UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
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CORRESPONDENCE ADDRESS CHANGE

APPLICATION #	FILING OR 371(C) DATE	REQUEST ID
14/972,919	12/17/2015	78409

The following fields have been changed to Customer Number 175089 on 04/27/2023 via Patent Center in view of the certification copied below that authorized the change.

- Correspondence Address

The address for Customer Number 175089 is:

175089 - Cecil Law PLLC
10300 N. Central Expressway
Suite 290
Dallas , TX 75231

I certify, in accordance with 37 CFR 1.4(d)(4), that I am :

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature	**Name**	**Registration #**
/Thomas Cecil/	Thomas Cecil	77598

UNITED STATES
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Alexandria, Virginia 22313-1450
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FEE ADDRESS CHANGE

APPLICATION #	FILING OR 371(C) DATE	REQUEST ID
14/972,919	12/17/2015	78409

The following fields have been changed to Customer Number 175089 on 04/27/2023 via Patent Center in view of the certification copied below that authorized the change.

- Maintenance Fee Address

The address for Customer Number 175089 is:

175089 - Cecil Law PLLC
10300 N. Central Expressway
Suite 290
Dallas, TX 75231

I certify, in accordance with 37 CFR 1.4(d)(4), that I am :

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature	Name	Registration #
/Thomas Cecil/	Thomas Cecil	77598

APPLE EXHIBIT 1002

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	CTEXT-0005

CONFIRMATION NO. 7438

175089
Cecil Law PLLC
10300 N. Central Expressway
Suite 290
Dallas, TX 75231

POA ACCEPTANCE LETTER

OC000000137683749

Date Mailed: 04/06/2023

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/16/2023.

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**.

/ggasgedom/

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	S650L12313C1

CONFIRMATION NO. 7438

126434
Stevens & Lee PC
Princeton Pike Corporate Center
100 Lenox Drive, Suite 200
Lawrenceville, NJ 08648

POWER OF ATTORNEY NOTICE

OC000000137683739

Date Mailed: 04/06/2023

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/16/2023.

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

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**.

/ggasgedom/

PTO/AIA/81A (02-15)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Patent Number	10009304
Issue Date	6/26/2018
First Named Inventor	MOISA, Adam
Title	Method and System for Correlating Conversations in Messaging Environment
Attorney Docket No.	CTEXT-0005

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 175089

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Patent Owner

Signature	/s/ Anthony Vecchione	Date	8/5/2022
Name	Anthony Vecchione	Telephone	214-714-6360
Title and Company	President, CText IP LLC		

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 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.

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.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: CText IP LLC

Application No./Patent No.: 10,009,304 Filed/Issue Date: 06/26/2018

Titled: Method and System for Correlating Conversations in Messaging Environment

CText IP LLC, a Company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: CTEXT TECHNOLOGY LLC To: MOISA, ADAM

   The document was recorded in the United States Patent and Trademark Office at
   Reel 056131, Frame 0453, or for which a copy thereof is attached.

2. From: MOISA, ADAM To: BIN 2021, SERIES 650 OF ALLIED SECURITY TRUST I

   The document was recorded in the United States Patent and Trademark Office at
   Reel 056599, Frame 0158, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: 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.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: BIN 2021, SERIES 650 OF ALLIED SECURITY TRUST I To: CTEXT IP LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 061069, Frame 0491, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Thomas C. Cecil/	03/16/2023
Signature	Date
Thomas C. Cecil	77,598
Printed or Typed Name	Title or Registration 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.

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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).
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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.

Electronic Acknowledgement Receipt	
EFS ID:	47694112
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Customer Number:	126434
Filer:	Thomas Christopher Cecil
Filer Authorized By:	
Attorney Docket Number:	S650L12313C1
Receipt Date:	16-MAR-2023
Filing Date:	17-DEC-2015
Time Stamp:	14:33:09
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	POA_CTEXT-0005.pdf	135851 1594c8583a96d1f46daf9a6c259ee5c276d2e846	no	2

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	CTEXT-0005_StatementUnder373c.pdf	122327 fe3c63a2f01a579531191ef0d82d35097bcd1653	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	258178	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	REQUEST ID
14/972,919	10009304	2451	147910

PAIR Correspondence Address/Fee Address Change

The following fields have been changed to Customer Number 126434 on 09/16/2021 via Private PAIR in view of the certification copied below that authorized the change.

- Maintenance Fee Address

The address for Customer Number 126434 is:
126434
Stevens & Lee PC
669 River Drive
Suite 201
Elmwood Park, NJ 07407

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature:	/Russell W. Binns, Jr./
Name:	Russell W. Binns, Jr.
Registration Number:	41620

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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126434
Stevens & Lee PC
669 River Drive
Suite 201
Elmwood Park, NJ 07407

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature:	/Russell W. Binns, Jr./
Name:	Russell W. Binns, Jr.
Registration Number:	41620

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
14/972,919	12/17/2015	Adam Moisa	S650L12313C1	147902

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 09/16/2021 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

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

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Russell W. Binns, Jr./
Name:	Russell W. Binns, Jr.
Registration Number:	41620

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A

CONFIRMATION NO. 7438

61650
MYERS WOLIN, LLC
100 SOUTH JEFFERSON ROAD
SUITE 202
WHIPPANY, NJ 07981-1009

POWER OF ATTORNEY NOTICE

OC000000128328362

Date Mailed: 09/13/2021

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/07/2021.

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

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**.

/byemane/

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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14/972,919	12/17/2015	Adam Moisa	CLDF 5064A

CONFIRMATION NO. 7438

126434
Stevens & Lee PC
669 River Drive
Suite 201
Elmwood Park, NJ 07407

POA ACCEPTANCE LETTER

OC000000128328372

Date Mailed: 09/13/2021

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/07/2021.

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/byemane/

PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 126434

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

■ The address associated with Customer Number: 126434

OR

☐

Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address: BIN 2021, Series 650 of Allied Security Trust I
100 Overlook Center, 2nd Floor
Princeton, New Jersey 08540

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record
The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	Russell W. Binns, Jr.	Date	June 18, 2021
Name	Russell W. Binns, Jr.	Telephone	732-997-7737
Title	CEO and General Counsel, BIN 2021, Series 650 of Allied Security Trust I		

This collection of information is required by 37 CFR 1.31, 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.

Privacy Act Statement

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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.

PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: BIN 2021, SERIES 650 OF ALLIED SECURITY TRUST I

Application No./Patent No.: 10,009,304 Filed/Issue Date: 2018-06-26

Titled: METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

BIN 2021, SERIES 650 OF ALLIED SECURITY TRUST I, a statutory trust

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: MOISA, ADAM To: CTEXT TECHNOLOGY LLC

   The document was recorded in the United States Patent and Trademark Office at Reel 037314, Frame 0441, or for which a copy thereof is attached.

2. From: CTEXT TECHNOLOGY LLC To: MOISA, ADAM

   The document was recorded in the United States Patent and Trademark Office at Reel 056131, Frame 0453, or for which a copy thereof is attached.

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: MOISA, ADAM To: BIN 2021, SERIES 650 OF ALLIED SECURITY TRUST I

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Reel 056599, Frame 0158, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/John Maldjian/	2021-08-24
Signature	Date
John Maldjian	41967
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

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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.

Electronic Acknowledgement Receipt	
EFS ID:	43692176
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Customer Number:	61650
Filer:	John P. Maldjian/Lisa Bianco
Filer Authorized By:	John P. Maldjian
Attorney Docket Number:	CLDF 5064A
Receipt Date:	07-SEP-2021
Filing Date:	17-DEC-2015
Time Stamp:	10:22:58
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	BIN_2021_Executed_General_POA.pdf	117131 1b90c955779ff2f3443d6de8c8068f3813e539cd	no	2

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	S650L12313C1-373.pdf	200416 2a2973976ae74060a940eb233728604c6c186a16	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	317547	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A

CONFIRMATION NO. 7438

IMPROPER CPOA LETTER

61650
MYERS WOLIN, LLC
100 SOUTH JEFFERSON ROAD
SUITE 202
WHIPPANY, NJ 07981-1009

OC000000128021591

Date Mailed: 08/27/2021

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 08/24/2021. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney is from an assignee and the statement required by 37 CFR 3.73(c) has not been received.

/agizaw/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

126434
Stevens & Lee PC
669 River Drive
Suite 201
Elmwood Park, NJ 07407
UNITED STATES

PTO/AIA/80 (07-12)
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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 126434

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

■ The address associated with Customer Number: 126434

OR

☐

Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address: BIN 2021, Series 650 of Allied Security Trust I
100 Overlook Center, 2nd Floor
Princeton, New Jersey 08540

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SIGNATURE of Assignee of Record
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Signature	Russell W. Binns, Jr.	Date	June 18, 2021
Name	Russell W. Binns, Jr.	Telephone	732-997-7737
Title	CEO and General Counsel, BIN 2021, Series 650 of Allied Security Trust I		

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PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: SERIES 650 OF ALLIED SECURITY TRUST I

Application No./Patent No.: 10,009,304 Filed/Issue Date: 2018-06-26

Titled: METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

SERIES 650 OF ALLIED SECURITY TRUST I, a statutory trust

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☐ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

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4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

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4. From: _____ To: _____

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Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
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The document was recorded in the United States Patent and Trademark Office at
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/John Maldjian/	2021-08-24
Signature	Date
John Maldjian	41967
Printed or Typed Name	Title or Registration 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.

Electronic Acknowledgement Receipt	
EFS ID:	43583058
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Customer Number:	61650
Filer:	John P. Maldjian/Lisa Bianco
Filer Authorized By:	John P. Maldjian
Attorney Docket Number:	CLDF 5064A
Receipt Date:	24-AUG-2021
Filing Date:	17-DEC-2015
Time Stamp:	09:58:38
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	BIN_2021_Executed_General_POA.pdf	117131 1b90c955779ff2f3443d6de8c8068f3813e539cd	no	2

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	S650L12313C1-373.pdf	196191 5d971286f8a398c4bbf612bb1d4657f7c17e5148	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	313322	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	REQUEST ID
14/972,919	10009304	2451	69888

PAIR Correspondence Address/Fee Address Change

The following fields have been changed to Customer Number 61650 on 08/14/2018 via Private PAIR in view of the certification copied below that authorized the change.

- Correspondence Address

The address for Customer Number 61650 is:
61650
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
West Tower, Floor 7
MORRISTOWN, NJ 07960-6834

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature:	/Harris A. Wolin/
Name:	Harris A. Wolin
Registration Number:	39432

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/972,919	06/26/2018	10009304	CLDF 5064A	7438

7590 06/06/2018

MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
West Tower, 7th Floor
MORRISTOWN, NJ 07960-6834

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 57 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):

CTEXT TECHNOLOGY LLC, New York, NY;
Adam Moisa, New York, NY;

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.

CHANGE OF CORRESPONDENCE ADDRESS
Application

Application Number	14972919	Art Unit	2451
Filing Date	17-Dec-2015	Examiner Name	ZARNI MAUNG
First Name Inventor	Adam Moisa	Attorney Doc. Number	CLDF 5064A

Please change the correspondence address for the above-identified patent application to:

☐ The address associated with Customer Number:	

OR

☒ Firm or Individual Name:			MYERS WOLIN, LLC		
Address	100 HEADQUARTERS PLAZA				
	West Tower, 7th Floor				
City	MORRISTOWN	State	NEW JERSEY	Postal Code	07960-6834
Country	UNITED STATES				
Telephone	9738281318	Email	patent@myerswolin.com		

Signature :

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 has filed and has been granted power of attorney in this application.

Signature	/Harris A. Wolin/	**Date**	05-24-2018
Name	Harris Wolin	**Registration Number**	39432

WEB C.AD 1.0

Electronic Patent Application Fee Transmittal

Application Number:	14972919
Filing Date:	17-Dec-2015
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Filer:	Harris Wolin/Michaelanne Stelling
Attorney Docket Number:	CLDF 5064A

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPL ISSUE FEE	2501	1	500	500
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**500**

Electronic Acknowledgement Receipt	
EFS ID:	32715419
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Correspondence Address:	MYERS WOLIN, LLC - 100 HEADQUARTERS PLAZA West Tower, 7th Floor MORRISTOWN NJ 07960-6834 US 9738281318 patent@myerswolin.com
Filer:	Harris Wolin/Michaelanne Stelling
Filer Authorized By:	Harris Wolin
Attorney Docket Number:	CLDF 5064A
Receipt Date:	24-MAY-2018
Filing Date:	17-DEC-2015
Time Stamp:	14:59:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$500

RAM confirmation Number	052518INTEFSW14593300
Deposit Account	503894
Authorized User	Harris Wolin

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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)	Web85b.pdf	46453 197b5be8863deae80b6314824742 8a2bf1153fce	no	2
Warnings:					
Information:					
2	Change of Address	web85correspondenceaddress.pdf	37913 649844a17fd5c9f813c55f1fa421e14334a6159f	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31797 5164df40fefa822826392f54d5e070889d9e65a2	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	116163		

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.

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
14972919	17-Dec-2015	Adam Moisa	CLDF 5064A	7438

TITLE OF INVENTION :

METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2451	206000	ZARNI MAUNG

Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
$500	$0	$500	29-May-2018	$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
MYERS WOLIN, LLC 100 HEADQUARTERS PLAZA North Tower, 6th Floor MORRISTOWN NJ 07960-6834 UNITED STATES 973-401-7157 patent@myerswolin.com	
☒ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

◉ Applicant asserting small entity status. See 37 CFR 1.27.
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.

○ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

3.The Following Fee(s) Are Submitted:

☒ Issue Fee	☐ I authorize USPTO to apply my previously paid issue fee to the current fees due
☐ Publication Fee	☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____
☐ Advance Order - # of copies _____	☒ If **in addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency or credit any overpayment, to Deposit Account Number 503894 . The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed

NOTE: If no name is listed, no name will be printed
For printing on the patent front page, list to be displayed as entered

1. MYERS WOLIN, LLC
2. HARRIS WOLIN
3.

5.Assignee Name(s) and Residence Data To Be Printed

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

Name	City	State	Country	Category
CTEXT TECHNOLOGY LLC	New York	NEW YORK	united states	corporation

6.Signature

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 has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Harris A. Wolin/	**Date**	05-24-2018
Name	Harris Wolin	**Registration Number**	39432

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

61650 7590 02/26/2018

MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

EXAMINER
MAUNG, ZARNI

ART UNIT	PAPER NUMBER
2451	

DATE MAILED: 02/26/2018

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A	7438

TITLE OF INVENTION: METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0	$0	$500	05/29/2018

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), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (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)

61650 7590 02/26/2018
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A	7438

TITLE OF INVENTION: METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0	$0	$500	05/29/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
MAUNG, ZARNI	2451	709-206000

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 03-02 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)

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

(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. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — 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.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — 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.
- ❑ Applicant changing to regular undiscounted fee 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. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A	7438

61650 7590 02/26/2018

MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

EXAMINER	
MAUNG, ZARNI	
ART UNIT	**PAPER NUMBER**
2451	

DATE MAILED: 02/26/2018

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 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, 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. 14/972,919	Applicant(s) MOISA, ADAM	
	Examiner Zarni Maung	Art Unit 2451	AIA (First Inventor to File) Status Yes

-- 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 *See Continuation Sheet*.
   ☐ 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 *1-6,9-12,15-17,19-22 (now renumbered claims 1-17)*. 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 _____.

