
the preferred method of contact for the first party

85. A mobile telephone as claimed in any one of claims 78 to 84, wherein the selectable options displayed are dependent upon presence attribute information indicating the amount of distraction the first party will accept.

5 86. A mobile terminal as claimed in claim in any one of claims 78 to 85, arranged for automatic updating of presence attribute information for a first party.

87. A mobile terminal as claimed in any one of claims 78 to 86, comprising:
an instant messaging client arranged to subscribe, at a server, to presence attributes for a
10 plurality of parties and arranged to receive from the server presence attribute information for each of the parties; and
processing means arranged to process the received presence attribute information and create, for each party, a customised menu of selectable options for initiating communication.

15 88. A mobile terminal as claimed in any one of claims 78 to 87, comprising:
an instant messaging client arranged to get presence attribute information for a party from a server; and
processing means arranged to process the received presence information and create a
20 customised menu of selectable options for initiating communication with the party.

89. A mobile telephone as claimed in any one of claims 78 to 88, wherein the terminal automatically initiates communication with the first party after user selection of the provided option without further user intervention.

25 90. A mobile telephone terminal as claimed in claim 78 or 79, wherein the customised menu is provided at the instigation of the user.

91. A mobile telephone as claimed in claim 90, wherein the instigation involves a single
30 key-stroke.

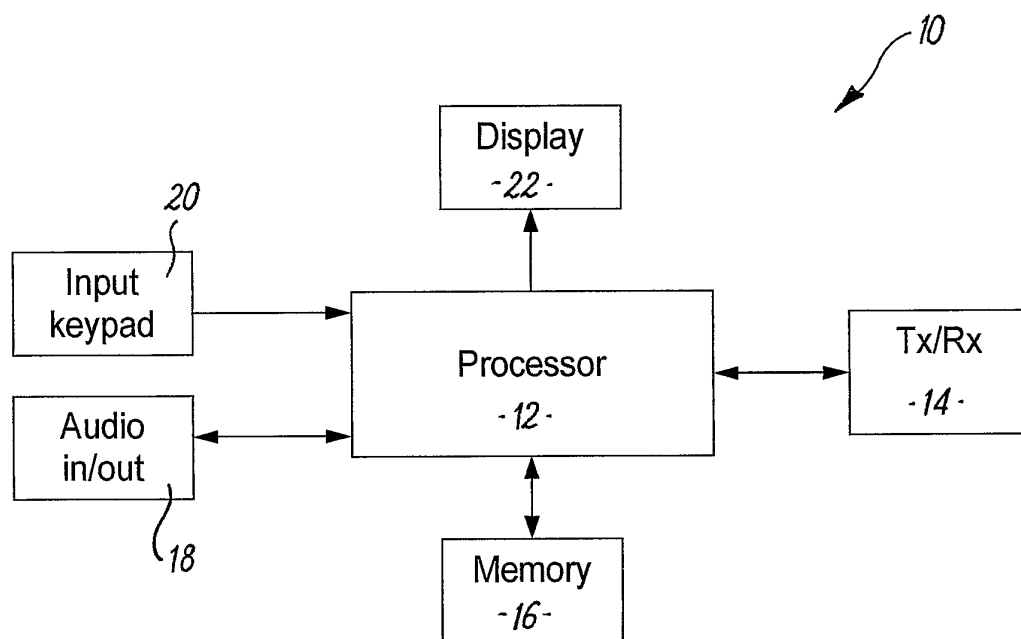
92. A mobile telephone terminal as claimed in any one of claims 78 to 91, arranged to automatically log on to an instant messaging server.

35 93. A mobile telephone terminal as claimed in any one of claims 78 to 92, wherein the displayable entry is associated with the telephone number of the first party.

94. A mobile telephone terminal as claimed in any one of claims 78 to 93 comprising at least one mobile telephone application for placing a telephone call, wherein the mobile telephone application is arranged to display the entry associated with the first party.
- 5 95. A mobile telephone terminal as claimed in claim 94, wherein the mobile telephone application is a phonebook or a call register or a text message register.
96. A method of providing an intelligent choice of communication options to a user of a mobile telephone terminal comprising the steps of:
- 10 receiving presence attribute information for a first party; and
adapting the options, for initiating communication with the first party, displayed in to a user in dependence upon the received presence attribute information.
97. A terminal comprising:
- 15 an instant messaging client for participating in an instant messaging dialogue with one or more parties; and
a calendar application, for recording appointments, arranged to store the content of an instant messaging dialogue in an appointment record.
- 20 98. A terminal as claimed in claim 97 wherein the calendar application is arranged to initiate instant messaging and the recording of the instant messaging dialogue.
99. A terminal as claimed in claim 97 or 98, wherein an appointment record is user programmable to provide a reminder to a user at a user determined time.
- 25 100. A terminal as claimed in any one of claims 97 to 99, wherein the calendar application allows a user to indicate that a future appointment involves an instant messaging dialogue with identified parties.
- 30 101. A terminal as claimed in any one of claims 97 to 100, wherein the calendar application is arranged to automatically enable the log-on of the terminal to an instant messaging server.
- 35 102. A terminal as claimed in any one of claims 97 to 101, wherein the calendar application is arranged to display an appointment record and to provide to a user, while displaying the appointment record, a selectable option for initiating instant messaging with one or more parties identified in the appointment record.

103. A terminal as claimed in any one of claims 97 to 102, wherein the calendar application is arranged for automatic initiation of instant messaging at a user determined time.
- 5 104. A terminal as claimed in any one of claims 97 to 103, wherein the calendar application is arranged for automatic initiation of instant messaging with parties identified in the appointment record.
- 10 105. A terminal as claimed in any one of claims 97 to 104, wherein the calendar application is arranged to process presence attribute information for parties identified in an appointment record.
- 15 106. A terminal as claimed in any one of claims 97 to 105, wherein the calendar application is arranged to display a presence attribute indicator for a first party identified in a calendar appointment involving an instant messaging dialogue with the first party.
- 20 107. A terminal as claimed in any one of claims 97 to 106, comprising a memory for storing a database in which the instant messaging address of a first party and a telephone number of the first party are associated together.
108. A terminal as claimed in claim 107 arranged to search the database for an instant messaging address.
- 25 109. A method of recording a remote meeting comprising the steps of:
creating an appointment record for the remote meeting in a calendar application ;
initiating an instant messaging dialogue from within the appointment record ;
storing the content of an instant messaging dialogue; and
associating the stored instant messaging dialogue with the appointment record.
- 30 110. A mobile telephone terminal comprising: at least one application from which a telephone call and instant messaging can be initiated, wherein when the application accesses a stored telephone number of a party the stored instant messaging address of that party is automatically accessed or accessible and when the application accesses a
35 stored instant messaging address of a party, the stored telephone number of that party is automatically accessed or accessible.

111. A mobile telephone terminal as claimed in claim 110, comprising:
a memory for storing a database in which an instant messaging address and a telephone
number of a party are associated, wherein when the application accesses a telephone
number of a party stored in the database, the associated instant messaging address is
5 automatically accessed or accessible from the database and when the application
accesses the instant messaging address of a party stored in the database, the associated
telephone number of the party is automatically accessed or accessible from the database.
112. A mobile telephone terminal as claimed in claim 111 comprising a memory for
10 storing a database in which the instant messaging address of the first party and a
telephone number of the first party are associated together.
113. A mobile telephone terminal as claimed in claim 112, arranged to search the
15 database for an instant messaging address using an associated telephone number.
114. A mobile telephone terminal as claimed in claim 112 or 113, arranged to search the
database for a telephone number using an associated instant messaging address.
115. A mobile terminal substantially as hereinbefore described with reference to and/or
20 as shown in the accompanying drawings.
116. Any novel subject matter or combination including novel subject matter disclosed,
whether or not within the scope of or relating to the same invention as the preceding
claims.

$\frac{1}{3}$ **FIG. 1**

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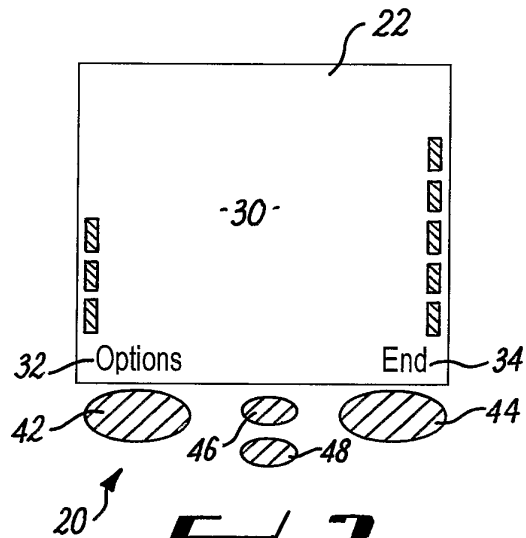


FIG. 2

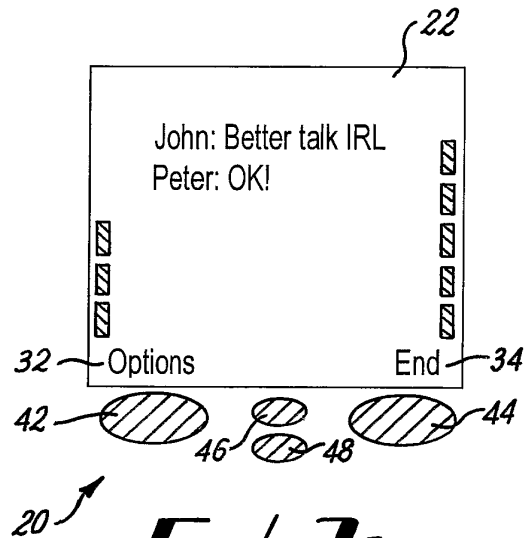


FIG. 3A

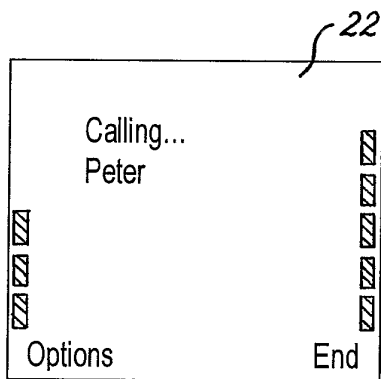


FIG. 3B

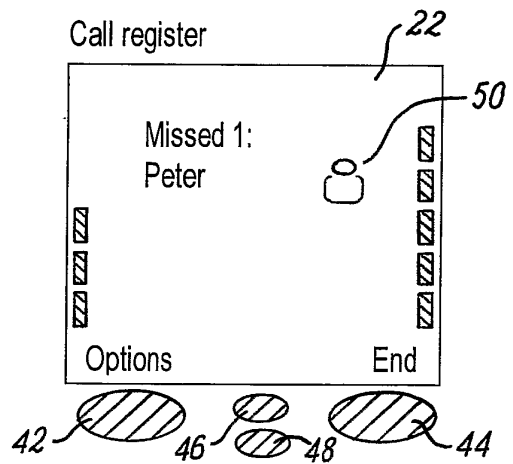
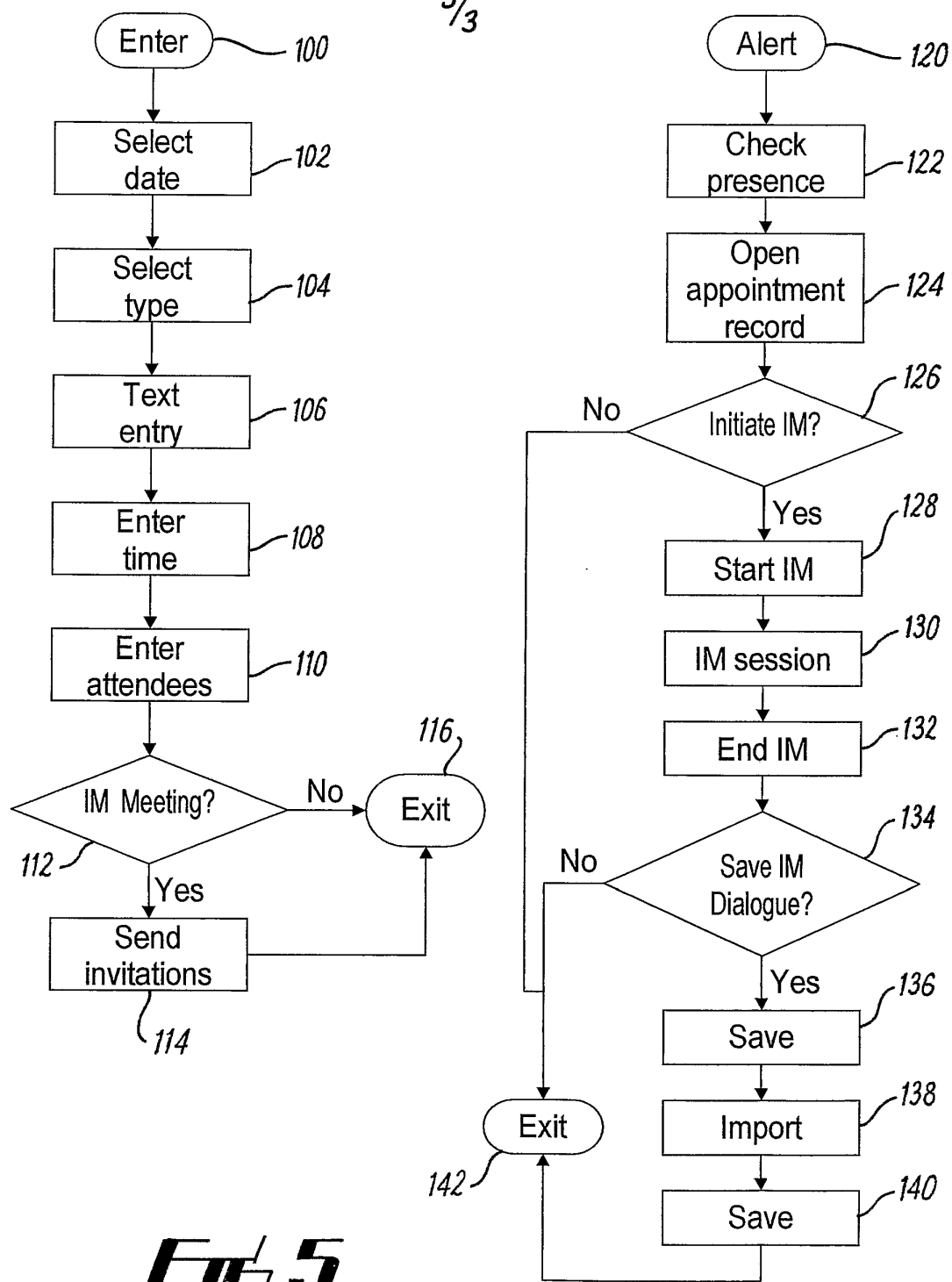


FIG. 4

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 02/05576

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04Q 7/00, G06F 13/00, H04L 29/06

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)

IPC7: H04Q

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

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	WO 0193047 A1 (MOTOROLA, INC.), 6 December 2001 (06.12.01), page 1, line 1 - page 2, line 15, figures 1-6, abstract --	1,13-15, 27-29,55-58, 77-78,96-97, 109-110
X	EP 1130869 A1 (SONY INTERNATIONAL (EUROPE) GMBH), 5 Sept 2001 (05.09.01), page 2, line 1 - page 7, line 31, figures 7-15 --	1,13-15, 27-29,57-58, 78,96-97



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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

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Date of the actual completion of the international search

11 June 2003

Date of mailing of the international search report

01-07-2003

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 02/05576

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	US 2002129103 A1 (BIRKLER, J. ET AL), 12 Sept 2002 (12.09.02), paragraph [0005]; figures 1-10; abstract --	1,13-15, 27-29,55-59, 77-78,96-97, 109-110
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IB 02/05576

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				WO	0239692 A	16/05/02

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(54) Method of Message Forwarding Using Wireless Instant Messenger and Its System

Summary

This invention involves the method of message forwarding using a wireless instant messenger and the system equipped with a wireless instant messenger, messenger list server and database, which receives messages that were sent from a mobile station in a computer or receives messages that were sent from a subscriber sender to a subscriber recipient in the subscriber recipient's computer.

The message forwarding method using a wireless instant messenger achieved in this invention includes the following steps: (a) a step that forwards a message sent from a subscriber sender's mobile station or a short message entity (SME) to a message center; (b) a step where the message center sends a confirmation notice to the subscriber sender when the above message arrives at the message center and is stored in the message center's database; (c) a step that searches the list of wireless instant messenger subscribers using the messenger list server based on the recipient's number and sends the message to the subscriber recipient's mobile station if the subscriber is not a wireless instant messenger subscriber, or if [the subscriber] is a wireless instant messenger subscriber, the step that searches the current status of the subscriber recipient's wireless instant messenger registered in the messenger list server; and (d) a step that sends the message to the subscriber recipient's mobile station if receiving messages is disabled the subscriber recipient's wireless instant messenger's current status, or if receiving messages is enabled, the step that authenticates the subscriber recipient's effective subscription and sends the message to the IP address registered in the messenger list server.

Representation Diagram

Diagram 4

Specification

Brief Description of Diagrams

Diagram 1 is a block drawing of the concept of an existing short message service.

Diagram 2 represents the composition of the wireless instant messaging system of this invention.

Diagram 3 is a block drawing of the concept of the wireless instant messaging system of this invention.

Diagram 4 is a flowchart representing the Phone-to-PC message forwarding method of the wireless instant messaging system of this invention.

Diagram 5 is a flowchart representing the forwarding method of a message sent from a wireless instant messenger.

Detailed Explanation of the Invention

Purpose of the Invention

Technology of the Invention and Prior Arts in the Field

This invention involves the method of message forwarding using a wireless instant messenger and its system equipped with a wireless instant messenger, messenger list server and database, which receives messages that were sent from a mobile station in a computer or receives messages that were sent from a subscriber sender to a subscriber recipient with the subscriber recipient's computer.

Short message (SMS: Short Message Service) offers the function that enables mutual exchange of text messages of a limited length between mobile communication subscribers through mobile stations (MS: Mobile Station).

Diagram 1 is a block drawing of the concept of an existing short message service.

In other words, as shown in Diagram 1, it is the communication service that forwards [messages] in the form of a short message of a limited size between two mobile stations or between a mobile station and a short message entity (SME: Short Message Entity).

The concept of the composition of the communication system for the above service is discussed below:

The system that stores a short message transmitted to a subscriber recipient who cannot receive the message at an arbitrary moment until the subscriber can receive the message and forwards the message [when the recipient can receive the message] and also during the subscriber recipient's phone call is referred to as a message center (MC: Message Center).

A message center (MC) has the function to forward a short message to mobile subscribers by connecting to a home location register (HLR: Home Location Register) and a mobile switching center (MSC: Mobile Switching Center) to understand the recipient's location, and it is connected to external clients referred to as short message entity (SME).

A message center (MC) connects to short message entities (SME) through TCI/IP based short message client interface (SMCI: Short Message Client Interface). The programs designed to send, receive and manage short messages through such an interface is referred to as a short message client (SMC: Short Message Client).

Short message clients (SMC) play the role of the gateway to other networks and also provide the user interface functions. For as long as the clients, a message center (MC) and TCP/IP are provided, the clients can be in a computer where the message center (MC) is installed or a computer in another location.