/Zarni Maung/
Primary Examiner, Art Unit 2451

Continuation of Item 1. This communication is responsive to : the amendment, remarks and terminal disclaimer filed on December 27, 2017.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	**Art Unit**
	ZARNI MAUNG	2451

CPC						
Symbol					**Type**	**Version**
H04L		51	/	16	F	2013-01-01
H04L		51	/	046	I	2013-01-01
G06Q		10	/	107	I	2013-01-01
H04L		51	/	04	I	2013-01-01
G06T		11	/	001	I	2013-01-01
G06T		2200	/	24	A	2013-01-01
			/			
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			/			

CPC Combination Sets							
Symbol				**Type**	**Set**	**Ranking**	**Version**
			/				
			/				

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 17	
/ZARNI MAUNG/ Primary Examiner.Art Unit 2451 (Primary Examiner)	2/14/18 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office — Part of Paper No. 20180214

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	**Art Unit**
	ZARNI MAUNG	2451

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
		G	0	6	F	15 / 16 (2006.01.01)	G	0	6	F	12 / 00 (2006.0)
CROSS REFERENCE(S)											
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)										

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/ZARNI MAUNG/ Primary Examiner.Art Unit 2451	2/14/18	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No. 20180214

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	**Art Unit**
	ZARNI MAUNG	2451

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	13	22												
2	2														
3	3														
5	4														
6	5														
7	6														
4	9														
8	10														
9	11														
10	12														
11	15														
14	16														
15	17														
16	19														
17	20														
12	21														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 17	
/ZARNI MAUNG/ Primary Examiner.Art Unit 2451 (Primary Examiner)	2/14/18 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No. 20180214

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1323	(first primary main) near9 (indicat$5 identif$5) near9 cue$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:32
L2	13	display$5 near9 new near9 messag$4 near9 cue$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:33
L3	4	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:33
L4	4263	message$4 with cue$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:34
L5	159	1 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:34

2/14/2018 10:34:38 AM
C:\Users\zmaung\Documents\EAST\Workspaces\15109825.wsp

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1323	(first primary main) near9 (indicat$5 identif$5) near9 cue$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:32
L2	13	display$5 near9 new near9 messag$4 near9 cue$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:33
L3	4	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:33
L4	4263	message$4 with cue$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:34
L5	159	1 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:34
L6	2	"9246857".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/14 10:40

2/14/2018 10:41:06 AM
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	Art Unit
	ZARNI MAUNG	2451

CPC- SEARCHED		
Symbol	Date	Examiner
H04L51/04; H04L69/329; H04L67/24; H04L51/066; H04L51/34; H04L51/046; H04L51/16; H04L29/06; H04L12/1822; H04L51/36; H04L67/22; H04L51/12; H04L51/24; H04L12/1813; H04L29/08; H04L41/22; H04L51/043; H04L5	2/14/18	ZM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner
H04L 51/04	2/14/18	ZM

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	203,223-229,250	2/14/18	ZM

* 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
East search, NPL searches. East search results attached.	2/14/18	ZM

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
H04L 51	046	2/14/18	ZM

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	**Art Unit**
	ZARNI MAUNG	2451

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

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/29/2017	02/14/2018							
1	1	✓	=							
2	2	✓	=							
3	3	✓	=							
5	4	✓	=							
6	5	✓	=							
7	6	✓	=							
	7	✓	-							
	8	✓	-							
4	9	✓	=							
8	10	✓	=							
9	11	✓	=							
10	12	✓	=							
	13	✓	-							
	14	✓	-							
11	15	✓	=							
14	16	✓	=							
15	17	✓	=							
	18	✓	-							
16	19	✓	=							
17	20	✓	=							
12	21		=							
13	22		=							

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www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 7438

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/972,919	12/17/2015	709	2451	CLDF 5064A

APPLICANTS
CTEXT TECHNOLOGY LLC, New York, NY;

INVENTORS
Adam Moisa, New York, NY;

**** CONTINUING DATA ***************************
This application is a CON of 14/581,178 12/23/2014 PAT 9246857
which claims benefit of 61/920,177 12/23/2013
and claims benefit of 62/000,220 05/19/2014
and claims benefit of 62/061,308 10/08/2014

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
01/04/2016

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ZARNI MAUNG/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	20	20	2

ADDRESS
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834
UNITED STATES

TITLE
METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

FILING FEE RECEIVED		
730	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/972,919	Filing Date 12/17/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) 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), (i), 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(i))	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

AMENDMENT	12/27/2017	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 17	Minus	** 20	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $210 =	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		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) 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.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
ALLYSON PURNELL

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	14972919
Filing Date	17-Dec-2015
First Named Inventor	Adam Moisa
Attorney Docket Number	CLDF 5064A
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

☒ 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
CTEXT TECHNOLOGY LLC	100%

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)

9246857

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.

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:
- 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.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○ 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 39432 ○ 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	/Harris A. Wolin/
Name	Harris A. Wolin

*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:	14972919
Filing Date:	17-Dec-2015
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Filer:	Harris Wolin
Attorney Docket Number:	CLDF 5064A

Filed as Small 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	2814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 14972919

Filing Date: 17-Dec-2015

Applicant/Patent under Reexamination: Moisa

Electronic Terminal Disclaimer filed on December 27, 2017

☒ 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:	31338956
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Customer Number:	61650
Filer:	Harris Wolin
Filer Authorized By:	
Attorney Docket Number:	CLDF 5064A
Receipt Date:	27-DEC-2017
Filing Date:	17-DEC-2015
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1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33613 c9308d55a05637be4bc3434bef6437b743129802	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30047 bf164347dfe03972e86742d476f15efdef08283e	no	2
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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 UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Adam Moisa	Examiner: Zarni Maung
Serial No.: 14/972,919	Art Unit: 2451
Filing Date: December 17, 2015	Confirmation No.: 7438
For: **METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN A MESSAGING ENVIRONMENT**	Attorney Docket No.: CLDF 5064A

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

December 27, 2017

RESPONSE TO NON-FINAL OFFICE ACTION

Sir:

Applicant requests a 3 month extension of time.

In response to the Non-Final Office Action dated July 6, 2017, please amend the subject application as follows:

Amendments to the **Claims** begin on page 2 of this paper.

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A computer based method for correlating conversations in a messaging environment, the method comprising:

providing a discussion interface at a first interface device, wherein the discussion interface displays a first message and a second message;

~~receiving, at the first interface device, a first indication that the first message is part of an active conversation;~~

providing a message entry location for inputting new messages, the message entry location visually associated with the discussion interface,

receiving, at the first interface device, a first indication that a first new message is responsive to the first message;

changing a visual element of the message entry location upon receipt of the first indication to match a first visual cue shared with the first message;

receiving ~~a~~ the first new message at the message entry location; and

displaying the first new message with ~~a~~ the first visual cue applied within the discussion interface at the first interface device,

wherein the first visual cue is shared by the first message and the first new message~~messages associated with the active conversation~~.

2. (Original) The computer based method of claim 1 wherein the first indication is generated by a tapping input at a touch sensitive display of the first interface device.

3. (Currently amended) The computer based method of claim 1 wherein the first visual cue is a first color assigned to the first ~~conversation~~ message, and wherein the second message is assigned ~~displayed in~~ a second color.

4. (Original) The computer based method of claim 1 further comprising:

displaying the first new message in the discussion interface without incorporating the first visual cue prior to receiving the first indication, and

applying the first visual cue to the first new message in the discussion interface after receiving the first indication.

5. (Original) The computer based method of claim 1, wherein the first message is part of a first conversation and the second message is part of a second conversation, the method further comprising:

defining, upon receiving the first indication, the first conversation as the active conversation, and

defining the first new message as part of the first conversation,

wherein the first visual cue is incorporated into any previously displayed messages that are part of the first conversation.

6. (Original)The computer based method of claim 5 further comprising:

receiving, at the first interface device, after displaying the first new message, a second indication that the second message is part of an active conversation;

defining, upon receiving the second indication, the active conversation as the second conversation exclusively;

receiving a second new message at the message entry location; and

displaying the second new message in the discussion interface at the first interface device;

wherein the displaying of the second new message incorporates a second visual cue shared by messages associated with the second conversation.

7. (Cancelled)

8. (Cancelled)

9. (Currently amended) The computer based method of ~~claim 8~~claim 3 wherein the visual cue is incorporated into the message entry location as ~~element is~~ a background color.

10. (Currently amended) The computer based method of claim 1 further comprising:

providing the discussion interface at a second interface device, wherein the discussion interface displays the first message and the second message;

receiving, at the second interface device, the first indication;

displaying the first new message at the second interface device, wherein the displaying of the first new message incorporates a third visual cue different than the first

visual cue shared solely by the first message and the first new message~~messages associated with the active conversation~~.

11. (Original) The computer based method of claim 10 wherein the first indication is generated at the first interface device and is received at the second interface device from one of a server or the first interface device.

12. (Original) The computer based method of claim 10 wherein the first visual cue and the third visual cue differ and are based on user preferences at each of the first user interface device and the second user interface device.

13. (Cancelled)

14. (Cancelled)

15. (Currently amended) The computer based method of claim 1 wherein the first visual cue is in the form of text associated with the first message and proximity to text associated with the first message such that after receiving the first indication, the visual element of the message entry location is changed to present text associated with the first message and, upon receiving the first new message, the first new message is displayed at a location within the discussion interface in closer proximity to the first message relative to proximity of the second message to the first message.

16. (Currently amended) A system for correlating conversations, the system comprising an interface device in communication with a computerized network, the interface device comprising:

a processor for implementing a software application on the interface device;

a memory for storing the software application and for storing a plurality of messages in accordance with the software application;

a transmission unit for transmitting messages to the computerized network; and

a display,

wherein the software application comprises instructions for:

providing a discussion interface at the display of the user interface device for displaying messages stored in the memory;

~~recording an indication that one of several conversations, each comprising one or more of the messages stored in memory, is an active conversation;~~

providing a message entry location for entering new messages, the message entry location visually associated with the discussion interface;

recording an indication that a first new message will be responsive to one of several messages;

changing a visual element of the message entry location upon receipt of the first indication to match a first visual cue shared with the one of several messages;

receiving at least one new message entered at the message entry location;

transmitting, using the transmission unit, the at least one new message to the computerized network incorporating an indication of which one of the several messages~~several conversations was the active conversation at the time of entry of~~ the new message is responsive to~~messages~~; and

displaying, at the display, the at least one new message alongside the one of the several messages ~~at least one message associated with a conversation other than the active conversation~~ and incorporating the first visual cue ~~cues shared with any messages that are part of the conversation that was the active conversation upon entry of the at least one new message~~into the display of the first new message and the one of the several messages.

17. (Currently amended) The system of claim 16, wherein the display is a touch screen, and wherein the indication recorded ~~that one of the several conversations is the active conversation~~ is a tapping input at the display.

18. (Cancelled)

19. (Currently amended) The system of ~~claim 18~~claim 16 wherein the visual element is a background color.

20. (Original) The system of claim 16, wherein the memory further stores user preferences, and wherein the visual cues are defined in the user preferences.

21. (New) The computer based method of claim 1 wherein the first visual cue is in the form of text associated with the first message such that after receiving the first indication, the visual element of the message entry location is changed to present text associated with the first message and, upon receiving the first new message, the first new message is displayed with text associated with the first message.

22. (New) The computer based method of claim 1, wherein the first visual cue is reflected in the message entry location in a first form and in the first message and the first new message as displayed in the discussion interface in a second way.

REMARKS

A Non-Final Office Action was mailed on July 6, 2017. Claims 1-20 are pending. In this response, claims 1, 3, 9, 10, 15-17, and 19 are amended, claims 7, 8, 13, 14, and 18 are cancelled, and claims 21 and 22 are new. No new matter has been added.

REJECTION UNDER 35 U.S.C. §101

Claims 1-20 are rejected under 35 U.S.C. §101 as allegedly being directed to a judicial exception. More specifically, the Office indicated that the claims are directed to an abstract idea without providing significantly more. In particular, the Office provides that the claims are similar to "collecting information, analyzing it, and displaying certain results of the collection and analysis." The Office points to *Electric Power Group* to support the assertion that these concepts are abstract.

In comparing Applicant's claims to the cited case, the Office characterizes the analogous elements of the claim as "providing a discussion interface . . ., receiving a first indication that the first message . . ., providing a message entry location . . ., receiving a first new message . . ., displaying the first new message . . ., wherein the first visual cue is shared by messages . . ." While this sequence partially quoted references each line of claim 1, it skirts the actual elements of the claim. For example, the Office cites a ". . . visual cue . . . shared by messages. . ." but ignores the visual cue being shared only by specific messages, indicating a response to the identified message.

Applicant has amended the claims to incorporate features from independent claims and to clarify some of these features. Applicant has further amended the claims to highlight the transformation of a visual element of the message entry location upon receipt of the first indication. Such concrete transformations in the context of the provided interface are not abstract and are not comparable to the recited case.

In fact, in the first referenced case, the court explained that the claims used "existing computers as tools in aid of processes focused on abstract ideas" and contrasted with *Enfish* where the improvement was in a particular database technique. In other words, in *Electric*

Power Group, the court did not consider any of the underlying components to be new. In the words of the court:

> The claims in this case . . . do not include any requirement for performing the claimed functions of gathering, analyzing, and displaying in real time by use of anything but entirely conventional, generic technology. See *id.* at 11.

The court in that case also distinguished between claims focused on the results, as in *Electric Power Group*, and other allowable claims focused on concretely defined solutions to technical problems, including software problems, which may be patentable. This distinguishes a claim "directed to a patent ineligible concept" such as the claims in the cited case from a claim to software that is not abstract to begin with, as in *Enfish* and in the present case.

In this response, as noted above, Applicant has amended the claims to clarify the claimed methods. However, the claim is clearly directed to a concrete solution to a defined problem. Accordingly, the claims are not directed to an abstract concept at all, and instead are directed to improved methods for correlating conversations in a messaging environment. This is not a case where the claims are simply implementing a standard analysis using a computer. Instead, as in *Enfish*, "the claims are directed to a specific implementation of a solution to a problem in the software arts" and are not directed to an abstract idea. *Enfish* at 18.

Accordingly, and particularly in view of the comprehensive amendments to the claims, Applicant respectfully requests that the rejections under 35 U.S.C. §101 be withdrawn.

DOUBLE PATENTING

The Office has indicated that claims 1-20 are rejected on the grounds of nonstatutory double patenting over claims 1-18 of US Patent No. 9,246,857.

Responsive thereto, Applicant has submitted a terminal disclaimer via the eProcessing platform in EFS, and it has now been approved.

Accordingly, it is respectfully requested that the rejection on the grounds of nonstatutory double patenting be withdrawn.

REJECTIONS UNDER 35 U.S.C. §103

Claims 1-20 are rejected under 35 U.S.C. §103 as being unpatentable over *Abernathy Jr. et al.* (US Patent Pub. No. 2007/0203985) in view of *Chaar et al.* (US Patent Pub. No. 2006/0248150).

Applicant submits that the prior art, whether taken alone or in combination, does not teach or suggest the claimed invention. In particular, claim 1 provides a method for correlating conversations comprising:

> *providing a discussion interface at a first interface device, wherein the discussion interface displays a first message and a second message;*
>
> *providing a message entry location for inputting new messages, the message entry location visually associated with the discussion interface,*
>
> *receiving, at the first interface device, a first indication that a first new message is responsive to the first message;*
>
> *changing a visual element of the message entry location upon receipt of the first indication to match a first visual cue shared with the first message;*
>
> *receiving the first new message at the message entry location; and*
>
> *displaying the first new message with the first visual cue applied within the discussion interface at the first interface device,*
>
> *wherein the first visual cue is shared by the first message and the first new message.* (Emphasis added)

Accordingly, once the method receives an indication that a new message will respond to some existing message, a visual element of the message entry location is transformed to reflect that visual cue. This could be by, for example, mirroring a color associated with the selected message or by mirroring text, an icon, or some other identifier associated with the selected message.

Only once a user finishes entering a new message and it is received at the message entry location does the method then display the submitted message along with the visual cue in the discussion interface.

The Office points to *Abernathy* as disclosing this type of transformation of a visual element of the message entry location with respect to cancelled claim 13. However, *Abernathy* does not appear to consider any treatment of the message prior to the receipt of the newly submitted message. In particular, the Office points to paragraphs 0016-0018 of Abernathy, discussing figures 2a and 2b of the reference. However, as shown in FIG. 2a, reproduced and annotated for reference, each of those figures simply show the use of a visual cue showing the association between a received message and the message it is responsive to.

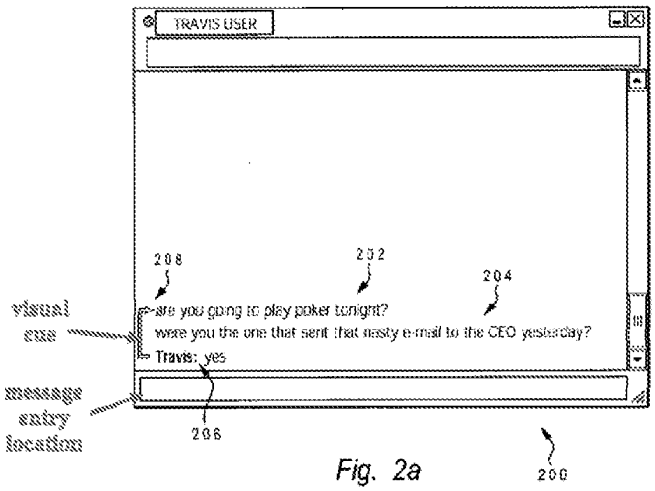


Fig. 2a

This is in contrast with the claimed method in which the message entry location itself is treated with a visual cue prior to the receipt of any message so that a user is clearly aware of what message they are responding to.

Accordingly, *Abernathy* does not provide a method that includes *changing a visual element of the message entry location upon receipt of the first indication to match a first visual cue shared with the first message*. The secondary reference to *Chaar* does nothing to address the deficiency with respect to *Abernathy*. Accordingly, claim 1 is believed to be patentable over the references cited, whether taken alone or in combination.

Claim 16 includes the same elements discussed above with respect to claim 1, and is believed to be similarly allowable. Claims 2-6, 9-12, 15, 17, 19-20, and new claims 21 and 22 all ultimately depend from and take all limitations from either claim 1 or 16, and are believed to be similarly allowable.

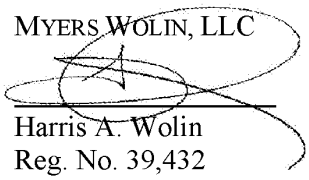
Accordingly, it is respectfully requested that the Office withdraw the rejections under 35 U.S.C. §103

An earnest effort has been made to be fully responsive to the Office's objections. In view of the above amendments and remarks, it is believed that claims 1-6, 9-12, 15-17, and 19-22, consisting of independent claims 1, 16, and the claims dependent therefrom, are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Office should consider this application not to be in condition for allowance, the Office is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper, not already paid through an EFS-Web filing, may be charged to Deposit Account No. 50-3894. Any overpayment may be credited to Deposit Account No. 50-3894.

Respectfully submitted,

MYERS WOLIN, LLC



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Electronic Patent Application Fee Transmittal					
Application Number:	14972919				
Filing Date:	17-Dec-2015				
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT				
First Named Inventor/Applicant Name:	Adam Moisa				
Filer:	Harris Wolin				
Attorney Docket Number:	CLDF 5064A				
Filed as Small 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:					
Extension-of-Time:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	700	700
Miscellaneous:				
		Total in USD ($)		**700**

Electronic Acknowledgement Receipt	
EFS ID:	31339011
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
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Filer:	Harris Wolin
Filer Authorized By:	
Attorney Docket Number:	CLDF 5064A
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Filing Date:	17-DEC-2015
Time Stamp:	09:12:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

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Payment Type	CARD
Payment was successfully received in RAM	$700
RAM confirmation Number	122717INTEFSW09131000
Deposit Account	
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1		cldf_5064a_20170706_nfoa_resp.pdf	222929 2f5926248ec347e636eb20985b4bf8e1451d83b8	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	12

Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30418 c4560218f7bd919ef4177174e4db01b7f3e94557	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	253347		

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New Applications Under 35 U.S.C. 111

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A	7438

61650 7590 07/06/2017

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EXAMINER	
MAUNG, ZARNI	

ART UNIT	PAPER NUMBER
2451	

NOTIFICATION DATE	DELIVERY MODE
07/06/2017	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):

patent@myerswolin.com

Office Action Summary	Application No. 14/972,919	Applicant(s) MOISA, ADAM	
	Examiner Zarni Maung	Art Unit 2451	AIA (First Inventor to File) Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/17/15*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ 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.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, 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.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

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)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. This action is responsive to the application filed on December 17, 2015. Claims 1-20 are presented for examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In particular, claims are directed to a judicial exception (abstract idea) without significantly more.

When considering subject matter eligibility under 35 U.S.C. 101, it must be determined whether the claim is directed to one of the four statutory categories of invention, i.e., process, machine, manufacture, or composition of matter. If the claim does fall within one of the statutory categories, it must then be determined whether the claim is directed to a judicial exception (i.e., law of nature, natural phenomenon, and abstract idea), and if so, it must additionally be determined whether the claim is a patent-eligible application of the exception. If an abstract idea is present in the claim, any element or combination of elements in the claim must be sufficient to ensure that

the claim amounts to significantly more than the abstract idea itself. Examples of abstract ideas include certain method for manipulating data; certain methods of organizing human activities; an idea itself; and mathematical relationships/formulas. Alice Corporation Pty. Ltd. v. CLS Bank International, et al., 573 U.S. (2014).

The claims 1-20 are directed to the abstract idea of "providing a discussion interface…, receiving a first indication that the first message…, providing a message entry location…, receiving a first new message.., displaying the first new message…, wherein the first visual cue is shared by messages…". All claimed elements are directed to an abstract idea similar to that of collecting information, analyzing it, and displaying certain results of the collection and analysis (*Electric Power Group*), or Collecting, displaying and manipulating data (*Int. Ventures v. Cop One Financial*), or Delivering user-selected media content to portable devices (*Affinity Labs v. Amazon.com*). All claimed elements are directed to an idea standing alone such as an uninstantiated concept, plan or scheme as well as mental process. The additional elements or combination of elements in the claims other than the abstract idea per se amount to no more than: i) mere instructions to implement the idea on a computer/device, and/or ii) recitation of generic computer/device structure that serves to perform generic computer/device functions that are well-understood, routine, and conventional activities previously known to the pertinent industry. Viewed as a whole, these additional claim elements do not provide meaningful limitations to transform the abstract idea into a patent eligible application of the abstract idea such that the claims

amount to significantly more than the abstract idea itself. Therefore, the claims are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

The claims as a whole, do not amount to significantly more than the abstract idea itself. All claimed elements are directed to an abstract idea similar to that of collecting information, analyzing it, and displaying certain results of the collection and analysis (*Electric Power Group*), or Collecting, displaying and manipulating data (*Int. Ventures v. Cop One Financial*), or Delivering user-selected media content to portable devices (*Affinity Labs v. Amazon.com*) . The dependent claims require the additional limitations of "touch sensitive display of the first interface.., displaying the first new message…, applying the first visual cue to the first new message..., first message is part of a first conversation..., defining the first new message..., receiving a second indication.., defining the active conversation..., displaying the second new message…, changing a visual element of the message entry…, providing the discussion interface at a second interface….". **Taking the additional elements individually and in combination**, the computer at each step of the process performs purely generic computer functions. This is because the claims do not amount to an improvement to another technology or technical field; the claims do not amount to an improvement to the functioning of a computer/device itself; and the claims do not move beyond a general link of the use of an abstract idea to a particular technological environment.

The analysis above applies to the statutory category of invention of claims 1, and 16. Furthermore, dependent claims 2-15, and 17-20 do not resolve the issues raised in

the independent claims. Accordingly, claims 1-20 are rejected as ineligible for patenting under 35 U.S.C. 101 based upon the same analysis.

The instant claims are rejected under 35 USC 101 in view of The Decision in Alice Corporation Ply. Ltd. v. CLS Bank International, et al. in a unanimous decision, the Supreme Court held that the patent claims in Alice Corporation Pty. Ltd. v. CLS Bank International, el al. ("Alice Corp. ") are not patent-eligible under 35 U.S.C. § 101. *See SmartGene Inc. v.Advanced Biological Labs., SA 555 Fed. Appx. 950 (Fed. Cir. 2014) (nonprecedential); Planet Bingo, LLC v. VKGS LLC, _Fed. Appx. _(Fed. Cir. 2014)(nonprecedential);and* ***2014 Interim Guidance on Patent Subject Matter Eligibility*** *(79 FR 74618), Sections IV. B.4 and IV. C.2) which is found at: http://www.gpo.gov/fdsys/pkg/FR-2014-12-16/pdf/2014-29414.pdf*. Applicant may be interested in reviewing the 35 USC 101 training materials which provide worksheet examples with claims that have been deemed statutory and claims that have been deemed non-statutory using this analysis: http://www.uspto.gov/patent/laws-and-regulations/examination-policy/examination-guidance-and-training-materials.

Double Patenting

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).

Claims 1-18 of patent 9,246,857 contains every element of claims 1-20 of the instant application and as such anticipates claims 1-20 of the instant application.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of

rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-20 are rejected under 35 U.S.C. 103 as being unpatentable over Abernethy, JR. et al., U.S. Patent Application Publication Number 2007/0203985 (hereinafter Abernethy), in view of Chaar et al., U.S. Patent Application Publication Number 2006/0248150 (hereinafter Chaar).

Abernethy discloses a method and system for, in an instant messaging application, displaying a visual cue on a user interface that associates a response text message with one of plurality of received text messages (abstract). Abernethy discloses the invention as claimed. Taking claim 1 as an exemplary claim, Abernethy discloses a computer based method for correlating conversations in a messaging environment (0015), the method comprising: providing a discussion interface (User Interface 200) at a first interface device (display 401), wherein the discussion interface (200) displays a first message (202, Are you going to play poker tonight ?) and a second message (204, Were you the one that sent nasty e-mail to the CEO yesterday ?); receiving, at the first interface device (200), a first indication that the first message is part of an active conversation (0016-0018, 202 is an active message and indication on the display 200 is inherently included in the displaying function to the user); providing a

message entry location for inputting new messages (location to input the new message 206 on UI 200), the message entry location visually associated with the discussion interface (200), receiving a first new message (206) at the message entry location (200); and displaying the first new message with a first visual cue (line 208, 0016-0018, visual cue is applied to indicate that response text 206 is not an answer to received message 204, but rather is responding to received text message 202) applied within the discussion interface (UI 200) at the first interface device (401).

Abernethy does not explicitly show that wherein the first visual cue is shared by messages associated with the active conversation. However, Chaar, in the same field of instant messaging endeavor, discloses the process of a first visual cue (colors 110, one distinguishing session characteristic is a change in one of a color; abstract, 0021, 0025)) which is shared by messages associated with active conversation. Therefore, it would have been obvious for one of ordinary skill in the art before the effective filling date of the invention to modify Abernethy in view of Charr by including the process of first visual cue which is shared by messages associated with the active conversation because doing so would have enable the system to provide an addition distinguishing feature for new thread of text as suggested by Charr (abstract, summary). One of ordinary skill in the art would have been motivated to combine the references and arrive at the claimed invention so as to obtain a system capable of providing distinguishing feature for new session or new text in an instant messaging system.

As per claim 2, Abernethy discloses the computer based method of claim 1, wherein Abernethy discloses that the first indication (208) is generated on the display of the first interface device (401). Abernethy does not explicitly discloses that the first indication (208) is generated by a tapping input at a touch sensitive display of the first interface device (401). However, it is well known and is required routine skill in the art to generate indication by tapping at a touch sensitive display. Therefore, it would have been obvious for one of ordinary skill in the at before the effective filling date of the claimed invention to modify Abernethy by including the process of generating indication by tapping at a touch sensitive display because it is well known in the art to use a touch sensitive display. One of ordinary skill in the art would have been motivated to modify Abernethy to include a touch sensitive display so as to obtain a system which is capable to accepting different types of input into the system.

As per claim 3, Abernethy discloses the computer based method of claim 1 wherein Abernethy does not explicitly show that the visual cue is a first color assigned to the first conversation, and wherein the second message is displayed in a second color. However, Chaar, in the same field of instant messaging endeavor, discloses that aspect of the invention (assigning different colors). Therefore, it would have been obvious for one of ordinary skill in the art before the effective filing date of the invention to modify Abernethy in view of Chaar to arrive at the claimed invention for the same reasons set forth in claim 1, *supra*.

As per claim 4, Abernethy discloses the computer based method of claim 1 further comprising: displaying the first new message in the discussion interface without incorporating the first visual cue prior to receiving the first indication, and applying the first visual cue to the first new message in the discussion interface after receiving the first indication (figures 1b-2b, messages on the UI 200).

As per claim 5, Abernethy discloses the computer based method of claim 1, wherein the first message (202, Are you going to play poker tonight ?) is part of a first conversation and the second message is part of a second conversation (Were you the one that sent nasty e-mail to the CEO yesterday ?), the method further comprising: defining, upon receiving the first indication, the first conversation as the active conversation (first conversation is active on the UI 200), and defining the first new message as part of the first conversation (206 as part of first conversation), wherein the first visual cue is incorporated into any previously displayed messages that are part of the first conversation (208 as part of first conversation; all Figures, 0016-0018).

As per claim 6, Abernethy discloses the computer based method of claim 5 further comprising: receiving, at the first interface device, after displaying the first new message, a second indication that the second message is part of an active conversation (204, Were you the one that sent nasty e-mail to the CEO yesterday ?; indication is inherently included in the display function to the user); defining, upon receiving the second indication, the active conversation as the second conversation exclusively;

receiving a second new message at the message entry location; and displaying the second new message in the discussion interface at the first interface device; wherein the displaying of the second new message incorporates a second visual cue shared by messages associated with the second conversation (second or third or multiple messages are inherently included in the multiple messages discloses by Abernethy; 0016-0018, 0029-0030).

As per claim 7, Abernethy discloses the computer based method of claim 6 wherein the first and second new messages are displayed in the discussion interface in the chronological order in which they were received (figures 2a-2b, 0016-0018, all messages are displayed in chronological order).

As per claim 8, Abernethy discloses the computer based method of claim 7 further comprising: changing a visual element of the message entry location upon receipt of the first indication to match the first visual cue, and upon receipt of the second indication, changing the visual element of the message entry location to match the second visual cue, such that the visual element of the message entry location matches the defined active conversation (multiple visual cues are inherently included in the multiple messages discloses by Abernethy; 0016-0018, 0029-0030).

As per claim 9, Abernethy discloses the computer based method of claim 8, wherein Abernethy does not explicitly show that the visual element is a background color.