A message received from a short message client (SMC) is stored in the message center's internal database according to the recipient's number and a route inquiry is sent to the home location register (HLR) to find the subscriber recipient's location information. When the information concerning the route is received successfully from the home location register (HLR), the message center sends the message to the mobile switching center (MSC).

The mobile switching center (MSC) sends the message to the base station where the subscriber recipient belongs, and the base station sends the message to the subscriber recipient's mobile station using the paging channel (access channel in transmittals). A mobile station that received the message normally forwards the confirmation notice in the reverse order as the message receipt, and the mobile switching center (MSC) deletes the message from its storage and generates the billing record.

Technical Problem the Invention Purports to Solve

The technical problem the invention purports to solve is to provide the method of message forwarding using a wireless instant messenger and the system thereof equipped with a wireless instant messenger, messenger list server and database that receives messages that were transmitted from a mobile station in a computer or receives messages from a subscriber sender sent to a subscriber recipient in the subscriber recipient's computer.

Composition and Effect of the Invention

The message forwarding method using a wireless instant messenger achieved in this invention purported to solve the above technical problem includes the following steps: (a) a step that forwards a message transmitted from a subscriber sender's mobile station or a short message entity (SME) to a message center; (b) a step where the message center transmits a confirmation notice to the subscriber sender when the above message arrives at the message center and is stored in the message center's database; (c) a step that searches the list of wireless instant messenger subscribers using the messenger list server based on the recipient's number and transmits the message to the subscriber recipient's mobile station if the subscriber is not a wireless instant messenger subscriber, or if [the subscriber] is a wireless instant messenger subscriber, the step that searches the current status of the subscriber recipient's wireless instant messenger registered in the messenger list server; (d) a step that sends the message to the subscriber recipient's mobile station if the subscriber recipient's wireless instant messenger's current status is not available for reception, or, if the status is available for reception, the step that authenticates the subscriber recipient's effective subscription and sends the message to the IP address registered in the messenger list server; and (e) a step of deleting the message stored in the above-mentioned database when sending the message to the subscriber recipient's wireless instant messenger is completed generating billing information.

The message forwarding system using a wireless instant messenger of this invention purported to solve other technical problems above include a mobile switching station (MSC) (30); a home server register (HLR) (31); a message center (40) that handles message processing, such as storage of message, forwarding and re-forwarding; an SMS server (45); a mobile station (10) that terminates forwarding by generating or receiving a short message; a messenger list server (50) that stores IP addresses and online status of mobile communication subscribers in a network that provides the entities of such message forwarding; a short message forwarding system consisting of the protocol, which is the rule for data exchange between the entities; and the subscriber recipient's computer equipped with a wireless instant messenger (11, 60) that receives the message sent from the above-mentioned mobile station.

In addition, it includes the subscriber sender's computer equipped with a wireless instant messenger (11, 60) to send a message to the subscriber recipient's computer or mobile station.

The details of the invention are explained below by referring to the diagrams.

Diagram 2 represents the composition of the wireless instant messaging system of this invention.

Diagram 2 is used by adding MSC (Mobile Switching Center) (30) and HLR (Home Location Register) (31); a message center (40) that handles message processing, such as storage of message, forwarding, re-forwarding; an SMS server (45); a mobile station (10) that terminates forwarding by generating or receiving a short message; a network that provides the entities of such message forwarding; a system consisting of the protocol, which is the rule for data exchange between the entities; a messenger list server (50) and database (51) that stores IP addresses and online status of a mobile communication subscriber (referred to as "subscribers" below); and a wireless instant messenger (11, 60).

On the other hand, instant messaging (instant messaging) is a service that checks whether a counterpart is connected to the internet and achieves two-directional communication in cyberspace, such as exchanging notes, one-on-one conversation, chatting, group formation for as long as the internet is connected. The tool that enables these functions is referred to as an instant messenger (instant messenger), and the famous versions of such instant messengers are ICQ, MSM Messenger, Yahoo Messenger, Daum Messenger.

Diagram 3 is a block drawing of the concept of the wireless instant messaging system of this invention.

As shown in Diagram 3, [the service] is provided in two methods: The method of receiving a message sent from a mobile station (310) to a computer's wireless instant messenger (330) (referred to as "Phone-to-PC; Phone to PC" below) and the method of receiving a subscriber sender's message sent to a subscriber recipient via a computer's wireless instant messenger (320) or another short message entity (SME) (320) in the wireless instant messenger (330) in the subscriber recipient's computer (referred to as "PC-to-PC; PC to PC" below).

A party of the wireless instant messenger (11, 60) (referred to as a "mobile messenger") used in the above wireless instant messaging must be a subscriber [of the messenger service] and the subscriber's computer must be connected to the internet. A subscriber can use the mobile messenger provided by a mobile communication service provider or a mobile messenger service provider by downloading it onto a computer. When the subscriber executes the mobile messenger (11, 60), it is connected to a messenger list server (50).

To use the mobile messenger, the subscriber registers identity authentication, ID and password for identity verification. As the basic configuration, the ID is designated as the mobile station's number. A nickname to replace the mobile station's number may be designated, and sending and receiving of messages through the mobile messenger established based on the mobile station's number and not the nickname. When the subscriber executes the mobile messenger, the status is enabled to send and receive messages, and the subscriber can designate the current status of the mobile messenger.

If the mobile messenger remains idle for a specific duration, it automatically switches to the "receiving and sending messages with the mobile messenger disabled" mode.

The mobile messenger is treated as a type of a mobile station of the subscriber. Upon executing the mobile messenger, the subscriber authentication process to verify the subscriber is implemented. Authentication process in the mobile messenger is implemented differently from the authentication process implemented in a mobile station. The authentication is implemented upon the subscriber's mobile messenger registration, upon a password change to verify the subscriber's identity and upon every message transmission. Therefore, the mobile messenger cannot be used when the subscriber's mobile station is stolen, lost or suspended for non-payment, or when [mobile communication service] is terminated.

The above subscriber authentication is performed once upon signing up for the mobile messenger or upon changing the password for the mobile messenger, and a verification code message containing an arbitrary number is sent to the subscriber's mobile station. The subscriber completes authentication by entering the mobile messenger ID, password and the verification code message received on the mobile station.

The effective subscriber authentication above is implemented upon every message transmission, and it is completed simply through the effectiveness test, [checking against] suspension or termination.

When the subscriber executes the mobile messenger (11, 60), the messenger list server (50) registers the IP address of the subscriber's connection, the current status of the mobile messenger, etc. in a database (51). When [the subscriber] signs off from the mobile messenger (11, 60), the messenger list server (50) deletes the IP address and switches the current status of the mobile messenger to offline mode.

Diagram 4 is a flowchart reflecting the Phone-to-PC message forwarding method.

A message sent from a subscriber sender's mobile station is forwarded to a message center (410). When the transmitted message arrives at the message center and is stored in the message center's database, the message center sends a confirmation notice to the subscriber sender. Based on the recipient's number (420), the message center searches whether [the subscriber recipient] is a member of the mobile messenger using the messenger list server (430). If the recipient is not a mobile messenger member, the message is sent to the subscriber recipient's mobile station (431). If the recipient is a mobile messenger member, the current status of the subscriber recipient's mobile messenger registered in the messenger list server is searched (440).

If the current status of the subscriber recipient's mobile messenger indicates that it is not available to receive [messages], the message is sent to the subscriber recipient's mobile station (441). If it is available to receive [messages], the subscriber recipient's effective subscriber authentication is performed (460) and the message is sent to the IP address registered to the messenger list server (470). When message transmission to the subscriber recipient's mobile messenger is completed, the message stored in the database is deleted (480) and the billing record (billing record) is generated (490).

Also, the above Phone-to-PC message transmission applies to messages transmitted from a subscriber sender's short message entity (SME) (12) as well as a mobile station (10). In other words, when a subscriber sender accesses a short message entity (SME) (12) via the internet, enters the recipient's number and a message and sends the message, the message is forwarded to a message center (40) and the subsequent processes are the same as the processes in the above Phone-to-PC [message transmission].

Diagram 5 is a flowchart reflecting message forwarding of a message transmitted from a wireless instant messenger.

When a subscriber sender executes a mobile messenger, message transmission is enabled.

When a subscriber sender enters the number of the receiving mobile station of the subscriber recipient to receive a message and the message and sends the message, the subscriber sender's effective subscriber authentication is implemented, and the messenger list server forwards the message to a message center. Thereafter, forwarding and re-forwarding of the message, deletion of the message for which forwarding is completed, and billing is implemented identically as in a mobile communications system.

Also, a subscriber sender and a subscriber recipient must both use a mobile messenger when a message is sent and received between two mobile messengers, and the subscriber recipient must be available to receive messages in the mobile messenger. When the subscriber sender and the subscriber recipient are both available to send and receive messages using the mobile messenger, the message is forwarded based on the IP addresses of the subscriber sender and recipient registered on the messenger list server. These processes are identical to processes implemented in an internet instant messenger.

This invention is not limited to the above-described embodiments and can be modified in a diverse manner within the scope to the extent of not compromising the concept of the invention. Therefore, the scope of the rights claimed in this invention will be limited to the scope of the claims described below, and not within the scope of detailed explanation.

Effect of Invention

With this invention, messages can be received with a mobile communication subscriber's computer through a wireless instant messenger, which would enable servicing of other functions through the exchange and modification of messages, and it forms the foundation for the development of additional services that can receive or provide various information and functions.

*(57) Scope of Claims***Claim 1.**

In a short message transmittal system consisting of a mobile switching center (MSC), home location register (HLR), message center (MC), SMS server, mobile station, a network that provides such message transmission entities and the protocol, which is the rule for data exchange between the above entities,

A message forwarding system using a wireless instant messenger with the following features:

A messenger list server that stores the mobile communication subscriber's information such as IP address and online status; and

The subscriber recipient's computer equipped with a wireless instant messenger to receive messages sent from the above-mentioned mobile station; and

Receiving messages sent from the above-mentioned mobile station in the wireless instant messenger installed on the subscriber recipient's computer.

Claim 2.

A message forwarding system using a wireless instant messenger in Claim 1 with the following features:

Subscriber sender's computer equipped with a an additional wireless instant messenger for sending messages,

And receipt of messages sent from the wireless instant messenger or a short message entity (SME) on the above-mentioned subscriber sender's computer in the wireless instant messenger in the above-mentioned subscriber sender's computer.

Claim 3.

A message forwarding system using a wireless instant messenger in Claim 1 characterized by the above-mentioned messenger list server

That registers the IP address of the subscriber's access to the wireless instant messenger, the current status of the wireless instant messenger, on the database, and when [the subscriber] signs off from the wireless instant messenger, deletes the subscriber's access IP address and switches the status of the wireless instant messenger to "offline."

Claim 4.

A message forwarding system using a wireless instant messenger with the following features:

(a) A step that forwards a message sent from a subscriber sender's mobile station or a short message entity (SME) to a message center;

(b) A step where the message center sends a confirmation notice to the subscriber sender when the above message arrives at the message center and is stored in the message center's database;

(c) A step that searches the list of wireless instant messenger subscribers using the messenger list server based on the recipient's number, and sends the message to the subscriber recipient's mobile station if the subscriber is not a wireless instant messenger subscriber or if [the subscriber] is a wireless instant messenger subscriber, a step that searches the current status of the subscriber recipient's wireless instant messenger registered in the messenger list server;

(d) A step that sends the message to the subscriber recipient's mobile station if receiving messages is disabled the subscriber recipient's wireless instant messenger's current status, or if receiving messages is enabled, the step that authenticates the subscriber recipient's effective subscription and sends the message to the IP address registered in the messenger list server; and

(e) A step of deleting the message stored in the previously mentioned database when sending the message to the subscriber recipient's wireless instant messenger is completed generating billing information.

Claim 5.

On Claim 4,

Message forwarding system using a wireless instant messenger with the following features:

The above-mentioned subscriber sender and subscriber recipient in Claim 4 sends/receives messages through authentication;

And the above-mentioned subscriber authentication is

Implemented upon the subscriber's mobile messenger registration or upon a password change, and a verification code message is sent to the subscriber's mobile station.

Claim 6

Message forwarding system using a wireless instant messenger characterized by

The effective subscriber authentication in Claim 4 is implemented upon every transmission and reception of a message using the wireless instant messenger, and only implements the effectiveness test against temporary suspension or termination to complete the authentication.

Diagrams

Diagram 1

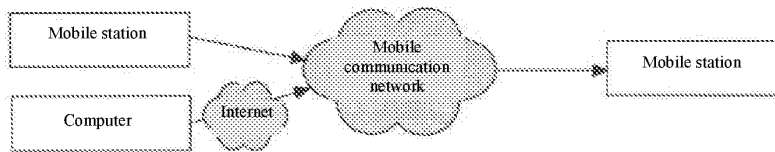


Diagram 2

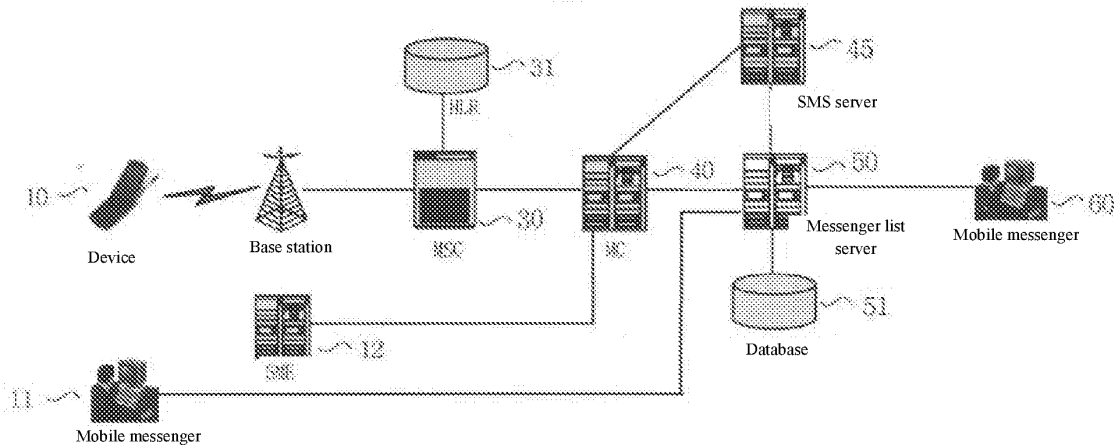


Diagram 3

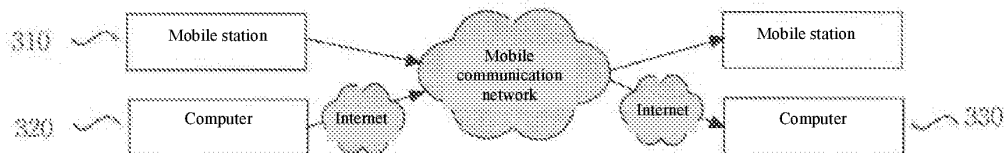


Diagram 4

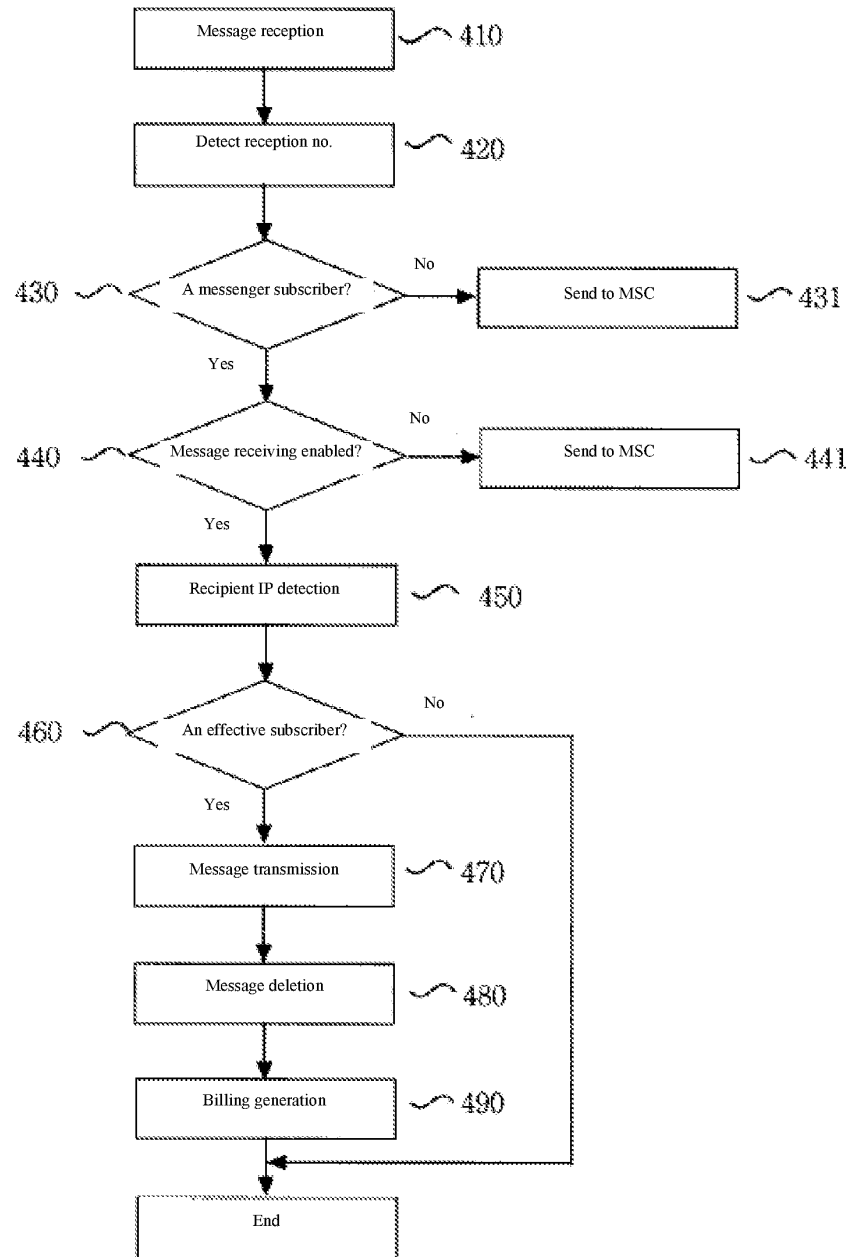
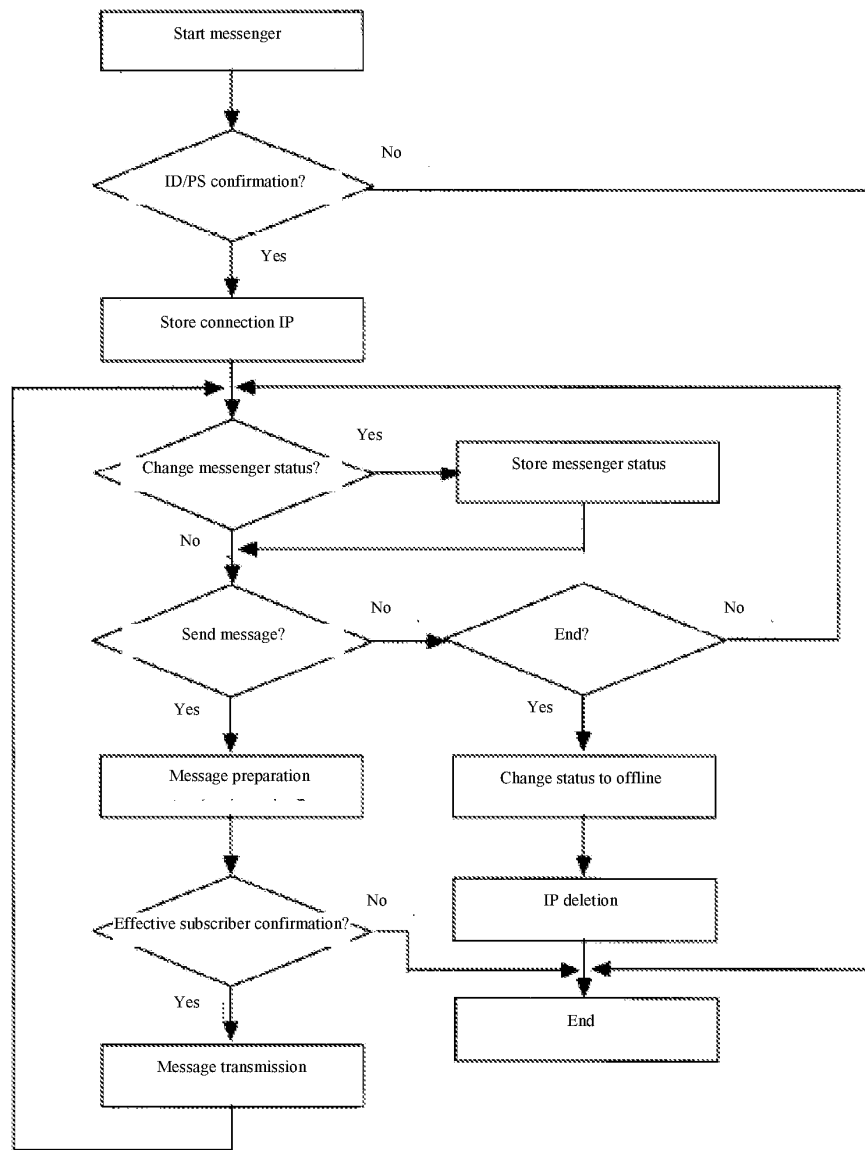