However, Chaar, in the same field of instant messaging endeavor, discloses that aspect of the invention (abstract, changing background color, 0021-0025). Therefore, it would have been obvious for one of ordinary skill in the art before the effective filing date of the invention to modify Abernethy in view of Chaar to arrive at the claimed invention for the same reasons set forth in claim 1, *supra*.

As per claim 10, Abernethy discloses the computer based method of claim 1 further comprising: providing the discussion interface at a second interface device, wherein the discussion interface displays the first message and the second message; receiving, at the second interface device, the first indication; displaying the first new message at the second interface device, wherein the displaying of the first new message incorporates a third visual cue shared solely by messages associated with the active conversation (multiple visual cues are inherently included in the multiple messages discloses by Abernethy; 0016-0018, 0029-0030).

As per claim 11, Abernethy discloses the computer based method of claim 10 wherein the first indication (208) is generated at the first interface device (UI 200) and is received at the second interface device (401) from one of a server or the first interface device (messaging server 450).

As per claim 12, Abernethy discloses the computer based method of claim 10 wherein Abernethy discloses the first visual cue and the third visual cue differ at each of the first

user interface device and the second user interface device (multiple visual cues are inherently included in the multiple messages discloses by Abernethy; 0016-0018, 0029-0030). Abernethy does not explicitly show that they are based on user preferences. However, Chaar, in the same field of instant messaging endeavor, discloses that aspect of the invention (abstract, user preferences, 0021-0025). Therefore, it would have been obvious for one of ordinary skill in the art before the effective filing date of the invention to modify Abernethy in view of Chaar to arrive at the claimed invention for the same reasons set forth in claim 1, *supra*.

As per claim 13, Abernethy discloses the computer based method of claim 1 further comprising: changing a visual element of the message entry location upon receipt of the first indication to match the first visual cue (all figures, 0016-0018, visual cue 208 associated with new message 206).

As per claim 14, Abernethy discloses the computer based method of claim 13, wherein Abernethy does not explicitly show that the visual element is a background color. However, Chaar, in the same field of instant messaging endeavor, discloses that aspect of the invention (abstract, changing background color, 0021-0025). Therefore, it would have been obvious for one of ordinary skill in the art before the effective filing date of the invention to modify Abernethy in view of Chaar to arrive at the claimed invention for the same reasons set forth in claim 1, *supra*.

As per claim 15, Abernethy discloses the computer based method of claim 1 wherein the first visual cue is in the form of proximity such that the first new message is displayed at a location within the discussion interface in closer proximity to the first message relative to proximity of the second message to the first message (all figures, location between message 202 and message 206, 0016-0018).

As per claim 16, Abernethy discloses a system for correlating conversations, the system comprising an interface device (401, display of computer) in communication with a computerized network (0022, network 428), the interface device comprising: a processor for implementing a software application on the interface device; a memory for storing the software application and for storing a plurality of messages in accordance with the software application (0022, inherent in the computer system memory 438); a transmission unit for transmitting messages to the computerized network (428); and a display (401), wherein the software application comprises instructions for: providing a discussion interface (UI 200) at the display (401) of the user interface device (401) for displaying messages stored in the memory (438); recording an indication that one of several conversations (202, Are you going to play poker tonight ?; 204, Were you the one that sent nasty e-mail to the CEO yesterday ?), each comprising one or more of the messages (202, 204) stored in memory (438), is an active conversation (202, 204); providing a message entry location for entering new messages (206), the message entry location visually associated with the discussion interface (UI 200); receiving at

least one new message (206) entered at the message entry location; transmitting, using the transmission unit, the at least one new message to the computerized network (428) incorporating an indication of which of the several conversations was the active conversation (202, Are you going to play poker tonight ?; 204, Were you the one that sent nasty e-mail to the CEO yesterday ?) at the time of entry of the new messages; and displaying, at the display, the at least one new message alongside at least one message associated with a conversation other than the active conversation (202, Are you going to play poker tonight ?; 204, Were you the one that sent nasty e-mail to the CEO yesterday ?; Travis: yes) and incorporating visual cues (208, indicator visual cue) that was the active conversation upon entry of the at least one new message (206).

Abernethy does not explicitly show that wherein the first visual cue is shared with any messages that are part of the conversation. However, Chaar, in the same field of instant messaging endeavor, discloses the process of a first visual cue (colors 110, one distinguishing session characteristic is a change in one of a color; abstract, 0021, 0025)) which is shared with any messages that are part of the conversation. Therefore, it would have been obvious for one of ordinary skill in the art before the effective filling date of the invention to modify Abernethy in view of Charr by including the process of first visual cue which is shared with any messages that are part of the conversation because doing so would have enable the system to provide an addition distinguishing feature for new thread of text as suggested by Charr (abstract, summary). One of ordinary skill in the art would have been motivated to combine the references to arrive

at the claimed invention so as to obtain a system capable of providing distinguishing feature for new session or new text in an instant messaging system.

As per claims 17-20, they do not teach or further define over the limitations recited in claims 1-16. Therefore, claims 17-20 are also rejected for the similar reasons set forth in claims 1-16, supra.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see attached PTO 892 for all the detailed information of the references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zarni Maung whose telephone number is (571) 272-3939. The Examiner can normally be reached on Monday-Friday from 7:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Christopher Parry can be reached at (571) 272-8328. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR for unpublished application Private PAIR only (see http://pair-direct.uspto.gov or the Electronic Business Center at 866-217-9197 (toll-free).

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/Zarni Maung/
Primary Examiner, Art Unit 2451

Notice of References Cited	Application/Control No. 14/972,919	Applicant(s)/Patent Under Reexamination MOISA, ADAM	
	Examiner Zarni Maung	Art Unit 2451	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
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	H	US-				
	I	US-				
	J	US-				
	K	US-				
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/972,919	12/17/2015	709	2451	CLDF 5064A

APPLICANTS
CTEXT TECHNOLOGY LLC, New York, NY;

INVENTORS
Adam Moisa, New York, NY;

**** CONTINUING DATA ***************************
This application is a CON of 14/581,178 12/23/2014 PAT 9246857
which claims benefit of 61/920,177 12/23/2013
and claims benefit of 62/000,220 05/19/2014
and claims benefit of 62/061,308 10/08/2014

**** FOREIGN APPLICATIONS ***************************

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Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ZARNI MAUNG/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	20	20	2

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UNITED STATES

TITLE
METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

FILING FEE RECEIVED		
730	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	Art Unit
	ZARNI MAUNG	2451

CPC- SEARCHED		
Symbol	Date	Examiner
H04L51/04; H04L69/329; H04L67/24; H04L51/066; H04L51/34; H04L51/046; H04L51/16; H04L29/06; H04L12/1822; H04L51/36; H04L67/22; H04L51/12; H04L51/24; H04L12/1813; H04L29/08; H04L41/22; H04L51/043; H04L5	6/28/17	ZM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner
H04L 51/04	6/29/17	ZM

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	203,223-229,250	6/28/17	ZM

SEARCH NOTES		
Search Notes	Date	Examiner
East search, NPL searches. East search results attached.	6/28/17	ZM

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14972919	MOISA, ADAM
	Examiner	**Art Unit**
	ZARNI MAUNG	2451

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

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/29/2017								
	1	✓								
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	20	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1167776	(IM or (instant near4 messag$3)) or chat	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/06/29 11:14
L2	197251	(visual near5 cue$2) or (color near6 (indicator background))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/06/29 11:14
L3	437	1 with 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/06/29 11:14
L4	339	interfac$4 and 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/06/29 11:15
L5	6213	active near9 1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/06/29 11:15
L6	97	4 and 5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/06/29 11:15

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(Not for submission under 37 CFR 1.99)

Application Number	14972919 - GAU: 2451
Filing Date	
First Named Inventor	Adam Moisa
Art Unit	
Examiner Name	Zarni Maung
Attorney Docket Number	CLDF 5064A

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
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /Z.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14972919 - GAU: 2451
	Filing Date	
	First Named Inventor	Adam Moisa
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CLDF 5064A

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100115426	A1	2010-05-06	LIU, et al	
	2	20030093363	A1	2003-05-13	Peter Richard P. Horsfall, et al	
	3	20140040784	A1	2014-02-06	Reza Behforooz, et al	
	4	20050138552	A1	2005-06-23	Gina D. Venolia	
	5	20100125791	A1	2010-05-20	Thomas E. Katis, et al	
	6	20130042187	A1	2013-02-14	Piotr Konrad TYSOWSKI	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14972919 - GAU: 2451
	Filing Date	
	First Named Inventor	Adam Moisa
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CLDF 5064A

	7	20150026283	A1	2015-01-22	Charles A. Carey, et al	
	8	20080177994	A1	2008-07-24	Yaron Mayer	
	9	20130198296	A1	2013-08-01	Warren ROY, et al	
	10	20130090138	A1	2013-04-11	Charles A. Carey, et al	
	11	20100023586	A1	2010-01-28	Frederic Bauchot, et al	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]i	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	2013113093	WO	A1	2013-08-08	GLOBAL RELAY COMMUNICATIONS INC.		
	2	2011005641	WO	A2	2011-01-13	T-MOBILE USA, INC.		
	3	2013116848	WO	A2	2013-08-08	APPLE INC.		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14972919 - GAU: 2451
	Filing Date	
	First Named Inventor	Adam Moisa
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CLDF 5064A

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	International Search Report with Written Opinion, mailed May 21, 2014, for corresponding International Application No. PCT/US2014/072149	

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EXAMINER SIGNATURE

Examiner Signature	/ZARNI MAUNG/	Date Considered	06/28/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14972919 - GAU: 2451
	Filing Date	
	First Named Inventor	Adam Moisa
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CLDF 5064A

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	/Harris A. Wolin/	Date (YYYY-MM-DD)	2015-12-17
Name/Print	Harris A. Wolin	Registration Number	39432

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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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 the Freedom of Information Act requires disclosure of these record s.

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 inspections 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.

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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A

CONFIRMATION NO. 7438

61650
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

PUBLICATION NOTICE



Title:METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

Publication No.US-2016-0149847-A1
Publication Date:05/26/2016

NOTICE OF PUBLICATION OF APPLICATION

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.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, 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: 14/972,919

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
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).			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	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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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
14/972,919	12/17/2015	2447	730	CLDF 5064A	20	2

CONFIRMATION NO. 7438

UPDATED FILING RECEIPT

61650
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

OC000000080711730

Date Mailed: 02/19/2016

Receipt is acknowledged of this non-provisional 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 APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Adam Moisa, New York, NY;

Applicant(s)

CTEXT TECHNOLOGY LLC, New York, NY;

Power of Attorney: The patent practitioners associated with Customer Number 61650

Domestic Priority data as claimed by applicant

This application is a CON of 14/581,178 12/23/2014 PAT 9246857
which claims benefit of 61/920,177 12/23/2013
and claims benefit of 62/000,220 05/19/2014
and claims benefit of 62/061,308 10/08/2014

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 01/04/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/972,919**

Projected Publication Date: 05/26/2016

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

Preliminary Class

709

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A

CONFIRMATION NO. 7438

61650
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

FORMALITIES LETTER

OC000000079689889

Date Mailed: 01/05/2016

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The application contains drawings and the specification contains a brief description of the drawings. However, the specification does not contain a brief description of the several views of the drawings as required by 37 CFR 1.74 and 37 CFR 1.77(b)(7) and/or a drawing(s) has not been labeled in accordance with 37 CFR 1.84(u)(1). If each figure is not labeled "Fig." with a consecutive Arabic numeral (1, 2, etc.) or an Arabic numeral and capital letter in the English alphabet (A, B, etc.), then the drawing(s) must be relabeled in accordance with 37 CFR 1.84(u)(1). In addition, if the brief description of the several views of the drawings does not refer to the figure(s) as properly labeled, then the specification must be amended to correspond to the figure(s) as properly labeled and a substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

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P.O. Box 1450
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For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

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**.

/tlulu/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: CTEXT Technology LLC	Examiner: N/A
Serial No.: 14/972,919	Art Unit: 2447
Filing Date: December 17, 2015	Confirmation No.: 7438
For: **METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN A MESSAGING ENVIRONMENT**	Attorney Docket No.: CLDF 5064A

February 8, 2016

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

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Sir:

A Notice to File Corrected Application Papers was mailed on January 5, 2016, in which an amendment to the specification was required because the specification did not contain a brief description of the several views of the drawings. Responsive thereto, applicant has amended the drawing sheet to match the brief description of the drawings. No new matter has been added.

As set forth in 37 CFR 1.121, submitted herewith is a replacement drawing sheet.

Respectfully submitted,

MYERS WOLIN, LLC

Harris A. Wolin
Reg. No. 39,432

CUSTOMER NUMBER 61650
PHONE: (973) 401-7159
FAX: (866) 864-3947

8/20

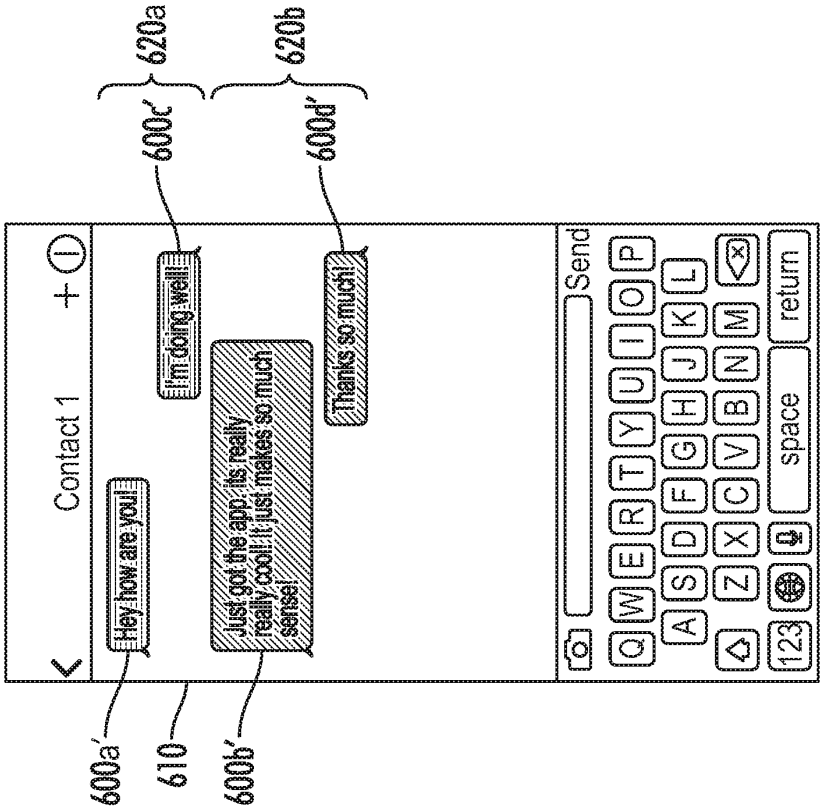


FIG. 5B

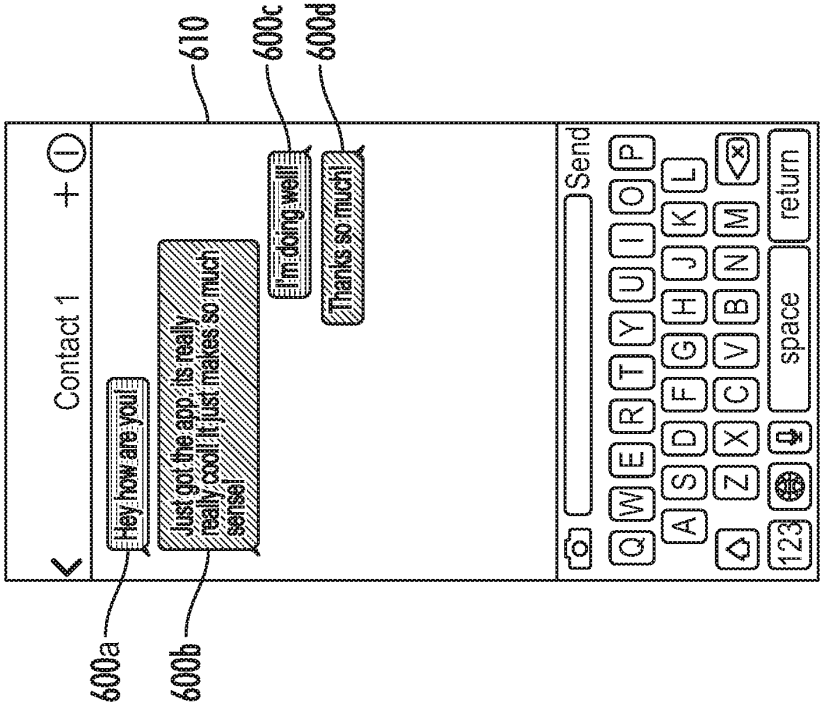


FIG. 5A

Electronic Acknowledgement Receipt	
EFS ID:	24849363
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Customer Number:	61650
Filer:	Harris Wolin
Filer Authorized By:	
Attorney Docket Number:	CLDF 5064A
Receipt Date:	08-FEB-2016
Filing Date:	17-DEC-2015
Time Stamp:	16:57:25
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	Applicant Response to Pre-Exam Formalities Notice	cldf_5064a_20160105_ofr_nt_or_app_pa_to_submit.pdf	77414 120f80f93c0890d9566719d7acd0498eede e55b3	no	2

Warnings:
Information:

2	Applicant Response to Pre-Exam Formalities Notice	cldf_5064a_20160105_ofr_nt_cr_app_pa_resp.pdf	83712 d1d2decd8faa61f9cbcde6ac73a73e20b5b5fa31	no	1
Warnings:					
Information:					
3	Drawings-only black and white line drawings	cldf_5064a_20160105_ofr_nt_cr_app_pa_resp_dwg.pdf	48358 81f476342ee911b14aba95de564d983e002b1f00	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	209484		

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 APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/972,919

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 210 =	0.00			
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).			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	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/972,919	12/17/2015	Adam Moisa	CLDF 5064A

CONFIRMATION NO. 7438

61650
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

FORMALITIES LETTER

OC000000079689889

Date Mailed: 01/05/2016

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The application contains drawings and the specification contains a brief description of the drawings. However, the specification does not contain a brief description of the several views of the drawings as required by 37 CFR 1.74 and 37 CFR 1.77(b)(7) and/or a drawing(s) has not been labeled in accordance with 37 CFR 1.84(u)(1). If each figure is not labeled "Fig." with a consecutive Arabic numeral (1, 2, etc.) or an Arabic numeral and capital letter in the English alphabet (A, B, etc.), then the drawing(s) must be relabeled in accordance with 37 CFR 1.84(u)(1). In addition, if the brief description of the several views of the drawings does not refer to the figure(s) as properly labeled, then the specification must be amended to correspond to the figure(s) as properly labeled and a substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice". https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

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**.

/tlulu/

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/972,919	12/17/2015	2447	730	CLDF 5064A	20	2

CONFIRMATION NO. 7438

FILING RECEIPT

61650
MYERS WOLIN, LLC
100 HEADQUARTERS PLAZA
North Tower, 6th Floor
MORRISTOWN, NJ 07960-6834

OC000000079889888

Date Mailed: 01/05/2016

Receipt is acknowledged of this non-provisional 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 APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Adam Moisa, New York, NY;

Applicant(s)

CTEXT TECHNOLOGY LLC, New York, NY;

Power of Attorney: The patent practitioners associated with Customer Number 61650

Domestic Priority data as claimed by applicant

This application is a CON of 14/581,178 12/23/2014
which claims benefit of 61/920,177 12/23/2013
and claims benefit of 62/000,220 05/19/2014
and claims benefit of 62/061,308 10/08/2014

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 01/04/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/972,919**

Projected Publication Date: To Be Determined - pending completion of Corrected Papers

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT

Preliminary Class

709

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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OF THE PEOPLE'S REPUBLIC OF CHINA

证　明

本证明之附件是向本局提交的下列专利申请文件副本。

申　　请　　号：201510064891.1
申　请　类　型：发明专利
发明 创造 名称：具有自动对准的鸟瞰视野监测系统
申　　请　　日：2015年02月06日
申　　请　　人：德尔福电子(苏州)有限公司
发明人或设计人：于萌萌、马光林、蒋如意

局长
申长雨

2015 年 09 月 15 日

APPLE EXHIBIT 1002

2015100648911

权 利 要 求 书

1. 一种环绕视野监测系统（10），配置为合成车辆（12）周围区域（16）的鸟瞰视野图像（14），所述系统（10）包括：

摄像头（18），所述摄像头被配置为捕捉车辆（12）周围视野（22）的当前图像（20）并输出指示所述当前图像（20）的信号（24），其中所述当前图像（20）包括所述车辆（12）的特征（26）；和

控制器（30），所述控制器配置为接收所述信号（24）、将所述当前图像（20）和来自所述系统（10）的初始化校准的参考图像（32）比较，其中所述参考图像（32）包括所述特征（26）、并且确定所述当前图像（20）的修正表（34）从而将所述当前图像（20）中的所述特征（26）与所述参考图像（32）中的所述特征（26）对准。

2. 根据权利要求 1 所述的系统（10），其特征在于，所述特征（26）是所述车辆（12）的边缘（36）。

3. 如权利要求 1 所述的系统（10），其特征在于，所述修正表（34）包括水平旋转角度（40）、偏转角度（42）、以及滚转角度（44）。

4. 如权利要求 1 所述的系统（10），其特征在于，所述控制器（30）配置为周期性地对准所述当前图像（20）。

5. 如权利要求 1 所述的系统（10），其特征在于，所述控制器（30）配置为仅当所述车辆（12）在移动且环境光亮度大于照明阈值时执行所述初始化校准。

APPLE EXHIBIT 1002

2015100648911

说　　明　　书

具有自动对准的鸟瞰视野监测系统

发明领域

本申请公开了一种具有自动对准的鸟瞰视野监测系统。本公开大体上涉及配置为合成车辆周围区域的鸟瞰视野图像的系统，且更特定地，涉及使多个摄像头对准的方式，该方式使用出现在来自摄像头的图像内的车辆特征作为对准引导来使得系统的摄像头对准。

背景技术

配置为合成车辆周围区域的鸟瞰视野图像的环绕视野监测或鸟瞰视野图像系统是已知的。这样的系统一般具有多个摄像头，且来自这些摄像头的每一个摄像头的图像被组合或“缝合”在一起来形成或合成鸟瞰视野图像。为了能形成鸟瞰视野图像且在鸟瞰视野图像中没有令人不快的不连续，每一个摄像头需要被物理地对准，和/或来自每一个摄像头的图像需要被电子地对准。对准过程可包括安装前摄像头的工厂对准，和/或包括当系统被首次安装在车辆上时该系统的初始化校准。这个初始化校准可采用已知视觉目标的排布来帮助该初始化校准。

在系统的寿命期间，例如由于对于摄像头的无意中的损害，可需要替换一个或多个摄像头。该替换可能引入摄像头的不对准，该不对准导致鸟瞰视野图像中不期望的不连续。进一步，车辆振动和/或暴露于温度极端状况可能引入摄像头的不期望的不对准。对于车辆拥有者而言，必须雇用有资格的技术人员来重新对准摄像头是不方便的且昂贵的，并且如果仅在温度极端状况下发生这样的不对准，则这种重新对准对于修正问题可能并非是有效的。需要的是让系统周期性地自动检查来自摄像头的图像对准的方式。

发明内容

根据一个实施例，提供了配置为合成车辆周围区域的鸟瞰视野图像

APPLE EXHIBIT 1002

的环绕视野监测系统。该系统包括摄像头和控制器。摄像头被配置为捕捉车辆周围视野的当前图像并输出指示该当前图像的信号。当前图像包括车辆的特征。控制器被配置为接收该信号、将当前图像与来自系统的初始化校准的参考图像进行比较。参考图像也包括该特征。控制器进一步配置为确定当前图像的修正表来将当前图像中的该特征与参考图像中的该特征进行对准。

在阅读优选实施例的下列详细描述后，进一步的特征和优势将更清楚地呈现出，这些优选实施例仅作为非限定性的例子且结合附图而给出。

附图简述

现在将参考附图借助示例来描述本发明，在附图中：

图 1 是根据一个实施例的安装在车辆上的环绕视野监测系统的俯视图；

图 2 是根据一个实施例的图 1 的系统的示意图；

图 3 是根据一个实施例，当将系统的摄像头对准时，由图 1 的系统提供的鸟瞰视野图像；

图 4 是根据一个实施例，当没有将系统的摄像头对准时，由图 1 的系统提供的鸟瞰视野图像；

图 5A 是根据一个实施例的来自图 1 的系统的摄像头的当前图像；

图 5B 是根据一个实施例的来自图 1 的系统的摄像头的参考图像；

图 6A 是根据一个实施例的图 5A 的图像中车辆特征的表示；

图 6B 是根据一个实施例的图 5B 的图像中车辆特征的表示；以及

图 6C 是根据一个实施例的图 6A 和图 6B 的覆盖图的表示。

详细描述

图 1 示出安装在车辆 12 上的环绕视野监测系统（以下称为系统 10）的非限制性示例。一般而言，系统 10 配置为合成车辆 12 周围区域 16 的鸟瞰视野图像 14（图 3）。如在以下描述中将变得明显地，此处描述的系统 10 从安装为具有对于车辆 12 周围的不同视野的多个摄像头捕捉图像，且将这些图像电子地组合或“缝合在一起”以形成或合成鸟瞰视野图像 14。此处描述的系统

10 的优势在于使得多个图像的对准自动化。对准是必须的，使得鸟瞰视野图像 14 不具有令人不快的不连续。有利地，如果一个或多个摄像头变得不对准，车辆 12 不需要送去技术人员那里进行摄像头对准。

系统 10 包括摄像头 18。以示例的方式而非限制，摄像头 18 可以是左视野摄像头 18L、右视野摄像头 18R、前视野摄像头 18F、和/或后视野摄像头 18B。此处描述的系统 10 的非限制性示例示出四个摄像头，但是可构想具有多于或少于四个摄像头的系统。在这个实例中，示出四个摄像头，因为这样看起来在成本和性能之间具有良好平衡，其中如果使用多于四个摄像头则成本可不期望地增加，且如果使用少于四个摄像头，则性能（即，鸟瞰视野图像 14 的质量）可不期望地减少。如此处所使用地，摄像头 18 可指所示摄像头中的任何一个和/或全部。如在之后的描述中将变得明显地，此处提供的非限制性示例的焦点一般涉及左视野摄像头 18L。然而，对于摄像头 18 的引用并不被解释为限制到左视野摄像头 18L。

摄像头 18 配置为捕捉车辆 12 周围的视野 22 的当前图像 20（图 5A）。由于此处描述的系统 10 的非限制性示例具有四个摄像头，视野 22 可包括左视野 22L、右视野 22R、前视野 22F、和后视野 22B。作为摄像头 18，视野 22 可指所示视野中的任何一个和/或全部。如在之后的描述中将变得明显地，此处提供的非限制性示例的焦点一般涉及左视野 22L。然而，对于视野 22 的引用并不被解释为限制到左视野 22L。一般而言，左视野 22L、右视野 22R、前视野 22F、和后视野 22B 覆盖或构成区域 16。

图 2 进一步示出系统 10 的非限制性细节。摄像头 18 一般配置为输出指示当前图像 20（图 5A）的信号 24。视野 22 可包括车辆 12 的一部分，因此当前图像 20 可包括车辆 12 的特征 26（图 5A）的图像，诸如车辆 12 的车体边界或边缘。

继续参看图 2，系统 10 可包括配置为接收信号 24 的控制器 30。控制器 30 可包括诸如微处理器的处理器(未示出)或其它控制电路，例如模拟和/或数字控制电路，包括本领域内技术人员熟知的用于处理数据的专用集成电路(ASIC)。控制器 30 可包括存储器（未示出），包括非易失性存储器，例如电可擦除可编程只读存储器(EEPROM)，用以存储一个或多个例程、阈值和捕捉的

数据。可由处理器执行一个或多个例程从而执行步骤用于确定来自此处描述的各摄像头的图像是否被对准。

特别地，控制器 30 配置为将当前图像 20（图 5A）与来自系统 10 的初始化校准的参考图像 32 进行比较。如此处所使用地，术语“初始化校准”被用于指在系统 10 被安装到车辆后执行的校准过程，以使得特征 236 在参考图像 32 中的位置可被存储，如果有必要，将来被用于对准摄像头 18。由此，系统 10 的初始化校准有别于在系统 10 安装到车辆上之前的系统 10 的工厂校准，且有别于依赖于将几何图案或已知目标放置在车辆 12 周围以帮助摄像头对准的任何校准过程。由于当前图像 20 和参考图像 32 两者均包括特征 26，特征 26 在各图像中的位置可被用于确定由信号 24 指示的当前图像 20 的修正表 34（图 2）从而将当前图像 20 中的特征 26 与参考图像 32 中的特征 26 对准，修正表 34 一般存储在控制器 30 内。

图 6A 和 6B 示出分别与图 5A 和 5B 中所示的图像对应的当前图像 20 和参考图像 32 的经图像处理的版本的非限制性示例，其中车辆 12 的边缘 36 被定义在每一个图像中。图像处理使用已知算法来确定车辆 12 的当前边缘 36A 在当前图像 20 中的位置，以及参考边缘 36B 在参考图像 32 中的位置。要注意，仅为了在当前边缘 36A 和参考边缘 36B 两者均被示出在组合图像 38（图 6C）中时将当前边缘 36A 和参考边缘 36B 区分开的目的，用虚线表示当前边缘 36A 在图 6A 中的图示。

图 6C 进一步示出可存储在修正表 34 内并被施加至当前图像 20 从而将当前图像 20 与参考图像 32 对准的各种方向性调整或方向性修正。该修正表可包括，但不限于，用于做出左/右方向调整的水平旋转（pan）角度 40、用于做出上/下方向调整的偏转（yaw）角度 42、以及用于做出顺时针/逆时针调整的滚转（roll）角度 44。当这些调整应用于指示当前图像 20 的信号 24 时，当前边缘 36A 可被移动以覆盖参考边缘，以使得摄像头 18（在该示例中是左视野摄像头 18L）与其他摄像头（例如右视野摄像头 18R、前视野摄像头 18F、和后视野摄像头 18B）合适地对准。

图 4 示出其中摄像头 18（如，左视野摄像头 18L）没有被合适地对准的失准视图 48 的非限制性示例。图 4 对应于如果图 5A 中所示的当前图像 20 没

有被修正或对准则将被提供的鸟瞰视野图像。图 3 示出在图 5A 中所示的当前图像 20 被对准以使得当前图像 20 中的边缘 36（即，当前边缘 36A）被修正或与参考图像 32 中的参考边缘 36B 对准后将会被提供的鸟瞰视野图像的示例。