Diagram 5



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(54) 무선 인스턴트 메신저에 의한 메시지 전달 방법 및 그시스템

요약

본 발명은 무선 인스턴트 메신저와 메신저 리스트서버 및 데이터베이스를 구비하고 이동단말기로부터 전송된 메시지를 컴퓨터로 수신하거나, 발신 가입자가 컴퓨터로 착신 가입자에게 전송된 메시지를 착신 가입자의 컴퓨터로 수신하는 무선 인스턴트 메신저에 의한 메시지 전달 방법 및 시스템에 관한 것이다.

본 발명에 의한 무선 인스턴트 메신저에 의한 메시지 전달 방법은 (a)발신 가입자의 이동단말기 또는 단문 메시지 개체(SME)에서 전송된 메시지를 메시지 센터로 전달하는 단계; (b)상기 전송 메시지가 메시지 센터에 도착하여 메시지 센터의 데이터베이스에 저장되면 메시지센터는 발신 가입자에게 확인통보를 전송하는 단계; (c)착신번호에 의하여 메신저 리스트서버로 무선 인스턴트 메신저 회원인지를 검색하여, 무선 인스턴트 메신저 회원이 아니라면 착신 가입자의 이동단말기로 메시지를 전송하며, 무선 인스턴트 메신저 회원이라면 메신저 리스트서버에 등록된 착신 가입자의 무선 인스턴트 메신저의 현재상태를 검색하는 단계; 및 (d)착신 가입자의 무선 인스턴트 메신저의 현재상태가 수신 가능한 상태가 아니라면 착신 가입자의 이동단말기로 메시지를 전송하며, 수신 가능한 상태라면 수신 가입자의 유효 가입자 인증이 이루어지고 메신저 리스트서버에 등록된 IP주소로 메시지를 전송하는 단계를 포함함을 특징으로 한다.

대표도

도 4

영세서

도면의 간단한 설명

도 1은 종래의 단문 메시지 서비스의 개념을 블록도로 도시한 것이다.

도 2는 본 발명에 의한 무선 인스턴트 메시징 시스템의 구성을 도시한 것이다.

도 3은 본 발명에 의한 무선 인스턴트 메시징 서비스의 개념을 블록도로 도시한 것이다.

도 4는 본 발명에 의한 무선 인스턴트 메시징 서비스에서 폰투피시(Phone to PC)에서의 메시지 전달방법을 도시한 흐름도이다.

도 5는 무선 인스턴트 메신저에서의 발신메시지 전달방법을 도시한 흐름도이다.

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 메시지 전송 서비스 방법 및 시스템에 관한 것으로서, 특히 무선 인스턴트 메신저를 이용하여 이동단말기로부터 전송된 메시지를 컴퓨터로 수신하거나, 발신 가입자가 컴퓨터로 착신 가입자에게 전송된 메시지를 착신 가입자의 컴퓨터로 수신하는 이동통신망을 이용한 메시지 전송 서비스 방법 및 시스템에 관한 것이다.

단문 메시지(SMS: Short Message Service)는 이동통신 가입자 상호간에 제한된 길이의 문자 메시지를 이동단말기(MS: Mobile Station)를 통해 상호 교환할 수 있는 기능을 제공한다.

도 1은 종래의 단문 메시지 서비스의 개념을 블록도로 도시한 것이다.

즉, 도 1에서 보는 바와 같이 이동단말기와 이동단말기 간, 이동단말기와 단문 메시지 개체(SME: Short Message Entity)들 사이에 한정된 크기의 단문 형태로 전달하는 통신 서비스를 나타내는 것이다.

상기 서비스를 위한 통신 시스템의 구성을 개략적으로 살펴보면 다음과 같다.

임의의 순간에 수신할 수 없는 착신 가입자에게 전송되는 단문을 가입자가 수신할 수 있을 때까지 저장(store)하였다가 전달(forward)하여 주고 통화중인 착신 가입자에게도 전달하여 주는 기능을 갖고 있는 시스템을 메시지센터(MC: Message Center)라 한다.

메시지센터(MC)는 홈 위치 레지스터(HLR: Home Location Register)와 이동전화 교환국(MSC: Mobile Switching Center)와 연결되어 수신자의 위치를 파악하여 이동 가입자들에게 단문을 전달하여 주는 기능을 갖고 있으며, 단문 메시지 개체(SME)라고 불리는 외부 클라이언트들과 연결되어 있다.

메시지센터(MC)는 TCP/IP를 기본으로 한 단문 메시지 클라이언트 인터페이스(SMCI: Short Message Client Interface)를 통하여 단문 메시지 개체(SME)들과 접속된다. 이러한 인터페이스를 통하여 단문을 보내고 받고 관리하도록 만든 프로그램들을 단문 메시지 클라이언트(SMC: Short Message Client)라고 한다.

단문 메시지 클라이언트(SMC)들은 다른 네트워크에 대한 게이트웨이 구실을 하기도 하고 유저 인터페이스 기능들을 제공하기도 한다. 각 클라이언트들과 메시지 센터(MC), 그리고 TCP/IP만 제공된다면 클라이언트들은 메시지센터(MC)가 탑재된 컴퓨터에 있어도 되고, 다른 장소의 컴퓨터에 있어도 된다.

단문 메시지 클라이언트(SMC)로부터 받은 메시지는 착신번호에 따라 메시지 센터의 내부 데이터베이스에 저장되고, 착신 가입자의 위치정보를 알기 위하여 홈 위치 레지스터(HLR)로 경로문의를 한다. 홈 위치 레지스터(HLR)로부터 경로에 대한 정보를 성공적으로 받으면 메시지센터(MC)는 이동전화 교환국(MSC)로 전송한다.

이동전화 교환국(MSC)는 착신 가입자가 속해있는 기지국으로 메시지를 전송하면, 기지국은 페이징 채널(발신시에는 액세스 채널)을 이용하여 착신 가입자의 이동단말기로 전송한다. 메시지를 정상적으로 수신한 이동단말기는 메시지를 받은 순서의 역순으로 확인통보를 전달하여, 이동전화 교환국(MSC)는 저장하고 있던 메시지를 삭제하고 과금정보를 생성한다.

발명이 이루고자 하는 기술적 과제

본 발명이 이루고자 하는 기술적 과제는 무선 인스턴트 메신저와 메신저 리스트서버 및 데이터베이스를 구비하고 이동단말기로부터 전송된 메시지를 컴퓨터의 인스턴트 메신저로 수신하거나, 발신 가입자가 컴퓨터의 무선 인스턴트 메신저 또는 단문 메시지 개체(SME)에서 착신 가입자에게 전송된 메시지를 착신 가입자의 컴퓨터의 무선 인스턴트 메신저로 수신하는 방법 및 시스템을 제공하는 것이다.

발명의 상세한 설명

상기 기술적 과제를 해결하기 위한 본 발명에 의한 무선 인스턴트 메신저에 의한 메시지 전달 방법은 (a)발신 가입자의 이동단말기 또는 단문 메시지 개체(SME)에서 전송된 메시지를 메시지 센터로 전달하는 단계; (b)상기 전송 메시지가 메시지 센터에 도착하여 메시지센터의 데이터베이스에 저장되고, 메시지센터는 발신 가입자에게 확인통보를 전송하는 단계; (c)착신번호에 의하여 메신저 리스트서버로 무선 인스턴트 메신저 회원인지를 검색하여, 무선 인스턴트 메신저 회원이 아니라면 착신 가입자의 이동단말기로 메시지를 전송하며, 무선 인스턴트 메신저 회원이라면 메신저 리스트서버에 등록된 착신 가입자의 무선 인스턴트 메신저의 현재 상태를 검색하는 단계; (d)착신 가입자의 무선 인스턴트 메신저의 현재상태가 수신 가능한 상태가 아니라면 착신 가입자의 이동단말기로 메시지를 전송하며, 수신 가능한 상태라면 수신 가입자의 유효 가입자 인증이 이루어지고 메신저 리스트서버에 등록된 IP주소로 메시지를 전송하는 단계; 및 (e)착신 가입자의 무선 인스턴트 메신저로 메시지 전송이 완료되면 상기 데이터베이스에 저장된 메시지를 삭제하고, 과금정보를 생성하는 단계를 포함함을 특징으로 한다.

상기 다른 기술적 과제를 해결하기 위한 본 발명에 의한 무선 인스턴트 메신저에 의한 메시지 전달 시스템은 이동전화 교환국(MSC)(30), 홈 위치 레지스터(HLR)(31), 메시지의 저장과 전달 및 재전달 등의 메시지처리를 담당하는 메시지센터(40), SMS서버(45), 단문 메시지를 생성 또는 수신하여 전달상황을 종료시키는 이동단말기(10), 그리고 이러한 메시지 전달의 매개체를 제공하는 망(Networks)과 이들간에 데이터 교환을 위한 규약인 프로토콜들로 구성된 단문 메시지 전송 시스템에 있어서, 이동통신 가입자의 IP주소 및 온라인 상태 등의 정보를 저장하는 메신저 리스트서버(50); 및 무선 인스턴트 메신저(11,60)를 구비하여 상기 이동단말기로부터 전송된 메시지를 수신하는 착신 가입자 컴퓨터;를 포함하는 것을 특징으로 한다.

또한, 무선 인스턴트 메신저(11,60)를 구비하여 상기 착신 가입자의 컴퓨터 또는 이동단말기로 메시지를 전송하는 발신 가입자 컴퓨터;를 더 포함하는 것을 특징으로 한다.

이하 도면을 참조하여 본 발명을 상세히 설명하기로 한다.

도 2는 본 발명에 의한 무선 인스턴트 메시징 시스템의 구성을 도시한 것이다.

도 2는 MSC(Mobile Switching Center)(30)와 HLR(Home Location Register)(31), 메시지의 저장과 전달 및 재전달 등의 메시지처리를 담당하는 메시지센터(40), SMS서버(45), 단문 메시지를 생성 또는 수신하여 전달상황을 종료시키는 이동단말기(10), 그리고 이러한 메시지 전달의 매개체를 제공하는 망(Networks)과 이들간에 데이터 교환을 위한 규약인 프로토콜들로 구성된 시스템에 이동통신 가입자(이하 '가입자'라 한다)의 IP주소(internet protocol address) 및 온라인 상태 등의 정보를 저장하는 메신저 리스트서버(50) 및 데이터베이스(51)와 인스턴트메신저(11,60)를 추가하여 사용된다.

한편, 인스턴트 메시징(instant messaging)이란 인터넷에 접속만 되어 있으면 상대방이 인터넷에 접속되어 있는지 확인하고 실시간으로 쪽지를 주고받으며 1대1 대화, 채팅, 동호회 구성 등 사이버 공간 내에서의 쌍방향 커뮤니케이션을 실현하는 서비스이며, 이를 가능하게 하는 도구를 인스턴트 메신저(instant messenger)라 하며, 대표적인 인스턴트 메신저로는 ICQ, MSN 메신저, 야후 메신저, 다음 메신저 등이 있다.

도 3은 본 발명에 의한 무선 인스턴트 메시징 서비스의 개념을 블록도로 도시한 것이다.

도 3과 같이 이동단말기(310)로부터 전송된 메시지를 컴퓨터의 무선 인스턴트 메신저(330)로 수신(이하 '폰투피시:Phone to PC'라 한다)하는 방법과 발신 가입자가 컴퓨터의 무선 인스턴트 메신저(320) 또는 단문 메시지 개체(SME)(320)로부터 착신 가입자에게 전송된 메시지를 착신 가입자 컴퓨터의 무선 인스턴트 메신저(330)로 수신(이하 '피시투피시:PC to PC'라 한다)하는 두 가지 방법으로 수행된다.

상기 무선 인스턴트 메시징에 사용되는 무선 인스턴트 메신저(11,60)(이하 '모바일 메신저'라 한다)를 이용하기 위해서는 가입자이어야 하며, 가입자의 컴퓨터는 인터넷 망에 연결되어 있어야 한다. 가입자는 이동통신 사업자 또는 모바일 메신저 사업자에 의해 제공된 모바일 메신저를 컴퓨터에 내려 받아(download) 사용한 다. 가입자가 모바일 메신저(11,60)를 실행하면 메신저 리스트서버(50)와 연결된다.

가입자는 모바일 메신저를 사용하기 위해서 가입자임을 확인하기 위한 가입자 본인인증과 아이디 및 비밀번호를 등록한다. 아이디는 기본값으로 이동단말기 번호로 지정되며, 이동단말기 번호를 대신할 닉네임을 지정할 수 있으며, 모바일 메신저에 의한 메시지의 발신 및 수신은 닉네임이 아닌 이동단말기의 번호에 의해서 이루어진다. 가입자가 모바일 메신저를 실행시키면 메시지의 수신 및 발신 가능 상태가 되며, 가입자에 의해서 모바일 메신저의 현재상태를 따로 지정할 수 있다.

만일 특정시간동안 모바일 메신저를 사용하지 않을 경우 자동으로 모바일 메신저에 의한 메시지 수신불가 상태로 전환된다.

모바일 메신저는 가입자의 또 다른 형태의 이동단말기와 같이 취급된다. 모바일 메신저를 실행하면 유효한 가입자인가를 확인하는 것을 목적으로 하는 가입자인증 처리절차가 수행된다. 모바일 메신저에서의 인증은 이동단말기에서 수행하는 인증처리 절차와 다르게 수행된다. 인증은 가입자의 모바일 메신저 가입시, 비밀번호 변경시 수행하는 본인 확인을 위한 가입자 인증과 매 메시지의 발신 또는 메시지의 착신마다 수행하는 유효 가입자 인증이 수행된다. 따라서 가입자가 이동단말기의 도난, 분실, 요금미납 등에 의한 일시정지 상태이거나, 해지의 경우 모바일 메신저를 사용할 수 없게된다.

상기 가입자 인증은 모바일 메신저 가입시 최초 1회 또는 모바일 메신저 비밀번호 변경시 실시되며, 가입자의 이동단말기로 임의의 번호가 부여된 확인코드 메시지를 전송한다. 가입자는 모바일 메신저 아이디, 비밀번호 이외에 이동단말기로 받은 확인코드 메시지를 입력함으로써 가입자 인증이 완료된다.

상기 유효 가입자 인증은 모바일 메신저에 의한 메시지의 발신 및 착신시 마다 수행하며 일시정지 또는 해지 등의 유효성 검사만 수행하여 인증이 완료된다.

가입자가 모바일 메신저(11,60)를 실행시키면 메신저 리스트서버(50)는 가입자가 접속한 IP주소, 모바일 메신저의 현재상태 등을 데이터베이스(51)에 등록하며, 모바일 메신저(11,60)를 종료하면 메신저 리스트 서버(50)는 가입자의 IP주소를 삭제하고, 모바일 메신저의 현재상태를 오프라인 상태로 전환한다.

도 4는 폰투피시(Phone to PC)에서의 메시지 전달방법을 도시한 흐름도이다.

발신 가입자의 이동단말기에서 전송된 메시지는 메시지 센터에 전달된다(410). 전송 메시지가 메시지센터에 도착하여 메시지센터의 데이터베이스에 저장되면 메시지센터는 발신 가입자에게 확인통보를 전송한다. 메시지 센터는 착신 번호(420)에 의하여 메신저 리스트서버로 모바일 메신저 회원인지를 검색한다(430). 만일 모바일 메신저 회원이 아니라면 착신 가입자의 이동 단말기로 메시지를 전송하며(431), 모바일 메신저 회원이라면 메신저 리스트서버에 등록된 착신 가입자의 모바일 메신저의 현재상태를 검색한다(440).

착신 가입자의 모바일 메신저의 현재상태가 수신 가능한 상태가 아니라면 착신 가입자의 이동단말기로 메시지를 전송하며(441), 수신 가능한 상태라면 착신 가입자의 유효 가입자 인증이 이루어지고(460) 메신저 리스트서버에 등록된 IP주소로 메시지를 전송한다(470). 착신 가입자의 모바일 메신저로 메시지 전송이 완료되면 데이터베이스에 저장된 메시지를 삭제하고(480), 과금정보(billing record)를 생성한다(490).

또한, 상기 폰투피시에서의 메시지 전달은 이동단말기(10) 뿐만 아니라 발신 가입자에 의한 단문 메시지 개체(SME)(12)로부터 전송된 메시지 역시 동일하게 전달된다. 즉, 발신 가입자가 인터넷에 의한 단문 메시지 개체(SME)(12)로 접속하여 착신번호 및 메시지를 작성하여 전송하면 메시지는 메시지센터(40)에 전달되며 이후 처리과정은 상기 폰투피시와 동일하게 적용된다.

도 5는 모바일 메신저에서의 발신메시지 전달방법을 도시한 흐름도이다.

발신 가입자가 모바일 메신저를 실행하면 메시지의 발신이 가능하게 된다.