由于摄像头 18 可能在任何时间因振动或温度极端状况而变得失准，如果控制器 30 配置为周期性地（例如每分钟一次）对准当前图像，则会是有利的。当系统 10 在例如较冷温度（如，<0°C）下被合适地对准但是在升高的温度下（如 <30°C）变得失准时，周期性对准会特别有用。

区域 16 可包括在车辆 12 下方的表面（如，地面），其具有色彩和/或照明，这使得难以将地面与车辆 12 本体区分开。由此，如果控制器 30 配置为仅在车辆 12（例如以大于每小时 30 公里(30kph)的速度）移动时执行初始化校准和/或对准过程，则会是有利的。期望的是，当车辆 12 以足够速度移动时，作为车辆 12 底下的路面的视野 22 的部分将在外观上发生变化。由此，如图像处理领域的技术人员了解地，作为车辆 12 的视野 22 的未变化的部分将更容易与路面区分开。

如果控制器 30 配置为仅在环境光亮度大于照明阈值时执行初始化校准和/或对准过程，也会是有利的。以示例的方式，照明阈值可对应于多云天的中午。如果使用这个照明阈值，则当例如来自街灯的人工照明可使得控制器 30 难以确定边缘 36 的位置时的晚上，将不执行对准。

因此，提供了配置为合成车辆 12 周围区域的鸟瞰视野图像 14 的环绕视野监测系统（系统 10）。系统 10 有利地利用所捕捉图像中的车辆 12 的特征来调整系统摄像头的对准。基于特定特征在大约在作出调整时的时间所捕捉的当前图像 20 中的位置与特定特征在大约在系统 10 初始地安装到车辆 12 上时的时间所捕捉的参考图像中的位置之间的比较，来做出该调整或对准。由于可在背景中执行这样的对准，这样的对准方案是有利的，以使得倘若发生失准时，车辆拥有者不需要雇佣有经验的技术人员来对准系统。进一步，该系统可补偿由于温度变化引起的对准中的变化。