발신 가입자는 메시지를 전송할 착신 가입자의 착신 이동단말기 번호와 메시지를 작성하여 전송하면 발신 가입자의 유효 가입자 인증이 이루어지고 메신저 리스트서버는 이를 메시지센터에 전달한다. 이후, 메시지의 전달 및 재 전달, 전송완료 메시지의 삭제, 과금 등은 이동통신 시스템에서의 전달과정과 동일하게 수행된다.

또한, 모바일 메신저로부터 전송된 메시지를 모바일 메신저로 수신하는 경우에 있어서도, 발신 가입자 및 착신 가입자 모두 모바일 메신저를 사용하고 있으며, 착신 가입자는 모바일 메신저에 의한 수신 가능한 상태이어야 한다. 발신 가입자와 수신 가입자가 모바일 메신저에 의한 발신 및 수신 가능한 상태라면 메신저 리스트 서버에 등록된 발신 및 착신 가입자의 IP주소에 의해서 메시지는 전달된다. 이러한 과정은 인터넷 인스턴트 메신저에서의 수행되는 방법과 동일하다.

본 발명은 상술한 실시예에 한정되지 않으며, 본 발명의 사상을 해치지 않는 범위 내에서 다양한 변형이 가능함은 물론이다. 따라서 본 발명에서 권리를 청구하는 범위는 상세한 설명의 범위 내로 정해지는 것이 아니라 후술하는 청구범위로 한정될 것이다.

발명의 상세한 설명

본 발명에 의하면, 무선 인스턴트 메신저를 통하여 이동통신 가입자의 컴퓨터로 메시지를 받을 수 있게 됨으로서 메시지의 교환과 변환을 통한 다른 기능제공 서비스가 가능하며, 다양한 정보와 기능을 제공받거나 제공할 수 있는 부가서비스 개발이 가능한 토대가 형성된다.

(57) 청구의 범위

청구항 1.

이동전화 교환국(MSC), 홈 위치 레지스터(HLR), 메시지센터(MC), SMS서버, 이동단말기 그리고 이러한 메시지 전달의 매개체를 제공하는 망(Networks)과 이들간에 데이터 교환을 위한 규약인 프로토콜들로 구성된 단문 메시지 전송 시스템에 있어서,

이동통신 가입자의 IP주소 및 온라인 상태 등의 정보를 저장하는 메신저 리스트서버; 및

무선 인스턴트 메신저를 구비하여 상기 이동단말기로부터 전송된 메시지를 수신하는 착신 가입자 컴퓨터;를 포함하고,

상기 이동단말기로부터 전송된 메시지를 착신 가입자 컴퓨터에 구비된 무선 인스턴트 메신저로 수신하는 것을 특징으로 하는 무선 인스턴트 메신저에 의한 메시지 전달 시스템.

청구항 2.

제1항에 있어서,

착신가입자 컴퓨터의 무선 인스턴트 메신저로 메시지를 전송하는 발신 가입자 컴퓨터;를 더 구비하고,

상기 발신 가입자 컴퓨터의 무선 인스턴트 메신저 또는 메시지 전송이 가능한 단문 메시지 개체(SME)에서 전송된 메시지를 상기 착신 가입자 컴퓨터의 무선 인스턴트 메신저로 수신하는 것을 특징으로 하는 무선 인스턴트 메신저에 의한 메시지 전달 시스템.

청구항 3.

제1항에 있어서, 상기 메신저 리스트서버는

가입자가 무선 인스턴트 메신저로 접속한 IP주소, 무선 인스턴트 메신저의 현재상태 등을 데이터베이스에 등록하며, 무선 인스턴트 메신저를 종료하면 가입자의 접속된 IP주소를 삭제하고, 무선 인스턴트 메신저의 현재상태를 오프라인 상태로 전환함을 특징으로 하는 무선 인스턴트 메신저에 의한 메시지 전달 시스템.

청구항 4.

(a)발신 가입자의 이동단말기 또는 단문 메시지 개체(SME)에서 전송된 메시지를 메시지 센터로 전달하는 단계;

(b)상기 전송 메시지가 메시지 센터에 도착하여 메시지센터의 데이터베이스에 저장되면 메시지센터는 발신 가입자에게 확인통보를 전송하는 단계;

(c)착신번호에 의하여 메신저 리스트서버로 무선 인스턴트 메신저 회원인지를 검색하여, 무선 인스턴트 메신저 회원이 아니라면 착신 가입자 이동 단말기로 메시지를 전송하며, 무선 인스턴트 메신저 회원이라면 메신저 리스트서버에 등록된 착신 가입자의 무선 인스턴트 메신저의 현재상태를 검색하는 단계;

(d)착신 가입자의 무선 인스턴트 메신저의 현재상태가 수신 가능한 상태가 아니라면 착신 가입자 이동 단말기로 메시지를 전송하며, 수신 가능한 상태라면 수신 가입자의 유효 가입자 인증이 이루어지고 메신저 리스트서버에 등록된 IP 주소로 메시지를 전송하는 단계; 및

(e)착신 가입자의 무선 인스턴트 메신저로 메시지 전송이 완료되면 상기 데이터베이스에 저장된 메시지를 삭제하고, 과금정보를 생성하는 단계를 포함함을 특징으로 하는 무선 인스턴트 메신저에 의한 메시지 전달 방법.

청구항 5.

제4항에 있어서,

상기 발신 가입자와 착신 가입자는 인증을 통해 메시지를 송수신하며,

상기 가입자 인증은

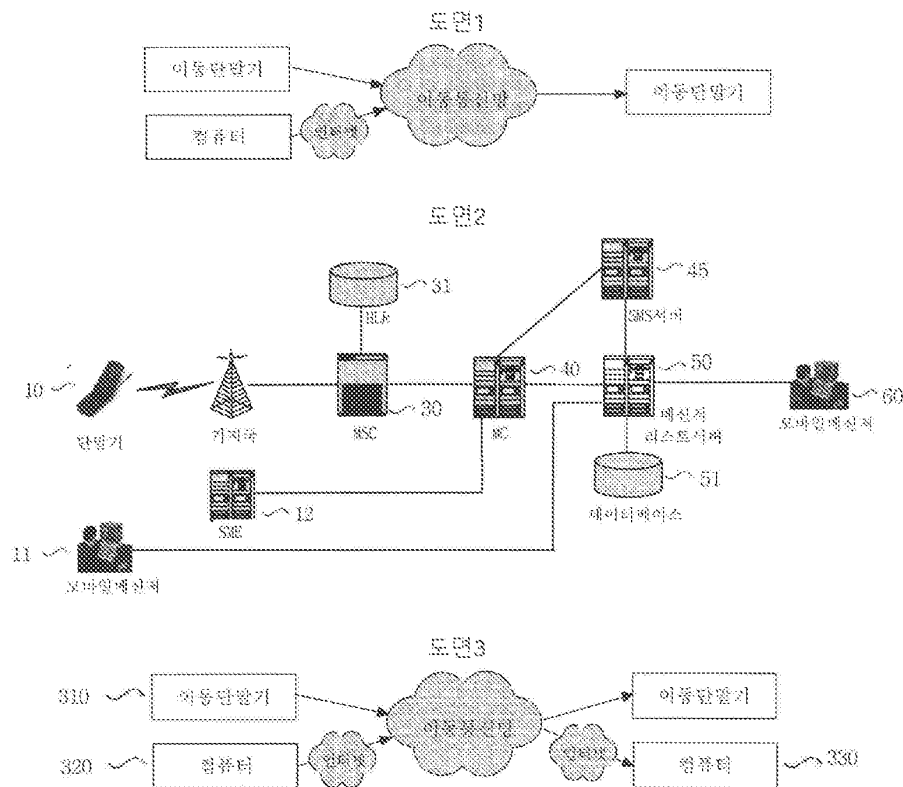
무선 인스턴트 메신저 가입시 최초 1회 또는 모바일 메신저 비밀번호 변경시 실시되며, 가입자의 이동단말기로 확인 코드 메시지를 전송하는 것을 특징으로 하는 무선 인스턴트 메신저에 의한 메시지 전달 방법.

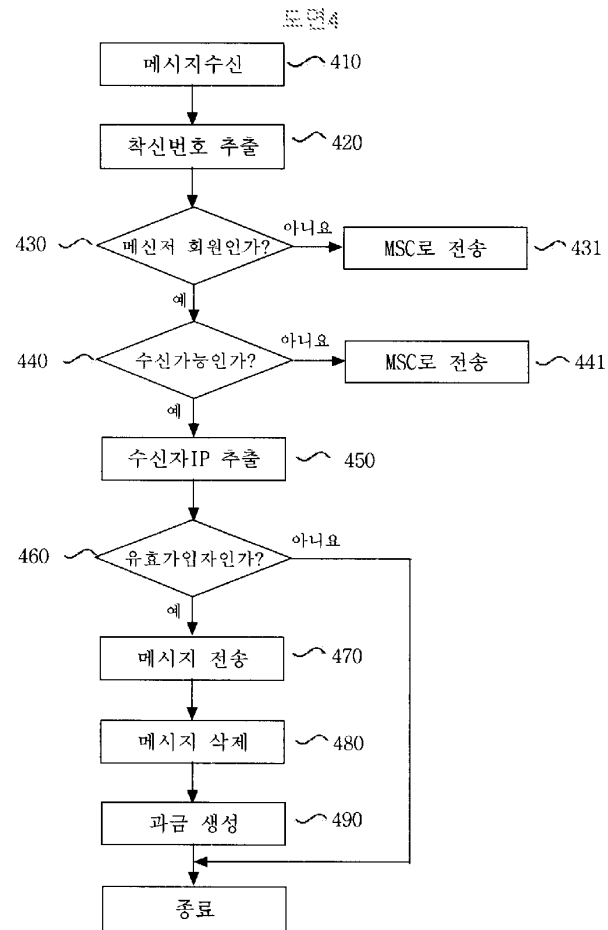
청구항 6.

제4항에 있어서, 상기 (d)단계에서 유효 가입자 인증은

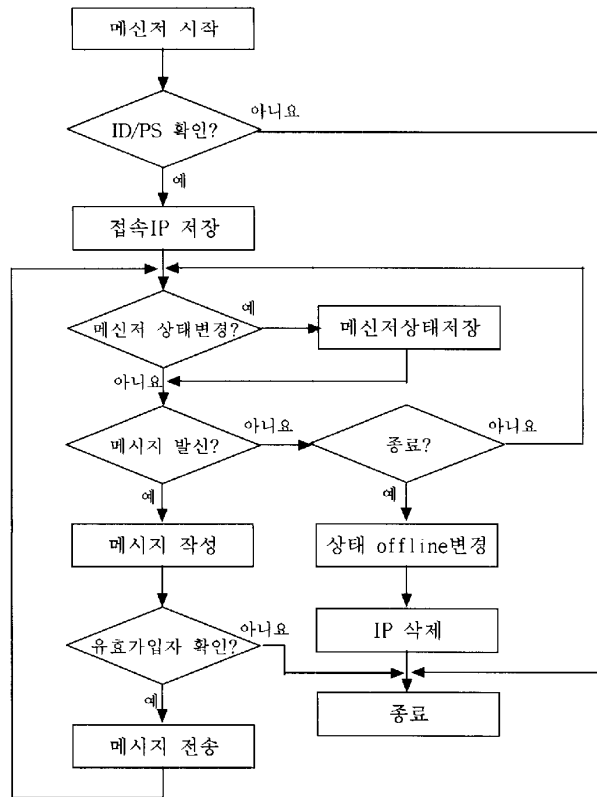
무선 인스턴트 메신저에 의한 메시지의 발신 및 착신시 마다 수행하며 일시정지 또는 해지 등의 유효성 검사만 수행하여 인증이 완료됨을 특징으로 하는 무선 인스턴트 메신저에 의한 메시지 전달 방법.

도면





도면5



Electronic Acknowledgement Receipt	
EFS ID:	41006105
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Carey Kulp
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	02-NOV-2020
Filing Date:	13-DEC-2019
Time Stamp:	15:26:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	RMT-PT001_8-Draft_SB08-EFS.pdf	1097182 e8a8eee38227013b14fc36f386401c34ac30544b	no	6

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Information:					
4	Foreign Reference	WO2004008336A1.pdf	4292096	no	50
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Information:					
5	Foreign Reference	WO2004052033A1.pdf	802689	no	25
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7	Foreign Reference	KR2003088154_EngTrans.pdf	1549213	no	16
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Warnings:					
Information:					
18	Non Patent Literature	TECH_RECIPES_Send_SMS_Text_Messages_From_AIM.pdf	506916	no	2
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27	Non Patent Literature	WIKI_Instant_Messaging_inGERMAN.pdf	244528	no	3
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Warnings:					
Information:					
Total Files Size (in bytes):			129230521		
<p>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.</p> <p><u>New Applications Under 35 U.S.C. 111</u> 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.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> 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.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> 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.</p>					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8

CONFIRMATION NO. 4546

POA ACCEPTANCE LETTER

3624

Volpe Koenig

30 SOUTH 17TH STREET, 18TH FLOOR
PHILADELPHIA, PA 19103



OC000000120491747

Date Mailed: 10/09/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/06/2020.

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.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/nguyen/

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	16/714,113
Filing Date	December 13, 2019
First Named Inventor	Graham Merrett
Title	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
Art Unit	2400
Examiner Name	William R Korzuch
Attorney Docket Number	RMT-PT001.8

SIGNATURE of Applicant or Patent Practitioner

Signature	/Brian P. Gordaychik/	Date (Optional)	October 6, 2020
Name	Brian P. Gordaychik	Registration Number	62,179
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)	REMBRANDT MESSAGING TECHNOLOGIES II, LP		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. 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 3 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.

Doc Code: PA..

Document Description: Power of Attorney

PTO/AIA/82B (07-13)

Approved for use through 03/31/2021, OMB 0651-8036

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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POWER OF ATTORNEY BY APPLICANTI hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

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03624

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I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

REMBRANDT MESSAGING TECHNOLOGIES II, LP.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

9/15/2020

Name

Daniel H. Golub, Secretary

Title

REMBRANDT MESSAGING TECHNOLOGIES II, LP. by its General Partner, REMBRANDT VIRGINIA MANAGEMENT, LLC

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.321, 1.32, and 1.33. 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 5 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.

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Electronic Acknowledgement Receipt	
EFS ID:	40770632
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Shaylynn McNally
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	06-OCT-2020
Filing Date:	13-DEC-2019
Time Stamp:	14:56:07
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	Power of Attorney	RMT-PT001_8-Power-of-Attorney-efs.pdf	225597 09f00bc15986e13451437d51c086ae24be860174	no	2
Warnings:					

Information:	
Total Files Size (in bytes):	225597
<p>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.</p> <p><u>New Applications Under 35 U.S.C. 111</u> 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.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> 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.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> 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.</p>	

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

REMBRANDT MESSAGING

TECHNOLOGIES II, LP

Application No.: 16/714,113

Confirmation No.: 4546

Filed: December 13, 2019

For: MESSAGING SERVICES IN A
WIRELESS COMMUNICATIONS NETWORK

Group: 2461

Examiner: Hut Duy Vu

Our File: RMT-PT001.8

Date: July 9, 2020

PRELIMINARY AMENDMENT

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

Sir:

Prior examination and the calculation of fees, please amend the application
without prejudice or disclaimer as follows:

6344931-1
6344931-1

IN THE CLAIMS

Amendments to the Claims:

This listing of the claims will replace all prior versions of the claims in the application:

1-25. (Cancelled)

26. (New) A method comprising:

receiving a first message, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a short message service (SMS) format;

subscribing, by the first mobile wireless device, to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station;

retrieving, by the first mobile wireless device, information corresponding to at least one mobile phone number of the second mobile wireless device;

transmitting, by the first mobile wireless device, after the subscribing, a request including at least the information corresponding to the at least one mobile phone number of the second mobile wireless device, to determine whether the mobile wireless device corresponds to a subscriber of the service;

receiving, by the first mobile wireless device, a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the

service; and

formatting a second message in accordance with a message format of the service, based at least in part on the subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

27. (New) The method of claim 26, further comprising:

formatting the second message for transmission over a wireless personal area network (WPAN).

28. (New) The method of claim 26, wherein the second message is formatted for transmission over a wireless local area network (WLAN).

29. (New) The method of claim 26, further comprising:

transmitting, after a change of the first mobile wireless device to a new handset, information indicating that subscribers of the service should no longer be formatting messages of the service for the first mobile wireless device.

30. (New) The method of claim 26, wherein the formatting the second message is further based at least in part upon a status indicating that an undelivered message parameter has not been exceeded.

31. (New) The method of claim 26, further comprising:
receiving, by the first mobile wireless device, in a single interface, the second message and an MMS message.

32. (New) The method claim 26, further comprising:
authenticating a mobile phone number of the first mobile wireless device to the service prior to receiving the response.

33. (New) The method of claim 31, wherein the single interface provides an option to add a voice attachment for subsequent playback by the second mobile wireless device, after the subscribing;

wherein the single interface does not provide an option to add a voice attachment for subsequent playback by the second mobile wireless device, before the subscribing.

34. (New) A method performed by a first mobile wireless device, the method comprising:

receiving a first message, from a second mobile wireless device, wherein the first message is formatted according to a short message service (SMS) format;

subscribing to a service for transmitting and receiving packet switched messages, via the Internet;

retrieving information corresponding to at least one mobile phone number of the second mobile wireless device;

transmitting a request, after the subscribing, including at least the information corresponding to the at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

formatting a second message in accordance with a message format of the service, based at least in part on the subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

35. (New) The method of claim 34, wherein at the time of transmitting the request, the first mobile wireless device does not have in memory a user name or email address associated with the second mobile wireless device.

36. (New) The method of claim 34, wherein the second message is formatted for transmission over a wireless local area network (WLAN).

37. (New) The method of claim 34, wherein the information corresponding to at least one mobile phone number of the second mobile wireless device is retrieved from the first message.

38. (New) The method of claim 34, further comprising:
receiving presence information associated with the second mobile wireless device after the subscribing; and
displaying the presence information associated with the second mobile wireless device.

39. (New) The method of claim 34, further comprising:
receiving an over the air (OTA) configuration message, wherein the OTA

configuration message includes at least one parameter for establishing a server connection.

40. (New) A method comprising:

receiving a first message, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a multimedia message service (MMS) format;

subscribing, by the first mobile wireless device, to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station;

retrieving, by the first mobile wireless device, information corresponding to at least one mobile phone number of the second mobile wireless device;

transmitting, by the first mobile wireless device, after the subscribing, a request including at least the information corresponding to the at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving, by the first mobile wireless device, a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

formatting a second message in accordance with a message format of the service, based at least in part on the subscribing being successful and the response

indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;

wherein the message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

41. (New) The method of claim 40, further comprising:

formatting the second message is for transmission over a wireless personal area network (WPAN).

42. (New) The method of claim 40, further comprising:

retrieving information representative of at least one electronic mail (email) address corresponding to a third mobile wireless device; wherein the third mobile wireless device is a wireless device of a third subscriber of the service.

43 (New) The method of claim 42, further comprising:

transmitting a message to the second mobile wireless device and to the third mobile wireless device, via the service.

44. (New) The method of claim 40, further comprising:

transmitting, by the first mobile wireless device, a short message service (SMS) message for authentication to the service.