尽管已根据其优选实施例对本发明进行了描述，然而本发明不旨在被如此限制，而是仅受随附权利要求书中给出的范围限制。

2015100648911

说 明 书 附 图

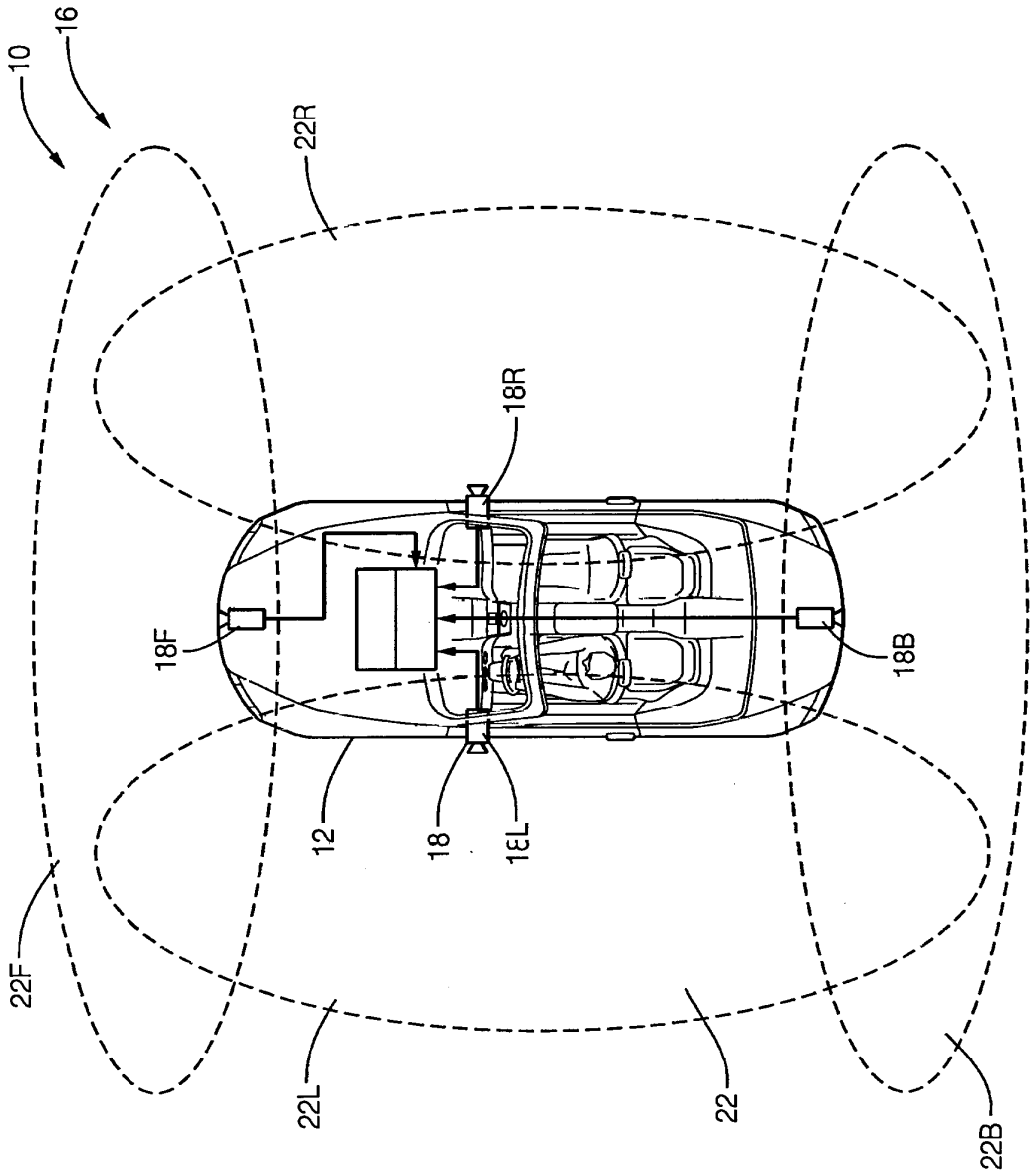


图 1

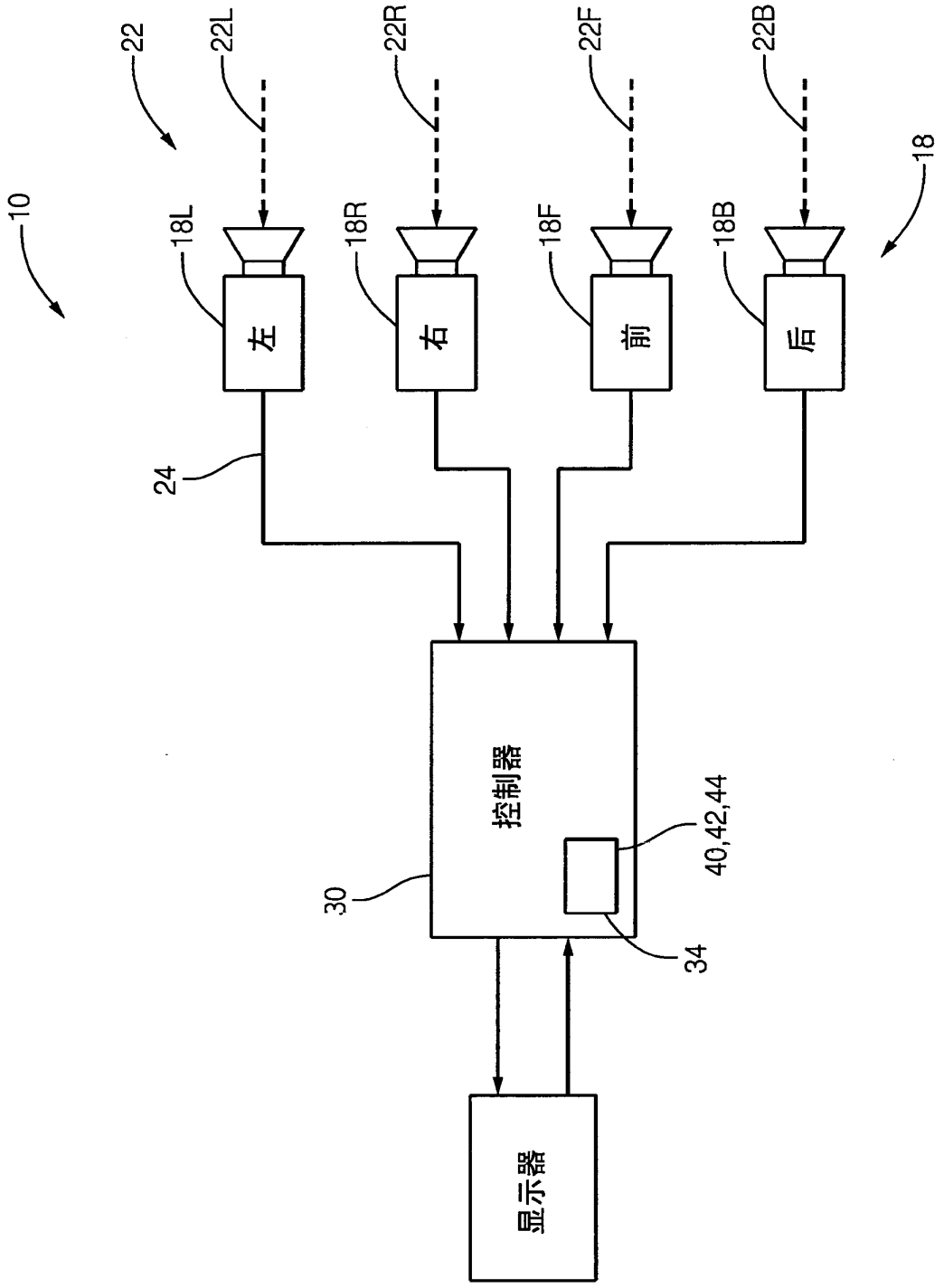

10
22
22L
22R
22F
22B
18
18L
18R
18F
18B
左
右
前
后
24
控制器
30
40,42,44
34
显示器

图 2

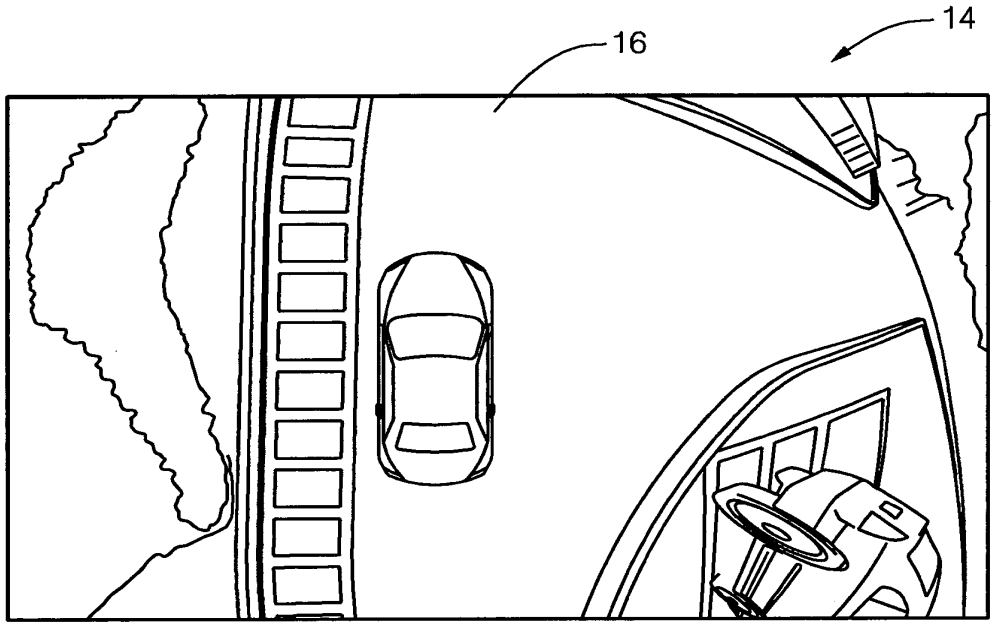


图 3

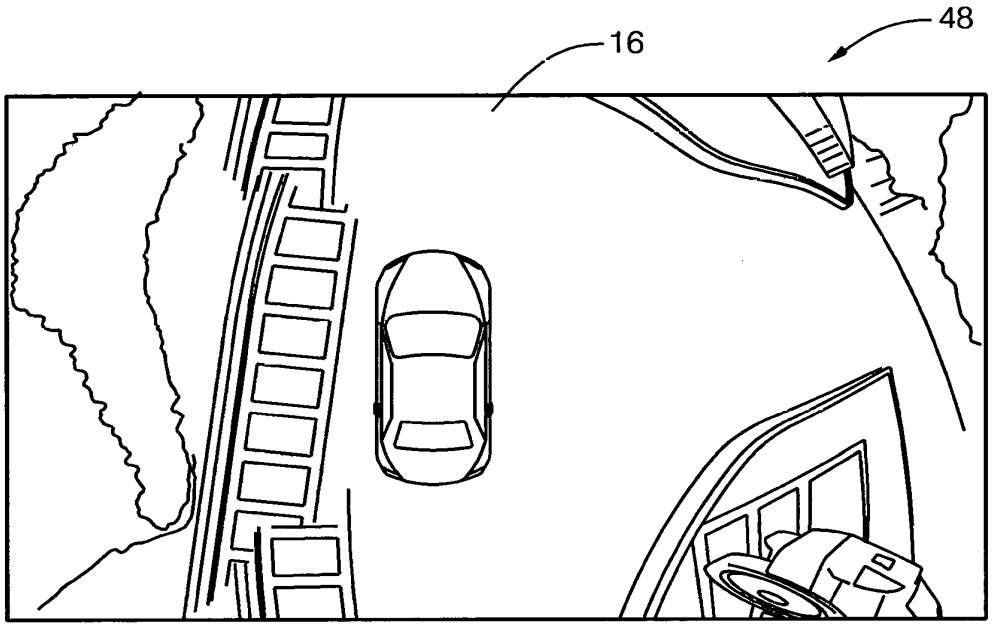


图 4

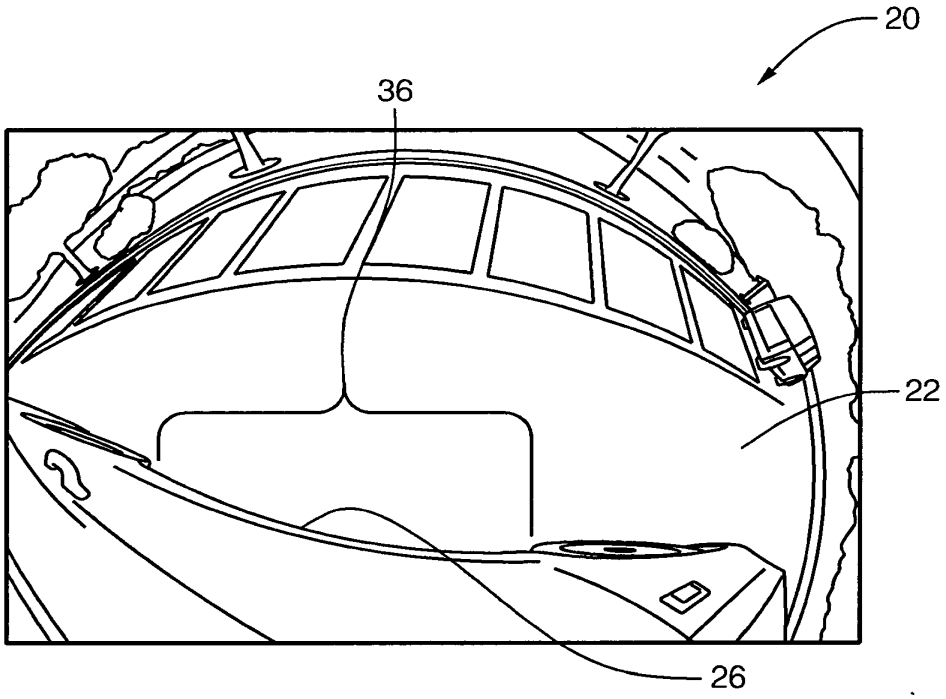


图 5A

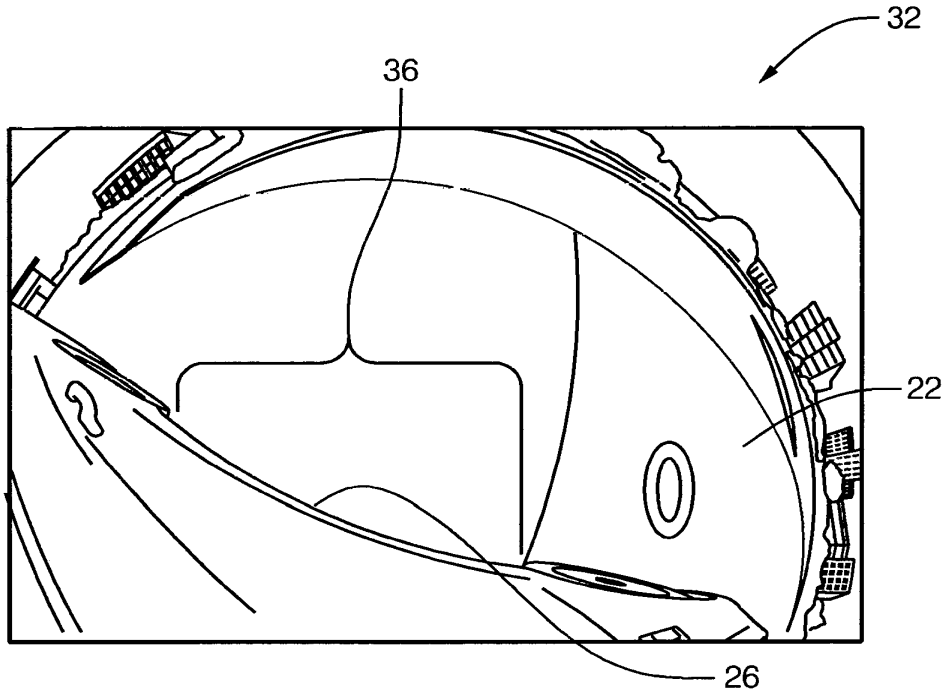


图 5B

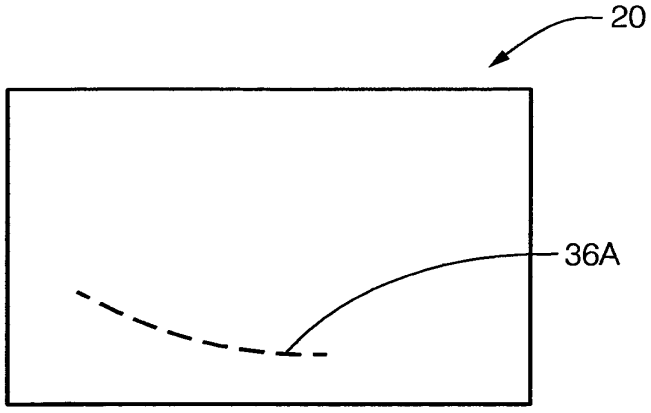


图 6A

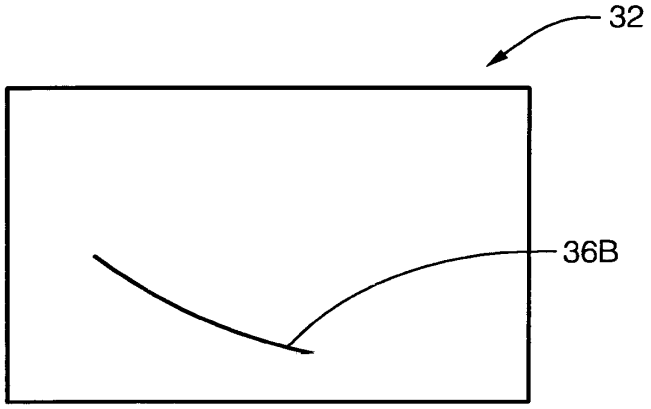


图 6B

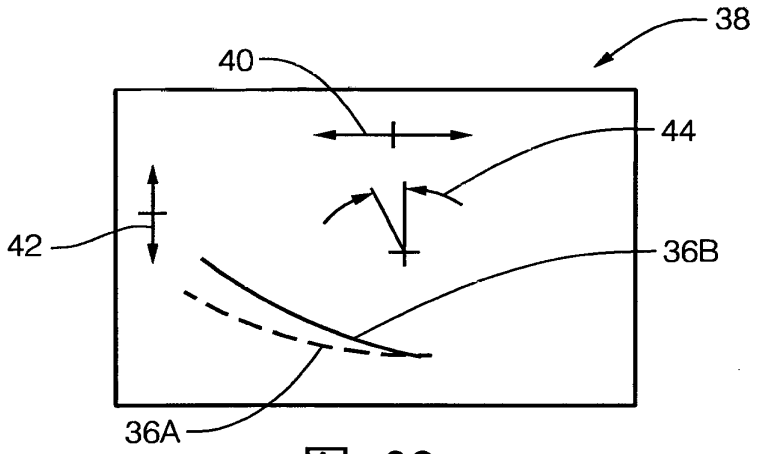


图 6C

OPAP AKIMA-16
DEC 30 2015
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.:	14/972,919
Inventor(s):	Yu, et al.
Title:	Birds-Eye-View Monitoring System With Auto Alignment
Filed:	December 17, 2015
Confirmation No.:	6202
Art Unit:	
Docket No.:	DP-321774

TRANSMITTAL LETTER

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

Dear Sir:

Enclosed please find a certified copy of the priority document for the subject application. This application claims priority to China Application No. 201510064891.1, filed February 6, 2015.

Please charge the fee, if any, to Deposit Account No. 50-0831.

Respectfully submitted,

/Lawrence D. Hazelton/
Lawrence D. Hazelton 64717
Delphi Technologies, Inc.
(248) 813-3112

PTO/AIA/80 (07-12)
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I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 61650

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

■ The address associated with Customer Number: 61650

OR

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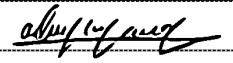
Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address: CTEXT TECHNOLOGY LLC
228 Park Avenue S.
No. 90348

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	12/22/14
Name	Adam Moisa	Telephone	7189744134
Title	CEO		

This collection of information is required by 37 CFR 1.31, 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.**

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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.
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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.
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: CTEXT TECHNOLOGY LLC

Application No./Patent No.: _____ Filed/Issue Date: _____

Titled: METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN A MESSAGING ENVIRONMENT

CTEXT TECHNOLOGY LLC, a limited liability company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

   1. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

   2. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Harris A. Wolin/	December 17, 2015
Signature	Date
Harris A. Wolin	39432
Printed or Typed Name	Title or Registration Number

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UTILITY PATENT APPLICATION TRANSMITTAL

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

Attorney Docket No.	CLDF 5064A
First Named Inventor	Adam Moisa
Title	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN A MESSAGING
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. ☑ **Applicant asserts small entity status.** See 37 CFR 1.27
3. ☐ **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. ☑ **Specification** [*Total Pages* 28] Both the claims and abstract must start on a new page. *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. ☑ **Drawing(s)** (35 U.S.C. 113) [*Total Sheets* 20]
6. **Inventor's Oath or Declaration** [*Total Pages* 2] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. ☐ Newly executed (original or copy)
   b. ☑ A copy from a prior application (37 CFR 1.63(d))
7. ☑ **Application Data Sheet** ** See note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. **CD-ROM or CD-R** in duplicate, large table, or Computer Program (*Appendix*)
   ☐ Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** (*if applicable, items a. – c. are required*)
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

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ACCOMPANYING APPLICATION PAPERS

10. ☐ **Assignment Papers** (cover sheet & document(s)) Name of Assignee _____
11. ☑ **37 CFR 3.73(c) Statement** (*when there is an assignee*) ☑ **Power of Attorney**
12. ☐ **English Translation Document** (*if applicable*)
13. ☑ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☑ Copies of citations attached
14. ☐ **Preliminary Amendment**
15. ☐ **Return Receipt Postcard** (*MPEP § 503*) (*Should be specifically itemized*)
16. ☐ **Certified Copy of Priority Document(s)** (*if foreign priority is claimed*)
17. ☐ **Nonpublication Request** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. ☐ **Other:** _____

*Note: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

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☑ The address associated with Customer Number: 61650 **OR** ☐ Correspondence address below

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Signature	/Harris A. Wolin/	Date	December 17, 2015
Name (Print/Type)	Harris A. Wolin	Registration No. (Attorney/Agent)	39432

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First Named Inventor	Adam Moisa
Art Unit	
Examiner Name	
Attorney Docket Number	CLDF 5064A

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	1	8543927	B1	2013-09-24	Joanne McKinley, et al	
	2	7885641	B2	2011-02-08	Piotr Konrad Tysowski	
	3	8751572	B1	2014-06-10	Reza Behforooz, et al	
	4	8725813	B2	2014-05-13	Selvaraj Nalliah, et al	
	5	7475110	B2	2009-01-06	Dustin C. Kirkland, et al	
	6	7200635	B2	2007-04-03	Emmanuel Yashchin, et al	
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	Art Unit	
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	9	8473553	B2	2013-06-25	Michelle McDevitt, et al	
	10	8024412	B2	2011-09-20	Robert E. McCann, et al	
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	2	20030093363	A1	2003-05-13	Peter Richard P. Horsfall, et al	
	3	20140040784	A1	2014-02-06	Reza Behforooz, et al	
	4	20050138552	A1	2005-06-23	Gina D. Venolia	
	5	20100125791	A1	2010-05-20	Thomas E. Katis, et al	
	6	20130042187	A1	2013-02-14	Piotr Konrad TYSOWSKI	

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	First Named Inventor	Adam Moisa
	Art Unit	
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	Attorney Docket Number	CLDF 5064A

	7	20150026283	A1	2015-01-22	Charles A. Carey, et al	
	8	20080177994	A1	2008-07-24	Yaron Mayer	
	9	20130198296	A1	2013-08-01	Warren ROY, et al	
	10	20130090138	A1	2013-04-11	Charles A. Carey, et al	
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	2	2011005641	WO	A2	2011-01-13	T-MOBILE USA, INC.		
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OR

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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.

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Name/Print	Harris A. Wolin	Registration Number	39432

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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 August 2013 (08.08.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/113093 A1

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H04L 12/58 (2006.01) *H04L 12/24* (2006.01)
G06Q 10/10 (2012.01) *H04L 12/26* (2006.01)
H04L 12/18 (2006.01)

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30 January 2013 (30.01.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/363,351 31 January 2012 (31.01.2012) US

(71) Applicant: **GLOBAL RELAY COMMUNICATIONS INC.** [—/CA]; 220 Cambie Street, Suite 270, Vancouver, British Columbia V6B 2M9 (CA).

(72) Inventors: **ROY, Warren**; c/o Global Relay Communications Inc., 220 Cambie Street, Suite 270, Vancouver, British Columbia V6B 2M9 (CA). **QUON, Colin Shong Chin**; c/o Global Relay Communications Inc., 220 Cambie Street, Suite 270, Vancouver, British Columbia V6B 2M9 (CA). **SAMPLE, Michael Edward**; c/o Global Relay Communications Inc., 220 Cambie Street, Suite 270, Vancouver, British Columbia V6B 2M9 (CA).

(74) Agents: **NAKANO, Robert** et al.; McCarthy Tétrault LLP, Box 48, Suite 5300, Toronto Dominion Bank Tower, Toronto, Ontario M5K 1E6 (CA).

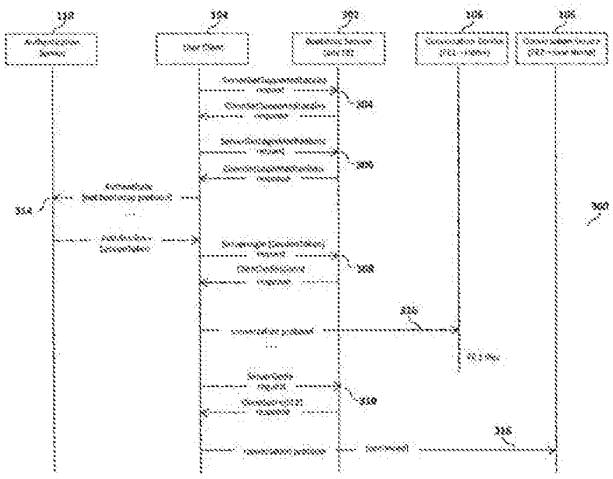
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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR PROCESSING MESSAGES IN A MESSAGING SERVICE

Figure 3



(57) Abstract: A method, system and server for processing messages sent from a client in a network are provided. The method comprises: for a message for a conversation to be transmitted from a client associated with a first user account associated with the network to a set of user accounts, upon activation of a command to send the message, sending to the set of accounts a request message requesting acceptance of the conversation; receiving replies from the set of accounts to the request message; and sending the message for the conversation to a first subset of accounts associated with the set of accounts that generated an acceptance message for the request message and updating a message log associated with the conversation to indicate that the first subset of accounts has accepted the conversation as participants in the conversation. A method, system and server for message archiving are also provided.

WO 2013/113093 A1

Published:

— with international search report (Art. 21(3))

System and Method for Processing Messages in a Messaging Service

Field of the Disclosure

[0001] The present disclosure relates to the field of messaging systems and methods. In particular, the disclosure relates to one-to-one, multi-user, broadcast and persistent chat messaging systems and methods having tracking and records facilities useful in managing communications in regulated industries, such as financial services industries.

Description of the Background

[0002] Business enterprises use real-time messaging communication systems to collaborate with partners and connect with clients. Enterprises often use various different consumer services, such as MSN, Yahoo, AIM/ICQ and Skype (all trade-marks), as part of their network messaging tools. While use of consumer-oriented technologies in an enterprise can lead to substantial productivity gains and certain cost savings, such technologies do not provide adequate controls that comply with regulatory requirements.

[0003] Larger enterprises typically deploy integrated solutions using commercial messaging platforms, such as Microsoft Lync/OCS/LCS, IBM/Lotus Sametime and Cisco Quad (all trade-marks), and hosted services, such as Salesforce Chatter (trade-mark). These communications platforms are costly and highly complex to integrate with existing systems and processes. With such solutions, user communications are typically confined to be within the enterprise.

[0004] Regulatory requirements for electronic messaging involve record keeping, messaging supervision, and support for audits and eDiscovery. In the United States, the Security Exchange Commission (SEC) has several rules governing books and records that are to be maintained by advisors, brokers and others, including Rule 204-2, Rules 17a-3 and 17a-4, Rule 3110 and Rule 206(4)-7. The Financial Industry Regulatory Association (FINRA) has rules as well, including Regulatory Notice 07-59, covering messaging supervision for broker-dealers. Current message systems have inherent deficiencies in meeting regulatory compliance requirements.