45. (New) The method of claim 40, wherein the first mobile wireless device is authenticated to the service via SMS.

46. (New) The method of claim 40, further comprising:
receiving, in a single interface, the second message and an SMS message;
wherein the single interface provides an option to add a voice attachment for subsequent playback by the second mobile wireless device, after the subscribing.

47. (New) The method of claim 40, further comprising:
transmitting, via hypertext transfer protocol, after a change of the first mobile wireless device to a new handset, information indicating that subscribers of the service should no longer be formatting messages of the service for the first mobile wireless device.

48. (New) The method of claim 46, further comprising:
displaying an option to add one or more attachments, based at least in part on the response indicating that the mobile wireless device corresponds to a subscriber of the service.

49. (New) A method performed by a first mobile wireless device, the method comprising:

receiving a first message, from a second mobile wireless device, via a mobile operator base station, wherein the first message is formatted according to a multimedia message service (MMS) format;

subscribing to a service for transmitting and receiving packet switched messages, via the Internet;

retrieving information corresponding to at least one mobile phone number of the second mobile wireless device;

transmitting a request, after the subscribing, including at least the information corresponding to the at least one mobile phone number of the second mobile wireless device, to determine whether the second mobile wireless device corresponds to a subscriber of the service;

receiving a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service; and

formatting a second message in accordance with a message format of the service, based at least in part on the subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service;

wherein the message format of the service is not a short message service

(SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format;

wherein the first message is received prior to the subscribing.

50. (New) The method of claim 49, wherein the second message is formatted for transmission over a wireless local area network (WLAN).

51. (New) The method of claim 49, wherein at the time of transmitting the request, the first mobile wireless device does not have in memory a user name or email address associated with the second mobile wireless device.

52. (New) The method of claim 49, further comprising:
registering a user name or email address with the service.

53. (New) The method of claim 49, further comprising:
receiving an indication that the mobile phone number of the second mobile wireless device is authenticated to the service.

54. (New) The method of claim 49, further comprising:
transmitting, by the first mobile wireless device, an indication that a user of the first mobile wireless device has changed a handset.

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55. (New) The method of claim 49, wherein the subscribing includes transmitting an SMS message for authentication to the service.

REMARKS

Examination is requested based upon the amendments made via this Preliminary amendment. Claims 26-55 are currently pending. Claims 1-25 have been cancelled without prejudice or disclaimer.

Dependent claims 35 and 51 recite that “at the time of transmitting the request, the first mobile wireless device does not have in memory a user name or email address associated with the second mobile wireless device.” Support for this claim element may be found on page 21 which recites in relevant part that a “user's mobile phone number is the default identifier.”

It should be noted that while the Specification clearly contemplates the use of a user's phone number as a default identifier, the Specification also supports the registration of an email address and user name which may be used for addressing message recipients. See page 18 which recites “[i]f the destination address is a shortcode, steps 320 and 330 in FIG. 5 are repeated for each phone number, email address and user name tag represented by the shortcode.”

The user name of claims 35 and 51 refers to an identifier which may be used to uniquely identify subscribers of a messaging service.

Early consideration and allowance of all pending claims is respectfully requested.

Applicant: REMBRANDT MESSAGING TECHNOLOGIES II, LP
Application No.: 16/714,113

Respectfully submitted,

Rembrandt Messaging Technologies
II, LP

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Facsimile: (215) 568-6499

BPG/sem
Enclosure

Electronic Patent Application Fee Transmittal				
Application Number:		16714113		
Filing Date:		13-Dec-2019		
Title of Invention:		MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
First Named Inventor/Applicant Name:		Graham Merrett		
Filer:		Brian Paul Gordaychik/Shaylynn McNally		
Attorney Docket Number:		RMT-PT001.8		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	5	100	500
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	460	460
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt	
EFS ID:	39951711
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Shaylynn McNally
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	09-JUL-2020
Filing Date:	13-DEC-2019
Time Stamp:	15:35:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$960
RAM confirmation Number	E202079F38153797
Deposit Account	220493
Authorized User	Shaylynn McNally
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges) 37 CFR 1.20 (Post Issuance fees)	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.17 (Patent application and reexamination processing fees)					
37 CFR 1.16 (National application filing, search, and examination fees)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		RMT-PT001_8- Preliminary_Amendment_efs. PDF	98643	yes	19
			43ecdddefbe51186b82c53022c633829d83fc5d81		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Specification		2	6	
	Claims		7	17	
	Applicant Arguments/Remarks Made in an Amendment		18	19	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32368	no	2
			cd4bb853717a5e5cf20d730fcc7cfd97be080587		
Warnings:					
Information:					
Total Files Size (in bytes):			131011		

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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.

IN THE SPECIFICATION

Please amend the Summary at page 2, line 22 of the Specification as filed on December 13, 2019 as shown below.

~~The disclosure of this application includes a wireless device and a corresponding computer readable medium for providing a messaging service. The wireless device may be capable of sending messages via a packet switched base station in a first mode, for example, via wireless local area network (WLAN) base station. Alternatively, the wireless device may be capable of sending messages via a short message service (SMS) base station that is independent of the packet switched base station, in a second mode. The wireless device may include a message client that receives information associated with a destination address of a wireless device of a recipient. The destination address may be a mobile phone number. The message client may be capable of determining a delivery mode for sending an outgoing message to the destination address. The wireless device may include a WLAN transceiver. The wireless device may determine whether the wireless device of the recipient corresponds to a subscriber of a service for receiving the outgoing message via a packet switched bearer by sending a request via the WLAN transceiver and the packet switched WLAN base station to a server. The WLAN transceiver may receive a response from the server via the packet switched WLAN base station. The message client may determine whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing~~

~~message via a packet switched bearer. If the message client determines that the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the WLAN transceiver may send the outgoing message to the wireless device of the recipient using the destination address via the packet switched WLAN base station. The wireless device also includes a cellular transmitter. If the message client determines that the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the wireless device may send the outgoing message using the cellular transmitter to the wireless device of the recipient using the destination address via the SMS base station.~~

A method may comprise receiving a first message formatted according to a short message service (SMS) format, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station. The first mobile wireless device may subscribe to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station. The method may further comprise retrieving, by the first mobile wireless device, information corresponding to at least one mobile phone number of the second mobile wireless device and transmitting, by the first mobile wireless device, after the subscribing, a request including at least the information corresponding to the at least one mobile phone number of the second mobile wireless device, to determine whether the mobile wireless device corresponds to a subscriber of the service. The first mobile

wireless device may receive a response to the request indicating that the second mobile wireless device corresponds to a subscriber of the service. The method may further comprise formatting a second message in accordance with a message format of the service, based at least in part on the subscribing being successful and the response indicating that the mobile phone number of the second mobile wireless device corresponds to a subscriber of the service. The message format of the service is not a short message service (SMS) message format, a multimedia message service (MMS) message format or an enhanced message service (EMS) message format. The first message is received prior to the subscribing.

Please amend the Abstract as filed on December 13, 2019 as shown below.

~~A wireless device for providing a message service is disclosed, along with a computer readable medium. The wireless device may be capable of sending messages via a packet switched WLAN base station in a first mode, or via an SMS base station that is independent of the packet switched base station, in a second mode. A message client on the wireless device determines whether a recipient's wireless device corresponds to a subscriber of a service for receiving the outgoing message via a packet switched bearer. The wireless device sends, via a WLAN transceiver, if the recipient's wireless device corresponds to a subscriber of the service, the outgoing message to the recipient's wireless device in the first mode. Alternatively, if the recipient's wireless device does not correspond to a subscriber of the service, the outgoing message is sent by a cellular transmitter via the SMS base station in the second mode.~~

A method may comprise receiving a first message formatted according to an SMS format, by a first mobile wireless device from a second mobile wireless device, via a mobile operator base station. The first mobile wireless device may subscribe to a service for transmitting and receiving packet switched messages, via the Internet and the mobile operator base station. The method may further comprise retrieving, by the first mobile wireless device, information corresponding to at least one mobile phone number of the second mobile wireless device and transmitting, by the first

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Application No.: 16/714,113

mobile wireless device, after the subscribing, a request including at least the information corresponding to the at least one mobile phone number of the second mobile wireless device, to determine whether the mobile wireless device corresponds to a subscriber of the service.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/714,113		Filing Date 12/13/2019		☐ To be Mailed		
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO										
APPLICATION AS FILED - PART I										
		(Column 1)	(Column 2)							
FOR		NUMBER FILED	NUMBER EXTRA	RATE (\$)		FEE (\$)				
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A	N/A						
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A	N/A						
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A	N/A						
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*	x \$100 =						
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*	x \$460 =						
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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						
APPLICATION AS AMENDED - PART II										
		(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	07/09/2020	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 30	Minus	** 25	= 5	x \$100 =		500		
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1	x \$460 =		460		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
					TOTAL ADD'L FEE		960			
AMENDMENT		(Column 1)	(Column 2)	(Column 3)						
		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =				
	☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
					TOTAL ADD'L FEE					
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.					LIE					
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".					/BRENDA V HARRISON/					
*** 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.										

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Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16714113
	Filing Date	2019-12-13
	First Named Inventor	Graham Merrett
	Art Unit	2461
	Examiner Name	Huy Duy Vu
	Attorney Docket Number	RMT-PT001.8

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6987985	B2	2006-01-17	Purkayastha et al.	
	2	7277724	B2	2007-10-02	Jones et al.	
	3	8060566	B2	2011-11-15	Appleman	
	4	6707472	B1	2004-03-16	Grauman et al.	
	5	6678524	B1	2004-01-13	Hansson et al.	
	6	7085812	B1	2006-08-01	Sherwood	
	7	7171190	B2	2007-01-30	Ye et al.	
	8	7298714	B2	2007-11-20	Foster	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16714113	
	Filing Date		2019-12-13	
	First Named Inventor		Graham Merrett	
	Art Unit		2461	
	Examiner Name		Huy Duy Vu	
	Attorney Docket Number		RMT-PT001.8	

	9	7600031	B2	2009-10-06	Toutonghi	
	10	7751536	B1	2010-07-06	Abramson et al.	
	11	8412846	B2	2013-04-02	Shao et al.	
	12	5729544	A	1998-03-17	Lev et al.	

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	1	20060018290	A1	2006-01-26	Zhao	
	2	20100131858	A1	2010-05-27	Schultz et al.	
	3	20090305729	A1	2009-12-10	Bennett	
	4	20060167849	A1	2006-07-27	Marcus et al.	
	5	20060056309	A1	2006-03-16	Maanitty	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16714113	
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	Art Unit		2461	
	Examiner Name		Huy Duy Vu	
	Attorney Docket Number		RMT-PT001.8	

	6	20030040300	A1	2003-02-27	Bodic et al.	
	7	20020077131	A1	2002-06-20	Mizell et al.	
	8	20080004051	A1	2008-01-03	Sylvain	
	9	20070197237	A1	2007-08-23	Powell et al.	
	10	20070032251	A1	1998-02-08	Shaheen	

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	1	2006/006753	WO	A1	2006-01-19	SK Telecom Corporation		
	2	2006/014603	WO	A2	2006-02-09	Cingular Wireless II LLC		
	3	2004/061583	WO	A2	2004-07-22	Motorola Inc.		
	4	2005/018257	WO	A1	2005-02-24	Nokia Corporation		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16714113	
	Filing Date		2019-12-13	
	First Named Inventor	Graham Merrett		
	Art Unit	2461		
	Examiner Name	Huy Duy Vu		
	Attorney Docket Number	RMT-PT001.8		

5	20060077401	KR	A	2006-07-05	LG Electronics Inc.	* English abstract and copy of patent in Korean provided.
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	1	LEI ET AL., "Context-Aware Unified Communication", Proceedings of the 2004 IEEE International Conference on Mobile Data Management, pgs. 1-11 (2004).	
	2	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Defendant's Response to the Federal Patent Court – In the Nullity action of Apple Retail Germany GmbH versus Rembrandt Messaging Technologies, LP concerning European patent EP 2 177 072 (60 2008 022 036)", Docket number (FPC): 5 Ni 22/16 (EP), Federal Patent Court, Munich Germany (October 25, 2016).	
	3	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Summons for a hearing – In the proceedings concerning the patent EP 2 177 072", Docket number (FPC): 5 Ni 22/16 (EP), Federal Patent Court, Munich Germany (September 14, 2017).	
	4	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Reply to Grounds of Objection of the Assignee", Docket number (FPC): 5 Ni 22/16 (EP), European Patent: EP 2 177 072, Federal Patent Court, Munich Germany (July 27, 2017).	
	5	APPLE RETAIL GERMANY GMBH V. REMBRANDT MESSAGING TECHNOLOGIES, LP, "Response to the Preliminary Opinion of the Federal Patent Court", Docket number (FPC): 5 Ni 22/16 (EP), In the proceedings concerning the patent EP 2 177 072, Federal Patent Court, Munich Germany (November 13, 2017).	

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16714113
	Filing Date	2019-12-13
	First Named Inventor	Graham Merrett
	Art Unit	2461
	Examiner Name	Huy Duy Vu
	Attorney Docket Number	RMT-PT001.8

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brian P. Gordaychik/	Date (YYYY-MM-DD)	2020-06-15
Name/Print	Brian P. Gordaychik	Registration Number	62,179

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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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Electronic Acknowledgement Receipt	
EFS ID:	39713612
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Carey Kulp
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	15-JUN-2020
Filing Date:	13-DEC-2019
Time Stamp:	10:00:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	RMT-PT001_8-IDS_transmittal-EFS.pdf	60714	no	2
			d07791b1dbceea244b3c6dd2c5657767c613213e		

Warnings:

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2	Information Disclosure Statement (IDS) Form (SB08)	RMT-PT001_8-SB08-EFS.pdf	1036169	no	6
			f5ab8c2d5f3d6c59371de0d8b2004f64a80987d		
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

Graham Merrett

Application No.: 16/714,113

Confirmation No.: 4546

Filed: December 13, 2019

For: MESSAGING SERVICE IN A
WIRELESS COMMUNICATIONS NETWORK

Group: 2461

Examiner: Huy Duy Vu

Our File: RMT-PT001.8

Date: June 15, 2020

INFORMATION DISCLOSURE STATEMENT

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

Further to Applicant's Duty of Disclosure pursuant to 37 C.F.R. §1.56, Applicant wishes to bring to the Examiner's attention the material cited on the enclosed PTO Form SB-08.

This Application is a continuation of U.S. Patent Application No. 15/966,965, filed April 30, 2018, which is a continuation of U.S. Patent Application No. 15/011,000, filed January 29, 2016, which is a continuation of U.S. Patent Application No. 14/307,166, filed June 17, 2014, which is a continuation of U.S. Patent Application No. 13/762,347, filed February 7, 2013, which issued December 23, 2014 as U.S. Patent No. 8,918,127, which is a continuation of U.S. Patent 6318970-1

Applicant: Rembrandt Messaging Technologies II, LP
Application No.: 16/714,113

Application No. 12/452,883, filed July 7, 2010, which issued March 19, 2013 as U.S. Patent No. 8,401,576, which is the U.S. National Stage, under 35 U.S.C. §371, of International Application No. PCT/AU2008/001043, filed July 18, 2008, which claims the benefit of Australian Patent Application No. 2007906230, filed November 13, 2007 and Austratlrian Patent Application No. 2007903979, filed July 24, 2007..

Pursuant to 37 C.F.R. §1.98(d) copies of documents cited in the parent application are not enclosed, but copies will be provided upon request.

It is respectfully requested that the Examiner consider these documents and return an initialed copy of the PTO Form SB-08 indicating consideration of the cited materials.

Respectfully submitted,

Rembrandt Messaging
Technologies II, LP

By /Brian P. Gordaychik/
Brian P. Gordaychik
Registration No. 62,179
(215) 568-6400

Volpe and Koenig, P.C.
United Plaza
30 South 17th Street
Philadelphia, PA 19103

BPG/PCK
Enclosure



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/714,113	12/13/2019	Graham Merrett	RMT-PT001.8

CONFIRMATION NO. 4546

3624

VOLPE AND KOENIG, P.C.
30 SOUTH 17TH STREET, 18TH FLOOR
PHILADELPHIA, PA 19103

PUBLICATION NOTICE



Title:MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK

Publication No.US-2020-0120457-A1

Publication Date:04/16/2020

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The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 16/714,113				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A			N/A	300			
SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A			N/A	660			
EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A			N/A	760			
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	25	minus 20 = *	5			x 100 =	500			
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	2	minus 3 = *				x 460 =	0.00			
APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL		TOTAL	2220			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	x	=		x	=
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
TOTAL ADD'L FEE								TOTAL ADD'L FEE		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	x	=		x	=
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
TOTAL ADD'L FEE								TOTAL ADD'L FEE		
<div style="font-size: x-small;"> * 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 found in the appropriate box in column 1. </div>										



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/714,113	12/13/2019	2642	2220	RMT-PT001.8	25	2

CONFIRMATION NO. 4546

FILING RECEIPT



0000000113782903

3624

VOLPE AND KOENIG, P.C.
30 SOUTH 17TH STREET, 18th Floor
PHILADELPHIA, PA 19103

Date Mailed: 01/09/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

Graham Merrett, Queensland, AUSTRALIA;

Applicant(s)

REMBRANDT MESSAGING TECHNOLOGIES II, LP, Bala CYNWYD, PA;

Assignment For Published Patent Application

REMBRANDT MESSAGING TECHNOLOGIES II, LP, BALA CYNWYD, PA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 15/966,965 04/30/2018
which is a CON of 15/011,000 01/29/2016 ABN
which is a CON of 14/307,166 06/17/2014 ABN
which is a CON of 13/762,347 02/07/2013 PAT 8918127
which is a CON of 12/452,883 07/07/2010 PAT 8401576
which is a 371 of PCT/AU2008/001043 07/18/2008

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

AUSTRALIA 2007903979 07/24/2007 No Access Code Provided

AUSTRALIA 2007906230 11/13/2007 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

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If Required, Foreign Filing License Granted: 01/07/2020

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/714,113**

Projected Publication Date: 04/16/2020

Non-Publication Request: No

Early Publication Request: No

Title

MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK

Preliminary Class

455

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ABSTRACT

A wireless device for providing a message service is disclosed, along with a computer readable medium. The wireless device may be capable of sending messages via a packet switched WLAN base station in a first mode, or via an SMS base station that is independent of the packet switched base station, in a second mode. A message client on the wireless device determines whether a recipient's wireless device corresponds to a subscriber of a service for receiving the outgoing message via a packet switched bearer. The wireless device sends, via a WLAN transceiver, if the recipient's wireless device corresponds to a subscriber of the service, the outgoing message to the recipient's wireless device in the first mode. Alternatively, if the recipient's wireless device does not correspond to a subscriber of the service, the outgoing message is sent by a cellular transmitter via the SMS base station in the second mode.

CLAIMS:

1. A wireless device capable of sending messages, in a first mode, via a packet switched wireless local area network (WLAN) base station or, alternatively, in a second mode, via a short message service (SMS) base station that is independent of the packet switched WLAN base station, the wireless device comprising:

a message client configured to receive information associated with a destination address of a wireless device of a recipient, the message client capable of determining a delivery mode for sending an outgoing message to the destination address;

a WLAN transceiver configured to:

send a request, via the packet switched WLAN base station, to a server to determine whether the wireless device of the recipient corresponds to a subscriber of a service for receiving the outgoing message via a packet switched bearer; and

to receive a response from the server via the packet switched WLAN base station,

wherein the server is not a component of a cellular core network;

the message client further configured to determine whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer;

if the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the WLAN transceiver further configured to send in the first mode the outgoing message to the wireless device of the recipient via the packet switched WLAN base station; and

a cellular transmitter configured, if the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, to send in the second mode, the outgoing message to the wireless device of the recipient using the destination address via the SMS base station;

wherein the WLAN transceiver is further configured to send the request to the server without the request passing through the SMS base station, and the WLAN

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transceiver is further configured to receive the response from the server without the response passing through the SMS base station.

2. The wireless device of claim 1, wherein the SMS base station is associated with the cellular core network, and the WLAN transceiver is configured to transmit the request to the server via the packet switched WLAN base station without traversing the cellular core network, and the WLAN transceiver is configured to receive the response from the server via the packet switched WLAN base station without traversing the cellular core network associated with the SMS base station.

3. The wireless device of claim 1, wherein the message client is further configured to construct the outgoing message in a first syntax if the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, and to construct the outgoing message in a second syntax if the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, wherein the first syntax is different from the second syntax.

4. The wireless device of claim 1, wherein the destination address is a mobile phone number.

5. The wireless device of claim 1, wherein the message client is further configured to queue the outgoing message for later delivery if the message cannot be delivered to the wireless device of the recipient.

6. The wireless device of claim 1, wherein the WLAN transceiver is further configured to receive a delivery confirmation message from the server if the outgoing message is successfully delivered to the wireless device of the recipient via the packet switched WLAN base station when the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, further comprising:

a display configured to display an indication of the delivery confirmation message.

7. The wireless device of claim 1, further comprising: a display configured to display an indication of whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched

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bearer.

8. The wireless device of claim 1, further comprising:

a display configured to display sent messages and received messages, wherein sent messages are displayed with a first characteristic and received message are displayed with a second different characteristic so as to distinguish the sent messages from the received messages.

9. The wireless device of claim 1, wherein the WLAN transceiver is further configured to receive presence information associated with the wireless device of the recipient if the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, further comprising:

a display configured to display the received presence information associated with the wireless device of the recipient.

10. A non-transitory computer readable storage medium storing a set of instructions for execution by a wireless device capable of sending messages, in a first mode, via a packet switched wireless local area network (WLAN) base station or, alternatively, in a second mode, via a short message service (SMS) base station that is independent of the packet switched WLAN base station, the set of instructions comprising:

a message client code segment for receiving information associated with a destination address associated with a wireless device of a recipient, the message client code segment capable of determining a delivery mode for sending an outgoing message to the destination address;

a second code segment for sending a request to a server, via the packet switched WLAN base station, to determine whether the wireless device of the recipient corresponds to a subscriber of a service for receiving the outgoing message via a packet switched bearer, wherein the server is not a component of a cellular core network;

a third code segment for receiving a response from the server via the packet switched WLAN base station;

a fourth code segment for determining whether the wireless device of the

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recipient corresponds to a subscriber of the service for receiving the outgoing message via the packet switched bearer;

a fifth code segment for sending, in the first mode, if the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the outgoing message to the wireless device of the recipient via the packet switched WLAN base station; and

a sixth code segment for sending, in the second mode, if the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the outgoing message to the wireless device of the recipient using the destination address via the SMS base station.

11. The non-transitory computer readable storage medium of claim 10, wherein the SMS base station is associated with the cellular core network, and the second code segment further includes instructions for sending the request to the server via the packet switched WLAN base station without traversing the cellular core network, and the third code segment further includes instructions for receiving the response from the server via the packet switched WLAN base station without traversing the cellular core network associated with the SMS base station.

12. The non-transitory computer readable storage medium of claim 10, wherein the message client code segment includes instructions for constructing the outgoing message in a first syntax if the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, and for constructing the outgoing message in a second syntax if the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, wherein the first syntax is different from the second syntax.

13. The non-transitory computer readable storage medium of claim 10, wherein the message client code segment includes instructions for selecting at least one type of permissible attachment based on whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer.

14. The non-transitory computer readable storage medium of claim 10,

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wherein the message client code segment includes instructions for denying, when the wireless device of the recipient does not correspond to a subscriber of the service for of receiving the outgoing message via a packet switched bearer, any type of attachment.

15. The non-transitory computer readable storage medium of claim 10, wherein the destination address is a mobile phone number.

16. The non-transitory computer readable storage medium of claim 10, wherein the message client code segment further includes instructions for queuing the outgoing message for later delivery if the message cannot be delivered to the wireless device of the recipient.

17. The non-transitory computer readable storage medium of claim 10, further comprising:

a seventh code segment for receiving a delivery confirmation message from the server if the outgoing message is successfully delivered to the wireless device of the recipient via the packet switched WLAN base station when the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer; and

an eighth code segment for displaying an indication of the delivery confirmation message.

18. The non-transitory computer readable storage medium of claim 10, further comprising:

an ninth code segment for displaying an indication of whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer.

19. The non-transitory computer readable storage medium of claim 10, wherein the message client code segment includes instructions for displaying sent messages and received messages, wherein sent messages are displayed with a first characteristic and received message are displayed with a second different characteristic so as to distinguish the sent messages from the received messages.

20. The non-transitory computer readable storage medium of claim 10, wherein the message client code segment includes instructions for receiving presence information associated with the wireless device of the recipient if the wireless device

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of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer; and

a tenth code segment for displaying the received presence information associated with the wireless device of the recipient.

21. The wireless device of claim 1, wherein the response received from the server via the packet switched WLAN base station includes an indication of whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer.

22. The non-transitory storage medium of claim 10, wherein the response received from the server via the packet switched WLAN base station includes an indication of whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer.

23. The wireless device of claim 1, wherein the message client is further configured to select at least one type of permissible attachment based on whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer.

24. The wireless device of claim 1, wherein the message client is further configured to deny, when the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, any type of attachment.

25. The wireless device of claim 1, further comprising a processor configured to determine whether the wireless device of the recipient is capable of receiving the outgoing message via a packet switched bearer.

CROSS-REFERENCE TO RELATED APPLICATIONS

This Application is a continuation of U.S. Patent Application Serial No. 15/966,965, filed April 30, 2018, which is a continuation of U.S. Patent Application Serial No. 15/011,000, filed January 29, 2016, which is a continuation of U.S. Patent Application Serial No. 14/307,166, filed on June 17, 2014, which is a continuation of U.S. Patent Application Serial No. 13/762,347, filed on February 7, 2013, which issued as U.S. Patent No. 8,918,127 on December 23, 2014, which is a continuation of U.S. Patent Application Serial No. 12/452,883, filed on July 7, 2010, which issued as U.S. Patent No. 8,401,576 on March 19, 2013, which claims priority to PCT Patent Application No. PCT/AU2008/001043, filed July 18, 2008, that claims priority to Australian Patent Application No. 2007903979, filed July 24, 2007, and Australian Patent Application No. 2007906230, filed November 13, 2007, all of which are incorporated herein by reference.

Technical Field

This invention concerns a messaging service in a wireless communications network.

Background Art

Short Messaging Service (SMS) is a technology for sending and receiving short text messages between mobile users. It was first introduced in the Global System for Mobile Communications (GSM) standards in the 1990s but was subsequently included in other wireless standards such as Code Division Multiple Access Systems (CDMA). Although SMS is extremely popular, one of its biggest drawbacks is that an SMS message can only carry a small amount of data due to limitations imposed by the Mobile Application Part (MAP) protocol of SS7. An SMS message can only contain up to 160 8-bit alphanumeric or binary characters and any message longer than 160 characters is usually sent in multiple messages.

A Short Messaging Service Centre (SMSC) is responsible for handling the delivery of SMS messages in a wireless communications network. An SMS message sent by a mobile user is first delivered to the user's network SMSC before being routed to the recipient. If the recipient's network is operated by a different provider or employs a different wireless standards, the message may pass more through more than one SMSC or SMSC gateway before reaching its final destination. Signalling System 7 (SS7) provides the transport mechanism for SMS traffic.

There are several messaging services that provide an extension to SMS. Enhanced Messaging Service (EMS), which uses existing SMS infrastructure, allows up to 255 SMS messages to be packaged as one EMS message having richer content such as animation, pictures, sounds and formatted text. Unlike SMS and EMS, Multimedia Messaging Service (MMS) messages are delivered using a mobile packet data network. MMS was first introduced in 2.5 generation networks such as GPRS, which provides an Internet Protocol (IP) overlay to the existing GSM networks. A multimedia message may contain images, audio clips and videos.

On the other hand, Mobile Instant Messaging (MIM) technology enables mobile devices to engage in real-time, instant messaging via an IP data network. Users need to register a user name tag or "handle" with an instant messaging service provider to send and receive messages. Many current MIM services also require users to maintain a persistent connection with the Internet during a chat session.

Summary

The disclosure of this application includes a wireless device and a corresponding computer readable medium for providing a messaging service. The wireless device may be capable of sending messages via a packet switched base station in a first mode, for example, via wireless local area network (WLAN) base station. Alternatively, the wireless device may be capable of sending messages via a

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short message service (SMS) base station that is independent of the packet switched base station, in a second mode. The wireless device may include a message client that receives information associated with a destination address of a wireless device of a recipient. The destination address may be a mobile phone number. The message client may be capable of determining a delivery mode for sending an outgoing message to the destination address. The wireless device may include a WLAN transceiver. The wireless device may determine whether the wireless device of the recipient corresponds to a subscriber of a service for receiving the outgoing message via a packet switched bearer by sending a request via the WLAN transceiver and the packet switched WLAN base station to a server. The WLAN transceiver may receive a response from the server via the packet switched WLAN base station. The message client may determine whether the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer. If the message client determines that the wireless device of the recipient corresponds to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the WLAN transceiver may send the outgoing message to the wireless device of the recipient using the destination address via the packet switched WLAN base station. The wireless device also includes a cellular transmitter. If the message client determines that the wireless device of the recipient does not correspond to a subscriber of the service for receiving the outgoing message via a packet switched bearer, the wireless device may send the outgoing message using the cellular transmitter to the wireless device of the recipient using the destination address via the SMS base station.

Disclosure Of The Invention

In a first aspect, the invention is a method for providing a messaging service on a wireless device in a wireless communications network; the method comprising the steps of:

Retrieving the destination address of an outgoing message on the device.

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Verifying whether the destination address is capable of receiving the message via a packet-switched bearer.

If verification is affirmative, then automatically sending the message to the destination address via a packet-switched bearer, but otherwise, automatically sending the message to the destination address via an SMS bearer.

Unlike conventional SMS, EMS and MIM clients, the invention combines existing messaging solutions to offer a single interface for sending and receiving both text and multimedia messages. The automatic bearer selection enables the user to have the widest range of messaging options, including text, voice, video, picture, based on knowledge of the status and capability of the recipient's device.

The SMS bearer may be a conventional GSM SS7 signalling channel. The packet-switched bearer may be a HSDPA, WCDMA, CDMA2000, GPRS or similar data bearer. The packet-switched bearer may also supported by other wireless technologies such as Bluetooth, WiFi, WiMax. Further, the packet-switched bearer may be operated by a sender's mobile operator or an independent mobile Internet service provider. Compared with an SMS bearer, a packet-switched data bearer is able to send a message with unlimited size at a higher speed.

The destination address may be a mobile phone number or a numeric "shortcode" or alias representing one or more, or a combination of, phone numbers, email addresses, instant messaging user handles and IP addresses. Therefore, for all users of the messaging service, and unlike conventional MIM clients, the invention utilises a user's mobile phone number as the identifier of the user, and does not require the user to register a user name, tag or handle, thus providing a single number for message sending.

A message client running on the device may programmatically and dynamically construct an outgoing message in the correct syntax given the user's

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preferences and given the dynamic requirements of the message server for a particular service.

The message client may interpret incoming SMS or incoming messages from the message server that are identified in their contents as being requirements for the dynamic construction of a message, when the user views the message.

Alternatively, the message client may interpret incoming SMS or incoming messages from the message server that are identified in their contents as being requirements for the dynamic construction of a message, and store the requirements for the dynamic construction of a message, such that they may be invoked by selecting a dynamic menu option.

The requirements may be set out in a structured format using XML such that the message client shall, when a user opens a message containing requirements for the dynamic construction of a message, or when a user selects a dynamic menu:

Present the user with options to choose from; and

For each option, know the intended destination and bearer of the message; and

Prompt the user for input or to select a file to be sent with the constructed message; and

Construct a message of the correct syntax based on the user's choices and input.

The method may further comprise the step of connecting to a message server before verifying the destination address. If connection to the message server is not available, the invention may support several configuration methods in order to configure the mobile device so as to be able to establish a connection to the message server.

Firstly, the method may comprise the step of retrieving connection parameters and displaying the retrieved parameters on the mobile device if connection to a message server is not available. A mobile user may then use the retrieved parameters to manually configure the handset before retrying to connect to the message server.

Besides manual configuration, the invention may support manual and automatic over-the-air (OTA) programming. The method may further comprise the step of displaying a link for a sender to request an OTA configuration message if connection to the message server is not available. For example, a user may then access a website to request a configuration message to be sent to the user's mobile device.

The method may further comprise the step of retrieving connection parameters, automatically creating an OTA configuration message based on the retrieved parameters and sending the generated configuration message from the mobile device to the same mobile device. Using such automatic OTA configuration, users do not have to manually change the settings on their mobile device to establish a connection with the message server. The OTA configuration message may be a binary SMS.

The step of verifying the destination address may involve sending an address verification request to a message server and then receiving a notification from the message server specifying whether the destination address is capable of receiving the message via a packet-switched bearer.

The destination address may be capable of receiving the message via a packet-switched bearer if the address is on a subscriber address list. The subscriber address list may be a list of destination addresses that subscribes to the messaging service. The subscriber address list may be maintained by the message server.

The destination address may be capable of receiving the message using a packet-switched bearer if the address is on the subscriber address list and has an active status. For example, the recipient is inactive if the length of the message queue of the destination address exceeds a maximum allowable length.

The method may further comprise the step of automatically providing options to add one or more attachments to the outgoing message before sending the message if a packet-switched bearer is selected. The attachment may be a text, voice, video or picture file. On the other hand, an outgoing message that is sent using an SMS bearer can only be either an SMS or EMS message and not have attachments.

Using the invention, a sender may optimally add attachments to an outgoing message depending on the capability of a recipient's mobile device. For example, a user may attach a voice or video message a text message if the recipient is able to receive and play the attachment. Further, the invention uses a push model to deliver a voicemail to a mobile user without the need of retrieval.

The method may further comprise the step of formatting the outgoing message according to the mode of delivery before sending the message. If the message is sent via a packet-switched data bearer, the message may be formatted as an XML ASCII string.

The method may further comprise the step of appending a system message to the outgoing message if an SMS bearer is selected.

The system message may comprise an invitation to add the destination address to a subscriber address list if the destination address is not on the list. Otherwise, if the destination address is on the subscriber address list but has an inactive status, the system message may comprise an invitation to retrieve messages in the message queue of the destination address.

By sending an invitation to non-subscribers to add their destination address to the subscriber address list, new users may subscribe to the messaging service without having to actively source how to obtain the service. This viral, peer-to-peer invitation method also does not require central monitoring nor generate additional traffic since an invitation is appended to an outgoing message.

The method may further comprise the step of notifying the recipient, if the recipient is on the subscriber list, when either a message has been received (if the recipient is connected to the message server), or when a message is queued but not yet delivered (if the recipient is not connected to the message server). The notification method may be a single ring to the recipient's mobile device. A notification message may also be sent to the sender of the message.

The method may further comprise queuing an outgoing message for later delivery if the message is undelivered. For example, a message cannot be delivered if the destination address is on the subscriber address list, but the recipient is not, at the time of sending, connected to the message server by a packet-switched bearer.

In another aspect, the invention is a mobile device programmed to perform the method. In a further aspect, the invention is a software program to implement the method.

Brief Description of the Drawings

An example of the invention will now be described with reference to the accompanying drawings, in which:

FIG. 1 is a diagram of a messaging system.

FIG. 2A is the user interface on a sender's mobile device.

FIG. 2B is the user interface on a recipient's mobile device.

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FIG. 3 is a flowchart of the routine performed by a message client.

FIG. 4 is a flowchart of the routine performed by a message client to establish a connection with a message server.

FIG. 5 is a flowchart of the address verification routine performed by a message server.

FIG. 6A is a diagram of the architecture of a message client.

FIG. 6B is an exemplary message format.

FIG. 6C is a diagram of a TCP/IP protocol model used by a message client.

FIG. 7 is the user interface on a sender's mobile device during a chat session.

Best Modes of the Invention

Referring first to FIG. 1, the messaging system 100 comprises a message server 170 in communication with network users 110, 120 and 125 via the Internet 160 and base stations 130, 150, 180 and 190. Base stations 130 and 150 are typical based stations in a GSM, CDMA, 3G, 3.5G or similar network that supports a HSDPA, WCDMA, CDMA2000, GPRS or similar data bearer and are connected to an SMSC via Core Network 140.

Network users 110, 120 and 125 may be part of a wireless personal area network (WPAN), a wireless local area network (WLAN) or a wireless wide area network (WWAN). Base stations 180 and 190 are wireless Internet base stations operated by an independent wireless service provider. For example, the users may access the wireless Internet using technologies such as Bluetooth, ZigBee or mesh networking in a WPAN; WiFi in a WLAN or WiMax in a WWAN.

In this example it is assumed that a first user 110 ("the sender") is sending a message to a second user 120 ("the recipient"). The message contains the phrase "Hi

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there!" as well as a photo and a voicemail as attachments. Referring now to FIG. 2A, a message client 114 runs on the mobile device 112 and is responsible for choosing the mode of delivery of an outgoing message.

To use the invention, the message client 114 needs to be activated by the sender 110. However, the message client 114 may be also activated automatically when the handset is switched on if such feature is supported by the handset's operating system. Having activated the message client 114, the sender 110 then selects or enters a destination number. The message client 114 then decides on how the message can be sent.

The recipient 120 may be on a network operated by the same or a different service provider. The sender and the recipient are each associated with an address. The destination address is either a mobile phone number or a numeric "shortcode" or "channel", which is an alias representing one or more phone number, email address or instant message handle. For example, certain number ranges may be controlled by the messaging server (e.g. 1 800 xxxxxx), some under users' control as destinations as aliases for a group of numbers and addresses (e.g. 1 801 xxxxxx), and some for accessing content services (e.g. 1 900 xxxxxx). Shortcodes are unique and private to a user, hence the same numeric shortcode may be used by multiple users.

Shortcodes are created by users and maintained by message server 170. For example, a user creates a shortcode by sending a message with the following content to the message server 170:

Add channel20 andrew@messmo.com,
robert@yahoo.com, 0423789080, 98765432@jabber.org.

The shortcode 20 is an alias for a group comprising two email addresses, one mobile number and an instant message handle. For example, to send a message to the shortcode created, the destination address will be set to 1801 20.

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The syntax of messages in the example above is strict, however the user is not limited in their use of services by limits in their own knowledge of the message syntax.

The message client 114 is able to programmatically and dynamically construct an outgoing message in the correct syntax given the user's preferences and given the dynamic requirements of the message server 170 for a particular service.

The message client 114 interprets incoming SMS or incoming messages from the message server 170 that are identified in their contents as being requirements for the dynamic construction of a message. The interpretation can occur either when the user views the message (for example a message titled "Click to create a Channel"), and/or the message client may interpret the incoming SMS, or incoming messages from the message server 170, and store the requirements for the dynamic construction of a message, such that they may be invoked by selecting a dynamic menu option.

The requirements are set out in a structured format using XML such that the message client 114 shall, either when a user opens a message containing requirements for the dynamic construction of a message, or selects a dynamic menu:

- Present the user with options to choose from; and

- For each option, know the intended destination and bearer of the message; and

- Prompt the user for input or to select a file to be sent with the constructed message; and

- Construct a message of the correct syntax based on the user's choices and input. If the message contained requirements for the dynamic construction of a message, where those requirements are by way of example set out as:

```

<MessageConstructorRequirements>
  <MCTitle>Shortcode</ MCTitle >
  <Option>
    <OptionTitle>Subscribe</ OptionTitle>
    <Bearer>SMS</Bearer>
    <Destination>1800</Destination>
    <OutputToken  DataType='String' InputMethod='Constant'
Count='1'>Add Channel</OutputToken>
    <OutputToken  DataType='Number' InputMethod='Input'
Count='1'>Channel</OutputToken>
    <OutputToken  DataType='String' InputMethod='Input'
Count='4'>Destination</OutputToken>
  </Option>
</I
MessageConstructorRequirem
ents >

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The message client 114 would present the user with a message titled 'Shortcode', where the message client would:

- Present the user with the option 'Subscribe'; and if this option is selected
- Prompt the user for one shortcode eg. User inputs 20; and
- Prompt the user for four destinations eg. User inputs andrew@messmo.com, robert@yahoo.com, 0423789080, 98765432@jabber.org; and
- Construct a message eg. 'Add Channel20 andrew@messmo.com, robert@yahoo.com, 0423789080, 98765432@jabber.org' to be sent to 1900 via SMS bearer.

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Thus enabling the benefit to the user of the use of a service where they otherwise may have been unfamiliar with, or unwilling to input, the strict syntax of the message required for the service.

When a message is sent to a shortcode, the message can be sent either as a conventional SMS or EMS message using a conventional SMS bearer or a packet-switched data bearer. If a SMS bearer is used, the message will be sent via a GSM or GPRS signalling channel to Core Network 140, SMSC 145, base station 150 before finally reaching recipient 120. If an SMS bearer is used the attachments such as the photo and voicemail will not be sent.

If a packet-switched data bearer is used, the message client has a choice of sending the message using a packet-switched bearer supported by the mobile operator's or a third party's network. For example, in a GSM system with General Packet Radio Service (GPRS) overlay, an SMS bearer may be an SS7 signalling channel while a packet-switched data bearer may be a shared transmission channel that combines multiple timeslots in a GSM TDMA frame. The packet-switched data bearer may also be a Bluetooth, WiFi, WiMax or any other WPAN, WLAN, or WWAN wireless data transfer protocol.

Referring now to FIG. 3, the client 114 first checks whether the sender 110 is connected to the Internet 160 and message server 170; see step 205. As shown in FIG. 1, the sender 110 may be connected to the message server 170 via a mobile operator's data network (base stations 130) or a network provided by an independent mobile Internet service provider (base station 180).

The step of connecting to the message server 170 (step 205) will now be explained with reference to FIG. 4. The client 117 first checks whether connection to the message server 170 is available. If the connection is not available, the client 117 displays options for the sender 110 to configure the handset such that connection to

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the message server 170 can be established; see step 265.

The client 117 supports three configuration methods. Firstly, manual configuration may be used; see steps 270, 272 and 274. In this case, the client 117 first retrieves information specific to the handset and the mobile Internet service provider. As mentioned, the mobile Internet service provider may be a mobile operator or an independent provider. The client 117 then displays the retrieved information such that the sender 110 can configure the handset manually; step 274.

Alternatively, if the sender's mobile device is capable of receiving and processing OTA messages, the client 117 may provide a link to a website that solicits OTA configuration requests; steps 280 and 282. The website may be operated by the message server 170 or a third party and accessed via a PC, WAP connection from the sender's mobile device or other means. Upon receiving the OTA configuration message, the sender's mobile device will ask the sender to accept the changes to its mobile Internet access settings according to the configuration message; step 298. If the changes are accepted, the client 117 then retries to connect to the message server 170; step 295.

Besides manual configuration and manual OTA configuration requests, the client 117 is capable of performing self-configuration; see steps 290, 292 and 294. Assuming that the client 117 is aware of the specific parameters necessary to configure the sender's mobile device to access the mobile Internet, the client 117 first creates an OTA configuration message based on the parameters. The client 117 then sends the OTA message to the sender's handset (same device). For example, the message may be sent as an OTA binary SMS. Upon receiving the OTA configuration message, the sender's mobile device asks the sender to accept the changes to its mobile Internet access settings according to the configuration message; step 298. Similarly, the client 117 then retries to connect to the message server 170 when under the new settings; step 295.

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The above configuration steps may be repeated until either the message server 170 is connected or the user has abandoned the configuration in step 265. In this case, that is the connection to the message server 170 is not available, the client 117 will select an SMS bearer as the mode of delivering the outgoing message and proceeds to format the message in step 240. Note that besides configuring the mobile Internet access settings of a mobile device, the client 117 may generate OTA messages to configure other settings such as email, WAP, MMS and video streaming.

If the sender has access to the message server 170, the client 114 then retrieves from the message without reference to the message server the destination address of the outgoing message 220; see step 210. The client then sends a verification request to the message server 170 via base station 130 or 180 and the Internet 160; step 215.

Upon receiving an address verification request, the message server 170 performs the method shown in FIG. 5. The message server 170 first checks whether the destination address is on a list of subscribing addresses; step 320. If the destination address is not known to the message server 170, the mode of delivery will be set to an SMS bearer; step 350.

If the destination is on the list of subscribing addresses, the message server 170 proceeds to check the status of the recipient, that is whether the destination message queue length has exceeded a predetermined maximum length; 330. If the recipient has a long inactive queue, the message server 170 will notify the message client 114 to send the message using an SMS bearer; see step 350. Otherwise, the mode of delivery is set to a packet-switched bearer; see step 360 in FIG. 5.

Referring to FIG. 3 again, the message client 114 at the sender 110 provides options for format and attachment of the outgoing message based on the mode of delivery; steps 224, 226, 230 and 240. The mode of delivery, using information about the recipient's handset stored in the message server, provides an indication of the capabilities of the recipient's handset and the type of message that can be received by

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the recipient's 120. If the recipient 120 is an active user, the full range of the recipient's capabilities is assumed. However, if the recipient 120 is an inactive or past subscriber, the message server's 170 knowledge of the recipient's capabilities may be outdated if the recipient has changed its handset. The recipient 120 may then be invited to update its information.

The message client 114 then intelligently advises the sender 110 whether the recipient 120 is able to read attachments or non-text messages. For example, if the mode of delivery is a packet-switched bearer, the sender 110 is offered with the "ATTACH" option to add voice, picture or video attachments to the message; see FIG. 2A and steps 224 and 226 in FIG. 3.

If the mode of delivery is an SMS bearer, the "ATTACH" option will be disabled. Further, depending on configurable settings on the sender's mobile device, the client 117 also appends a system message to the outgoing message in step 245. If the destination address is not on the list of subscribing addresses, an invitation to download the client will be added to the outgoing SMS or EMS. For example, the invitation may read:

"Go to www.clientdownload.com to download <name of message client>".

The message client 114 can then be downloaded to the recipient's mobile device 120. Then upon starting the message client, the message client will generate a unique authentication identifier, either randomly or derived from the mobile devices hardware identification or generated by the message server. The message client will then initiate a connection to the message server and communicate the authentication identifier. The message client will in parallel send a SMS containing the authentication identifier to a SMS gateway service. The SMS gateway service then sends the message, including the originating phone number and the body of the message containing the authentication identifier, to the message server via HTTP, SMTP, SMPP or a similar protocol.

Upon receipt of the details of a SMS, the message server will determine the originating phone number of the mobile device from the details of the SMS, and hence add the new address (originating phone number) to the list of subscribing addresses. By matching the authentication identifier, either the message server will send the message client confirmation that the mobile device and user has been authenticated, or the message client will initiate the action and request the same confirmation from the message server. This authentication method allows new users to be authenticated and to subscribe to the messaging service via one SMS without requiring any registration or data entry.

If the destination address is on the list of subscribing addresses but the recipient 120 is inactive, a message to remind the recipient 120 to connect to the message server 170 will be appended to the outgoing SMS or EMS. For example, the system message may read:

"You have 50 unread messages on <name of message client>." Returning to the sending mobile device 110, if the mode of delivery is a packet-switched bearer, the message client manages the delivery of the message similar to a MIM client such as Jabber. An exemplary architecture of the message client is shown in FIG. 6A, where the message client may be a Java 2, Mobile Edition (J2ME) program installed on a mobile device. The formatted message is sent as an XML ASCII string via a TCP/IP socket to the message server or a HTTP post, an example of which is shown in FIG. 6B. The message contains a text phrase "Hi there!" in the body and two attachments. A photo attachment is defined between <photo> and </photo> and a voicemail is defined between <voicemail> and </voicemail>.

FIG. 6C illustrates the five-layer TCP/IP protocol model used by the message client. GPRS, 3G, 3.5G or other wireless protocols such as Bluetooth, WiFi and Wimax are used in the data link layer to deliver the message from the mobile device to the wireless communications network, IP is used in the network layer to deliver

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the packet from the sender to the recipient, UDP and TCP form the transport layer and HTTP, WAP and XML are used in the application and presentation layers.

FIG. 2B shows the user interface of the recipient 120 when a message is received. The recipient 120 may receive a notification when the message has been successfully received as the recipient while being connected to the messaging server, may be using another function of the mobile device. The notification may be a single ring of the recipient's mobile device.

If the destination address is a shortcode, steps 320 and 330 in FIG. 5 are repeated for each phone number, email address and user name tag represented by the shortcode. If not all addresses in the shortcode are capable of receiving the message via a packet-switched data bearer, the reply by message server 170 may be an array of binary answers. For example, if a shortcode represents three addresses and only the first has installed the message client, the mode of delivery is set to $m_1m_2m_3=100$, where 1 represents a packet-switched bearer and 0 represents an SMS bearer.

A delivery confirmation message may also be sent to the sender 110 by the message 170 if the message is sent using a packet-switched bearer. The message client 114 maintains a copy of recent messages sent by a user, for example, for a limited time. If a message is unsuccessfully delivered, it will be queued for later delivery. For example, a message cannot be delivered if the recipient 120 is not connected to the message server 170 when the message is sent. In this case the recipient 120 may receive a notification that a message is queued for later delivery. The notification may be a single ring of the recipient's mobile device, generated by the message server 170, but using a different originating number from that used for the notification when the message has been delivered, so as to enable the user to optionally utilize mobile device features such as distinct ringtones mapped to sending numbers.

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A sender 110 and a recipient 120 may send and receive multiple messages during a chat session. The user interface may be similar to that of a desktop instant messaging program. For example, an exemplary user interface of sender 110 is shown in FIG. 7. A left arrow indicates a message sent by the sender while a right arrow represents a received message. Depending on configurable user preferences, the recipient 120 with phone number 1234 may choose to have his or her presence known to the sender 110; see 116 in FIG. 7. Using the presence information, the sender 110 may then stop sending new messages to the recipient 120 if the latter has gone offline.

Besides performing address verification, the message server 170 also maintains user authentication. Authentication is simple and does not require a user to create a user name tag like existing MIM servers. Instead, the user's mobile phone number is the default identifier. Authentication adds the mobile phone number to the subscriber address list.

Referring to FIG. 1 again, the message server 170 receives each message that is sent using a packet switched bearer. Each message is in an XML format, and the message server parses the message to determine the destination address.

The message server 170 is also in communication with third-party content providers 175 over the Internet 180. When the message server identifies a destination address corresponding to a third party content provider, it automatically sends the message to the third party. The third party may, for example depending on the presence of keywords, send additional information related to the keywords to the sender 110. However, a user may disable this feature.

For example, if the message contains the name of a certain brand, BUYME, information concerning where to buy the product or its latest promotion will be retrieved from the third party content provider in communication with the message server. In this case, depending on the capability of the recipient's mobile device, the

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information may be sent as a conventional SMS or

as a text message via a packet-switched bearer, with optionally one or more attachments.

User privacy may be protected by not revealing a user's phone number to a third party without the consent of the user. For example, a user may send a query to a third party content provider 175 to ask about the weather forecast in a particular location via the message server 170. To hide a user's identity, the message server may dynamically create a random number that maps to the user's actual mobile number and passes the query to the third party content provider 175. Further, this mapping may be dynamic, not static, to ensure that the third party is not able to determine information about the general behavior of the users.

Similar to user-to-user messages, the type of advertising and marketing message that is sent to a user also depends on the capabilities of the user's handset. Therefore since the message server is aware of the capabilities of user's handsets, as user handsets are upgraded, the message server 170 is able to target those users with enhanced, multimedia message content.

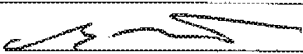
It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. For instance, the current application outlines how a user, when using a message client, will be prompted to use an SMS, if the recipient is not a user of the message service. The existing context of this is that the user is initiating the message. The functionality can be extended to the situation where a message is sent using the message client with the goal of prompting the user to send a response SMS. This can be useful in generating SMS traffic from third parties by sending one message that prompted the recipients to select one or more voting buttons each of which causes an SMS to be sent to a specific premium number.

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Conversely the same concept works well for a community of users of a message client who do not wish to use premium numbers. The entire community can be polled. Each receives an indication to select a voting button, and the selections each cause a message with predetermined text to be sent to a predetermined recipient. This minimizes the event of false responses that cannot be counted.

The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
 APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	MESSAGING SERVICES IN A WIRELESS COMMUNICATIONS NETWORK
<p>As the below named inventor, I hereby declare that:</p> <p>This declaration is directed to: ☐ The attached application, or</p> <p>☒ United States application or PCT international application number <u>14/307,166</u></p> <p>filed on <u>June 17, 2014</u></p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.</p> <p style="text-align: center;">WARNING:</p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.</p>	
<p>LEGAL NAME OF INVENTOR</p> <p>Inventor: <u>Graham Merrett</u> Date (Optional): _____</p> <p>Signature: </p>	
<p>Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.</p>	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute 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.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

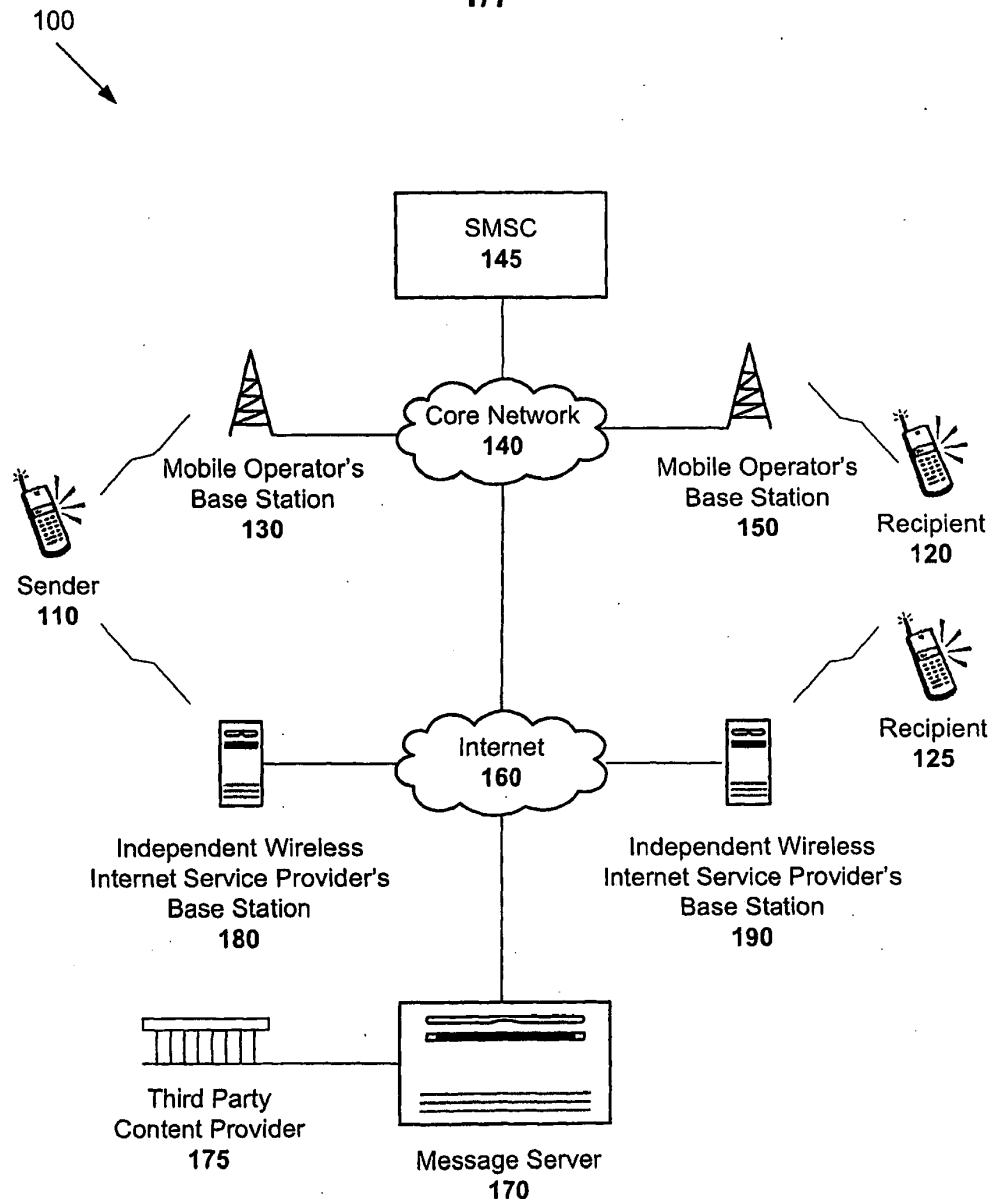


FIG. 1

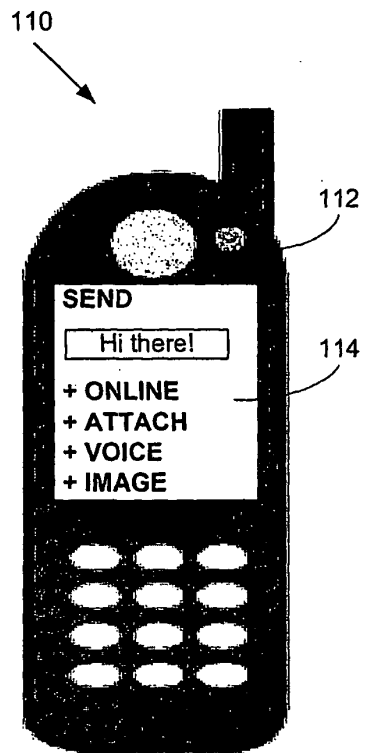


FIG. 2A

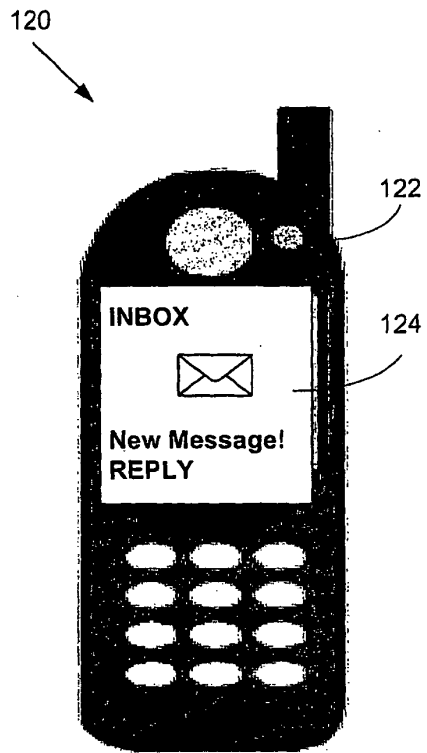


FIG. 2B

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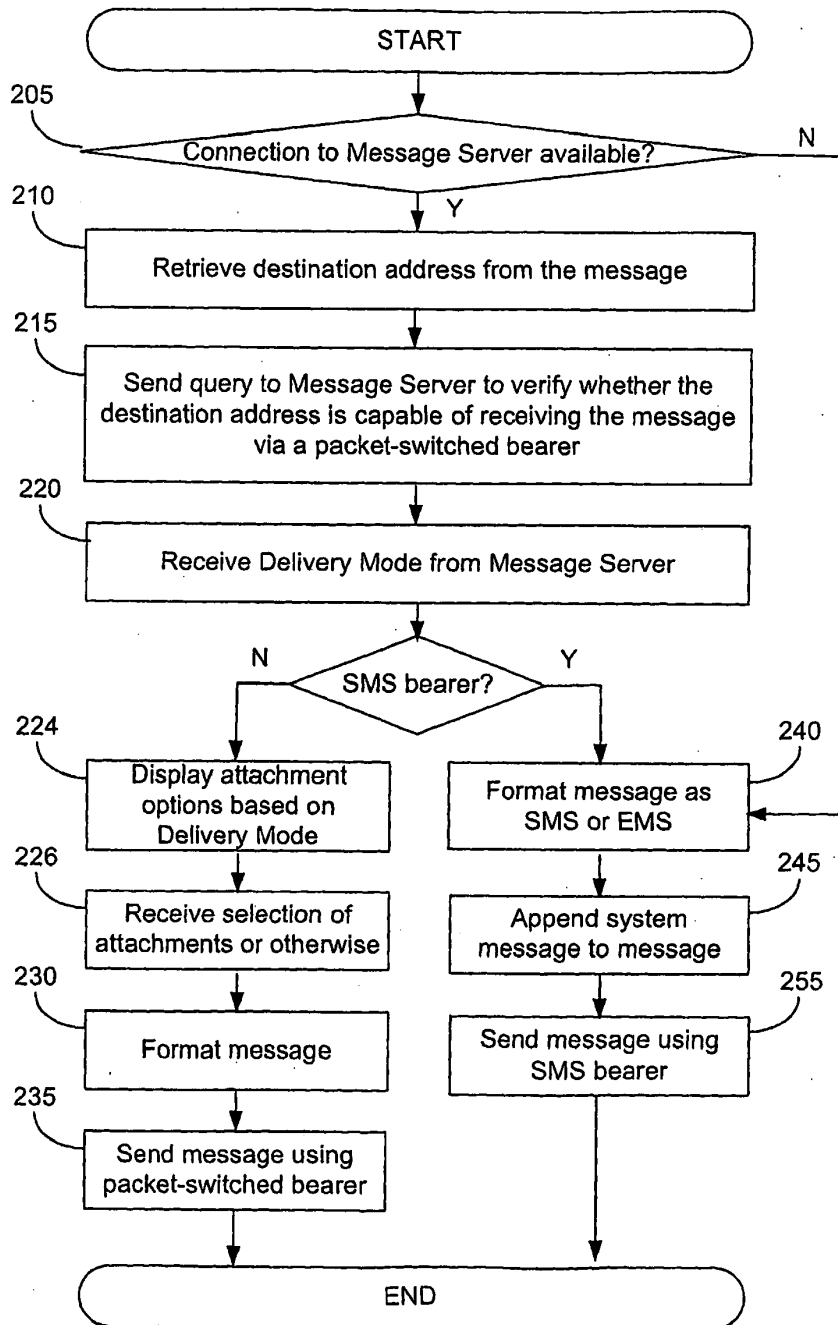


FIG. 3

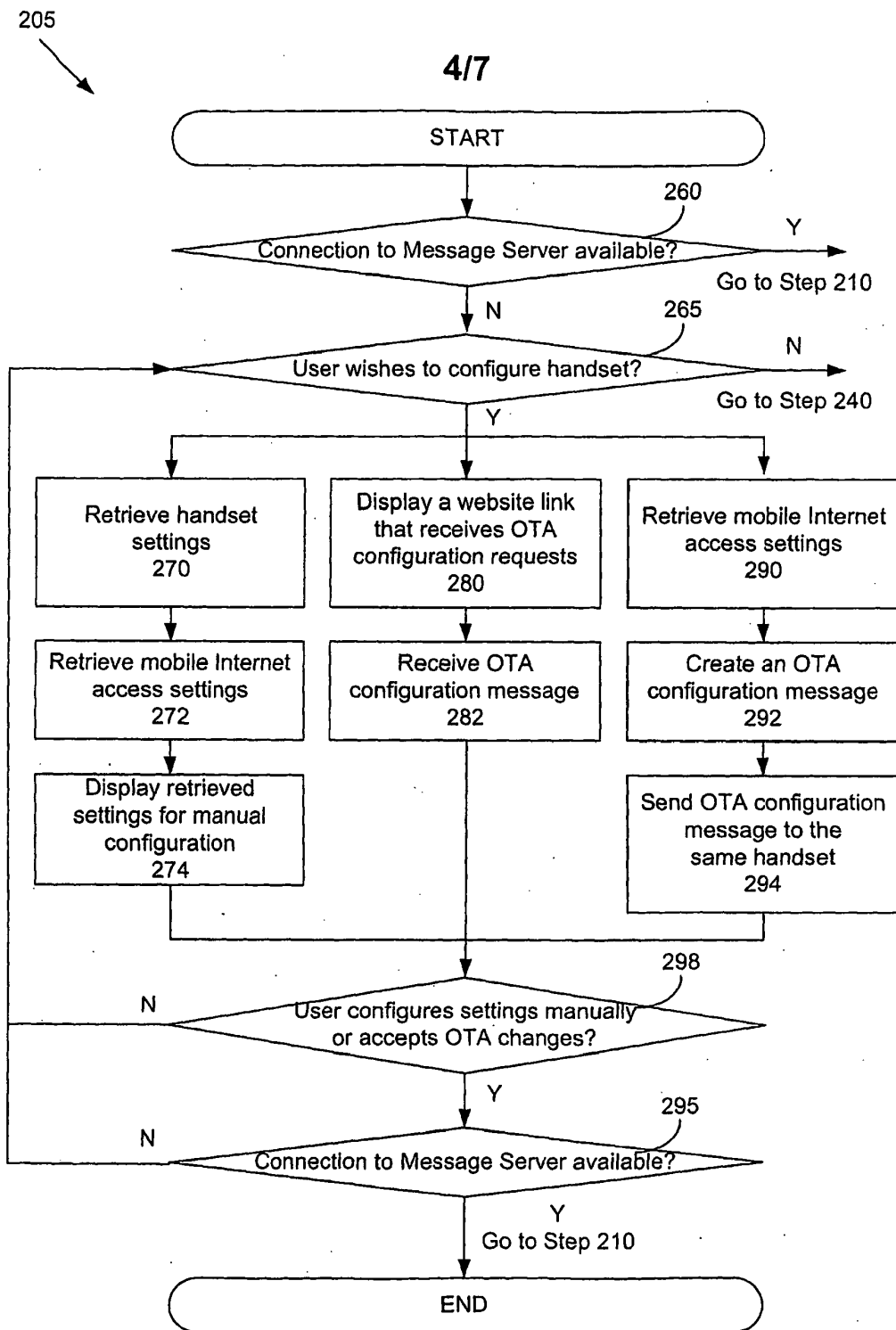


FIG. 4

5/7

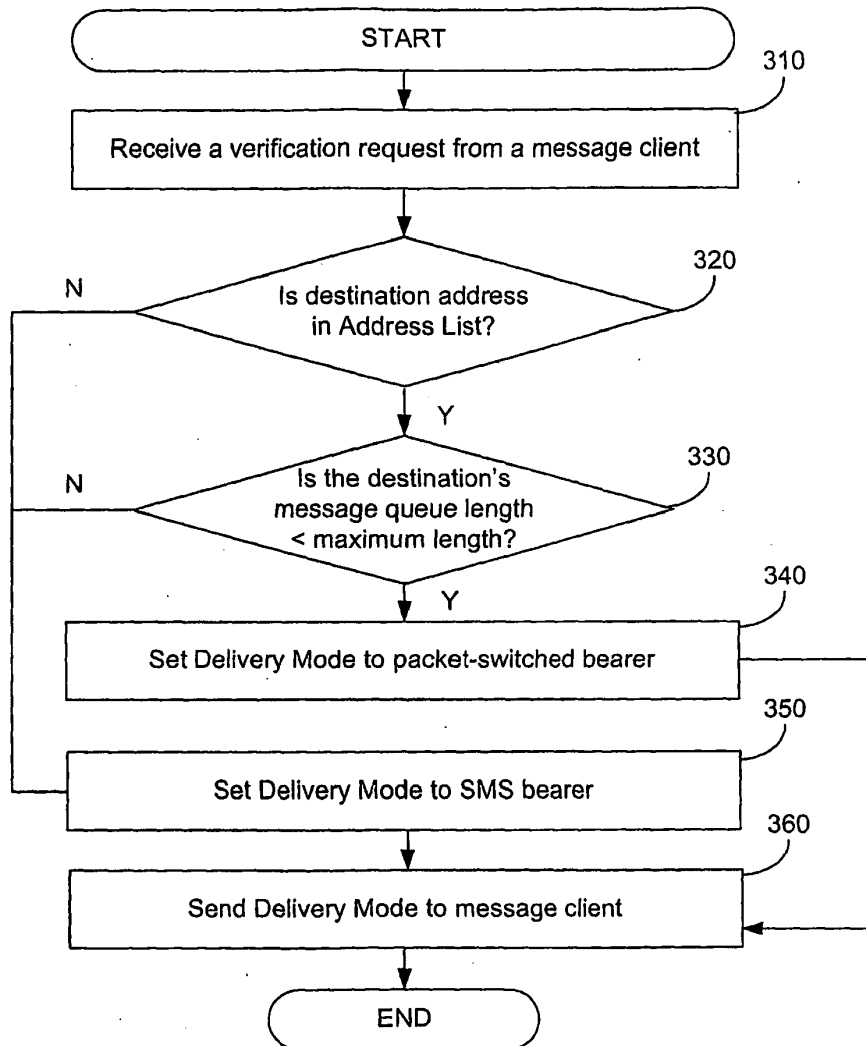


FIG. 5

FIG. 6A

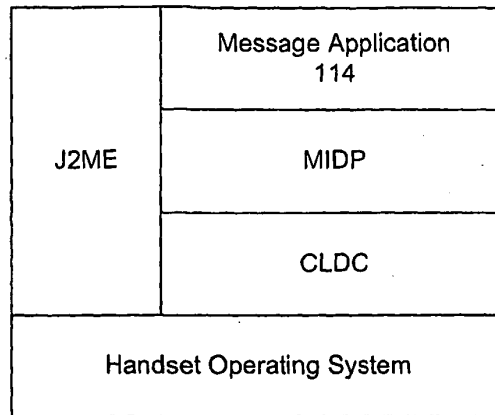


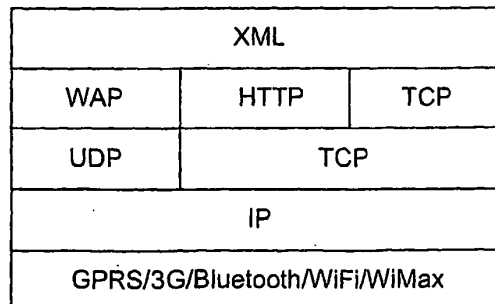
FIG. 6B

```

<message>
  <to>
    +1 555 1234
  </to>
  <body>
    Hi there!
  </body>
  <attachment>
    <photo>
      0xf6,0x34,0xa7...
    </photo>
    <voicemail>
      0xf6,0x34,0xa7...
    </voicemail>
  </attachment>
</message>

```

FIG. 6C



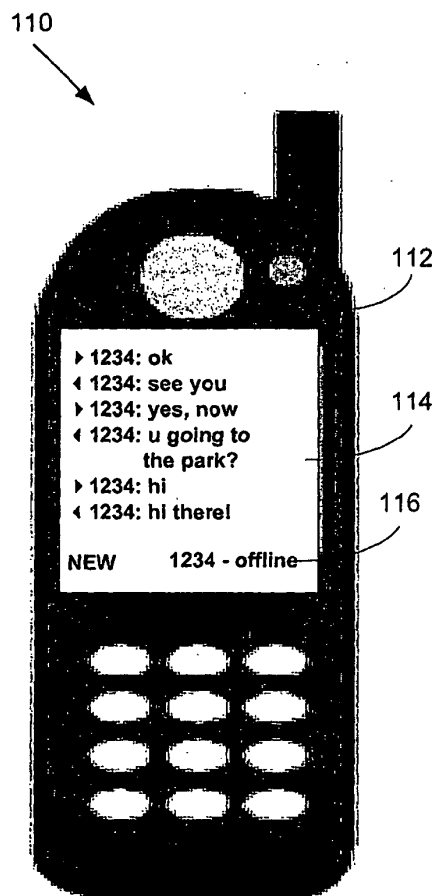


FIG. 7

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Graham		Merrett	
Residence Information (Select One) ☐ US Residency ☒ Non US Residency ☐ Active US Military Service				
City	Queensland	Country of Residence ⁱ	AU	
Mailing Address of Inventor:				
Address 1	55 Lewis Street, Woolloongabba			
Address 2				
City	Queensland	State/Province		
Postal Code	4102	Country ⁱ	AU	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. <div style="text-align: right;"><input type="button" value="Add"/></div>				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	3624		
Email Address	eoffice@vklaw.com	<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
Attorney Docket Number	RMT-PT001.8	Small Entity Status Claimed	☐
Application Type			
Subject Matter			
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)	1

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:					
☒ Customer Number		☐ US Patent Practitioner		☐ Limited Recognition (37 CFR 11.9)	
Customer Number		3624			
Prefix	Given Name	Middle Name	Family Name	Suffix	Remove
Registration Number					
Prefix	Given Name	Middle Name	Family Name	Suffix	Remove
Registration Number					
Additional Representative Information blocks may be generated within this form by selecting the Add button.					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status		Pending		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
	Continuation of	15966965	2018-04-30		
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
15966965	Continuation of	15011000	2016-01-29		
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
15011000	Continuation of	14307166	2014-06-17		
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14307166	Continuation of	13762347	2013-02-07	8918127	2014-12-23
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13762347	Continuation of	12452883	2010-07-07	8401576	2013-03-19
Prior Application Status				Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
12452883	a 371 of international	PCT/AU2008/001043	2008-07-18		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ¹	Filing Date (YYYY-MM-DD)	Access Code ¹ (if applicable)
2007903979	AU	2007-07-24	

Application Number	Country ¹	Filing Date (YYYY-MM-DD)	Access Code ¹ (if applicable)
2007906230	AU	2007-11-13	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			
<p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p>			
			Clear
☒ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.	☐ Person who shows sufficient proprietary interest		
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor: <input type="text"/>			
If the Applicant is an Organization check here. ☒			
Organization Name	REMBRANDT MESSAGING TECHNOLOGIES II, LP		
Mailing Address Information For Applicant:			
Address 1	401 CITY AVENUE		
Address 2	SUITE 900		
City	BALA CYNWYD	State/Province	PA
Country ¹	US	Postal Code	19004
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
If the Assignee or Non-Applicant Assignee is an Organization check here. ☒			
Organization Name	REMBRANDT MESSAGING TECHNOLOGIES II, LP		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	401 CITY AVENUE		
Address 2	SUITE 900		
City	BALA CYNWYD	State/Province	PA
Country ⁱ	US	Postal Code	19004
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	RMT-PT001.8
		Application Number	
Title of Invention	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Brian P. Gordaychik/			Date (YYYY-MM-DD)	
First Name	Brian P.	Last Name	Gordaychik	Registration Number	62179
Additional Signature may be generated within this form by selecting the Add button.					

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK		
First Named Inventor/Applicant Name:		Graham Merrett		
Filer:		Brian Paul Gordaychik/Angel Wolf		
Attorney Docket Number:		RMT-PT001.8		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	5	100	500
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				2220

Electronic Acknowledgement Receipt	
EFS ID:	38022983
Application Number:	16714113
International Application Number:	
Confirmation Number:	4546
Title of Invention:	MESSAGING SERVICE IN A WIRELESS COMMUNICATIONS NETWORK
First Named Inventor/Applicant Name:	Graham Merrett
Customer Number:	3624
Filer:	Brian Paul Gordaychik/Angel Wolf
Filer Authorized By:	Brian Paul Gordaychik
Attorney Docket Number:	RMT-PT001.8
Receipt Date:	13-DEC-2019
Filing Date:	
Time Stamp:	16:35:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$2220
RAM confirmation Number	E2019BCG36393672
Deposit Account	220493
Authorized User	Angel Wolf
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.16 (National application filing, search, and examination fees)</p> <p>37 CFR 1.17 (Patent application and reexamination processing fees)</p>	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 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		RMT-PT001_8_Application_EFS.PDF	134188	yes	28
			2cb6d7b41253518ddf869a4fe592e15235b2931c		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Abstract		28	28	
	Claims		22	27	
	Specification		1	21	
Warnings:					
Information:					
2	Oath or Declaration filed	RMT-PT001_8_Declaration_EFS.PDF	306043	no	2
			b8dee1f505fd070bae6c401811cdd9c4d15ed607		
Warnings:					
Information:					
3	Drawings-only black and white line drawings	RMT-PT001_8_Drawings_EFS.PDF	567818	no	7
			56e1699a649be4d255c0c3433f2236c2ec782d8b		
Warnings:					
Information:					
4	Application Data Sheet	WebADS.pdf	134042	no	8
			392bf0d500405657d62a06d9df4bed05f88a588		
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	36831	no	2
			3e5ce4e0843e40813d1c0d96ac2f840b42461601		

Warnings:	
Information:	
Total Files Size (in bytes):	1178922
<p>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.</p> <p><u>New Applications Under 35 U.S.C. 111</u> 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.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> 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.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> 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.</p>	