Summary of the Disclosure

[0005] In a first aspect of an embodiment for this disclosure, a method for processing messages sent from a client in a network is provided. The method comprises: for a message for a conversation to be transmitted from a client associated with a first user account of a plurality of user accounts associated with the network to a set of user accounts of the plurality of

user accounts, upon activation of a command to send the message, sending to the set of user accounts a request message requesting acceptance of the conversation; receiving replies from the set of user accounts to the request message; and providing the message for the conversation to a first subset of accounts associated with the set of user accounts that generated an acceptance message for the request message and updating a message log associated with the conversation to indicate that the first subset of accounts has accepted the conversation as participants in the conversation.

[0006] The method may further comprise not providing the message to a second subset of accounts associated with the set of user accounts that refused or did not respond to the request message and updating the conversation log to indicate that the second subset of accounts has not been sent message for the conversation.

[0007] The method may further comprise associating a message thread with the message for the conversation and the participants, where responses to the message from the participants are included in the message thread.

[0008] The method may further comprise closing the message thread when one of the participants indicates that it is no longer participating in the message thread; and creating a new message thread for a set of remaining participants in the conversation.

[0009] The method may further comprise initiating a new message thread associated with the conversation when one participant of the participants forwards a message in the conversation to a new user account of the plurality of user accounts that is not a participant of the conversation, the new message thread including the new user account; and initiating a new message thread associated with the conversation when one participant leave the conversation.

[0010] The method may further comprise assigning the first user account with a moderator role, having authority to end the conversation, remove a participant from the conversation and change the role of another participant in the conversation.

[0011] The method may further comprise assigning an account of a participant of the participants as a ghost reviewer, having authority to revoke the moderator role from the first user account and to send a warning message to any of the participants determined to have a compliance violation.

[0012] The method may further comprise assigning an account of a participant of the participants with a member role having authority to at least write messages, change thread subject, transfer conversations and hold and resume conversations.

[0013] The method may further comprise assigning an account of a participant of the participants with a viewer role, having viewing restrictions on at least one or more of messages, lists of participants, and a message thread history.

[0014] The method may further comprise assigning an account of a participant of the participants identified in a "send to" field for the conversation as an contributor to the message thread; assigning an account of a participant of the participants identified in a "send cc" field for the conversation as a passive contributor to the message thread; and assigning an account of a participant of the participants identified in a "send bcc" field for the conversation as an invisible contributor to the message thread that cannot invite or initiate sending of blind copy of a message to other user accounts to the conversation.

[0015] The method may further comprise closing the message thread and ending the conversation when either a command to end the conversation is issued by the first user or all participants have left the conversation.

[0016] The method may further comprise transferring the conversation to an account of the plurality of user accounts outside the participants upon issuance of a transfer command from the first user account.

[0017] The method may further comprise any of: placing a hold on the message thread upon issuance of a hold command from the first user account, where new messages cannot be submitted to the message thread until the hold is removed; interrupting the message thread upon issuance of a mark command from the first user account, where a new message from the first user account is provided at the mark point in the message thread; seizing the message thread upon issuance of a seize command from the first user account, where the participants having only viewer role until the seized message thread is released by the first user account; merging the message thread with a second message thread of a second conversation into a third message thread for a third conversation involving participants of the first and second conversations; and splitting the conversation into first and second parts with a first subset of the participants assigned to the first part and a second subset of the participants assigned to the second part.

[0018] The method may further comprise for each account of the first subset of accounts, maintaining message status data relating to the each account and updating the message status data to indicate whether the message has been: received by the network; received by the each account; and opened by the each account.

[0019] The method may further comprise tracking the conversation in a conversation channel, the conversation channel being discoverable by one of the plurality of accounts.

[0020] The method may further comprise specifying a time-to-live time for the conversation indicating a deadline for acceptance of the request message. If an account of the first subset of accounts accepts the message prior to the time-to-live time, the account may be designated as a participant in the conversation, and if the account accepts the message after the time-to-live time, the account may not be permitted to participate in the conversation.

[0021] The method may further comprise providing the message to the participants as either a one-to-one conversation, a multi-party conversations, a blast conversations or a broadcast conversations.

[0022] The method may further comprise providing access to the first user account through a second client in the network while maintaining access to the first user account through the first client; when the second client reconnects to the network after being disconnected from the network, reconciling any queued actions for the conversation, the message thread and the messages stored at the second client against a current state of the conversation, the message thread and the messages; re-synchronizing the second client to the current state of the message conversation, the message thread and the messages; updating a first status indicator in the message log with details whether the message has been sent from the second client; and updating a second status indicator in the message log with details whether the message has been received or opened by the second client. The second client may be a mobile device.

[0023] The method may further comprise forwarding the message to an outside account of the plurality of accounts that is not in the first subset of accounts while a shared conversation status is maintained for the outside account. The outside account may be a contact in a roster associated with the first user account; and messages within the conversation submitted by outside user account may be formatted to appear to be submitted by the first user account or by the outside account on behalf of first user account.

[0024] In a second aspect for an embodiment, a server for processing messages sent from a client in a network is provided. The server comprises a message sending module. The message sending module is adapted to send a message for a conversation to be transmitted from a client associated with a first user account of a plurality of user accounts associated with the network to a set of user accounts of the plurality of user accounts upon activation of a command to send the message; send to the set of user accounts a request message requesting

acceptance of the conversation; receive replies from the set of user accounts to the request message; and send the message for the conversation to a first subset of accounts associated with the set of user accounts that generated an acceptance message for the request message and updating a message log associated with the conversation to indicate that the first subset of accounts has accepted the conversation as participants in the conversation. The message sending module does not provide the message to a second subset of accounts associated with the set of user accounts that refused or did not respond to the request message and updating the conversation log to indicate that the second subset of accounts has not been sent message for the conversation; associates a message thread with the message for the conversation and the participants, where responses to the message from the participants are included in the message thread; closes the message thread when one of the participants indicates that it is no longer participating in the message thread; and creates a new message thread for a set of remaining participants in the conversation.

[0025] The server may further comprise a message archive server that assembles and stores data of an archive message unit for the conversation, the data comprising the message thread and messages associated with the conversation in a storage system. For the conversation, the data may comprise summary data, system header data and personal header data.

[0026] The message archive server may further update a message log associated with the conversation when the client accesses the data of the archive message unit.

[0027] A server and / or a device may be provided to implement any aspects of the method described.

[0028] In other aspects various combinations of sets and subsets of the above aspects are provided.

Brief Description of the Drawings

[0029] Embodiments of the disclosure will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a block diagram of a network having a data center (as a server) accessed by a device (as a client) that is processing a message conversation according to an embodiment;

Figure 2 is a user data model diagram showing exemplary relationships among a user, a user contact roster, a conversation inbox, conversation, threads, and messages according to an embodiment of Figure 1;

Figure 3 is a messaging diagram showing communications between the data center and the device of Figure 1 during a sign-on request initiated by the client;

Figure 4 is a flow chart of processes performed during establishing and managing the conversation according to an embodiment of Figure 1;

Figure 5 is a state diagram of an exemplary conversation managed by the data center according to an embodiment of Figure 1;

Figure 6 is a block diagram shown an exemplary transport connection for a conversation protocol for the conversation according to an embodiment of Figure 1;

Figure 7 is a block diagram of an exemplary graphical user interface (GUI) generated during the conversation according to an embodiment of Figure 1;

Figure 8 is a block diagram of an exemplary GUI generated during the conversation of an inbox at a device according to an embodiment of Figure 1;

Figure 9 is a block diagram of an exemplary GUI for a chat interface generated during the conversation according to an embodiment of Figure 1;

Figure 10 is a block diagram of accessing and synchronization of conversation between the user client and the server according to an embodiment of Figure 1;

Figure 11 is a block diagram of an exemplary GUI for conversation channels generated during the conversation according to an embodiment of Figure 1; and

Figure 12 is a block diagram of an exemplary conversation archiving model for compliance archiving of messages according to an embodiment of Figure 1.

Detailed Description of Embodiments

[0030] Exemplary details of embodiments are provided herein. The description which follows and the embodiments described therein are provided by way of illustration of an example or examples of particular embodiments of principles of the present disclosure. These examples are provided for the purposes of explanation and not limitation of those principles and of the disclosure. In the description which follows, like parts are marked throughout the specification and the drawings with the same respective reference numerals.

[0031] One embodiment provides a messaging service. One feature of the embodiment provides a messaging system through a network that provides tracking of message histories. Messages are grouped together in a conversation. Entities that are involved in a conversation are provided in Table 1. As indicated in Table 1, users participate in conversations through clients that securely interface with the system. Conversations have clearly identified participants and are bundled in clearly demarcated threads which can be archived for compliance tracking. Features of the system provide secure, scalable and fault-tolerant messaging that allows adherence to regulatory requirements. Each user may be identified by a unique service identifier, which may be further associated with one or more aliases, which may include as an email address.

Table 1: Entities in a Conversation

Entity	Description
User	Users creates, accepts, ignores conversations, starts and ends threads and sends messages
Client	Clients provide the user interface to the users and communicate with the system to send delivery receipts etc.
System	The system provides the messaging to the service clients. System components propagate conversation, threads, and messages amongst the participant users

A message is an elemental communication tracked by an embodiment. A message is generated and sent by one client in the system to one or more clients in the system. Response message(s) can be provided to the original message. A series of messages may be linked together in a thread. A thread may be based on messages that have the same subject and / or set of participants. A series of threads and / or messages can be grouped together in a conversation. An embodiment provides tracking of messages, threads and conversations and their related participants. Control and archive features are provided for messages, threads and conversations and their related participants.

[0032] In one embodiment, the messaging service manages the distribution of the messages created by clients in a network, tracks message histories and participants in conversations, and provides controls over message participants. A client may be any type of device that can communicate with the network, such as a mobile device, computer, laptop, tablet device, a thick client, a thin client, a browser-based client, an application executing on a

device, an embedded widget operating on a device, an autonomous client, a web robot ("BOT" or "bot"), etc.

[0033] At a client, graphical user interfaces (GUIs) may be provided to allow a user to access features of the service. For example, GUIs are provided for an inbox and a conversation interface. The inbox contains a list of active conversations; each conversation provides a set of individual threads which may be archived; and each thread contains the messages being exchanged. The embodiment also provides an archive system and a search interface to access active and archived messages.

[0034] Structural components of an embodiment and its features are now described in view of Figure 1. An embodiment of the disclosed system and service is depicted by system 100. System 100 has data centers 102 which are geographically diverse and clients 104. Clients 104 may be provided in various application clients hosted on a variety of devices, such as desktop PC 104A, smartphone 104B, bots and third party servers 104C, for use by one or more users 199.

[0035] Data centers 102A and 102B are provided, each having system components having redundant IP, power and computing hardware. Clients 104 connect to the data centers 102 via secured IP data connections, where such connections are preferably optimized for bandwidth and battery consumption especially for carrier wireless data networks.

[0036] From the client 104, user 199 can initiate several types of messages, including messages based on one-to-one communications with one other participant, multi-user communications with multiple other participants, and blast and broadcast communications sending one communication broadcast from that one client to one or more other clients. The user may initiate and receive messages on one or more clients. A chat conversation provides instant messaging among clients where each chat session is tracked as a conversation. The client can also access other services through the system, such as directory services and message archive search.

[0037] Front end (FE) application servers 106 (herein "FE servers 106" or simply "servers 106") provide message application services, such as message processing and routing, presence, compliance logging and policy enforcement and event and status propagation. FE servers 106 connect to the message store system 108 and coordination service 109, via a plurality of Application Program Interfaces (APIs). Also, FE servers 106 connect via a plurality of APIs to authentication services 110, service manager server 120, message archive 130, and

message hub server 140. Message store system 108 provides reliable, fault-tolerant and redundant storage of the active conversations and message inboxes. Coordination service server 109 monitors the operational health of FE servers 106 and provides an election service for load redistribution and service recovery in the event of a failure associated with an instance of FE server 106. For simplicity, other functional entities, such as content servers for file transfer and desktop sharing capabilities, and system management, maintenance and application administration, are not shown in Figure 1.

[0038] Authentication server 110 provides a plurality of authentication services including user ID/password, Active Directory (trade-mark), and SAML authentication. Upon authenticating the user, authentication server 110 provides a service token to the authenticated client 104. The authenticated client then presents this service token to FE server 106 which then checks with authentication server 110 for service access authorization and user identity. Authentication server 110 also provides single sign-on as well as single sign-off services for all clients 104 and services associated with system 100.

[0039] Service manager server 120 provides the directory services that contain user profile and service data including information, such as vCards and line of report in organization. Service manager server 120 also provides the user contact roster for messaging for each user 199. Ethical wall policies are provided via rules that specify contacts that can be in a user's roster and contacts that a user is allowed to exchange messages. For simplicity, other service manager functions, such as service provisioning and user contact management, are not shown in Figure 1.

[0040] Message archive server 130 provides reliable, fault-tolerant, redundant and compliant storage for conversations. It provides indexing and supports searches and retrieval of messages in the archive. Message archive server 130 also provides systems and routines for compliance review, audit and eDiscovery.

[0041] Message hub server 140 federates, mediates and provides messages and facilities to assist with processing and analyzing messages for compliance requirements between system 100 and external messaging services, such as Thomson Reuters (trade-mark) messaging for Reuters messaging users, enterprise or cloud hosted Microsoft LCS/OCS/Lync services for users and other messaging services, such as XMPP/Jabber. Message hub server 140 routes messages between the N message services with N routes that can be easily provisioned using DNS SRV records, instead of providing N routes to N other message services, which would require a total of N*(N-1) routes. Message hub server 140 provides high message transaction

throughput and efficiently enables an industry-wide messaging service spanning the breadth of the financial services industry including banks, hedge funds and broker dealers as well as other firms in highly regulated industries, such as insurance and health care.

[0042] User portal server 150 generates and manages a user interface for end users to access and manage the user services, such as contact invitation and edit user profile. It also provides an interface for users to discover and securely access third party applications, such as trading bots. For simplicity, servers for other functions, such as service provisioning, service monitoring, service usage recording and billing and user contact invitation management, are omitted from Figure 1.

[0043] Now further detail is provided on the message conversation user data model which is provided by an embodiment. For the conversations, an embodiment provides facilities to track and control conversation participants. Message tracking is used to facilitate compliance with regulatory requirements, such as requirements of the SEC and FINRA. Various levels of tracking and control are provided. One embodiment selectively imposes a requirement that a participant in a conversation must expressly agree to accept the conversation. This feature expressly restricts participants in a conversation which can facilitate management of the conversation and related messages.

[0044] In Figure 2, components of an embodiment of a conversation user data model include a user 199 participant in conversation 202, which contains threads 204, each thread containing a series of messages which may be encapsulated as events 206. Each conversation 202 has summary data 210 that may contain the conversation originator, conversation priority, conversation creation and end date and information, such as the number of threads 204 and number of messages 206 in the conversation. A conversation 202 consists of a series of one or more linked message threads 204. A thread 204 is a series of one or more messages sent amongst existing (and added) participants, which may share the same subject for the messages. In one embodiment, each thread is linear, namely, no sub-conversations are provided. As such, a thread has a single beginning and a single end. In other embodiments, threads may have branches. A thread may be demarcated by participant or subject changes or other criteria. A thread can be shared amongst the participants present in the conversation during the duration of the thread. Further details on relationships among conversations, threads and messages are provided below.

[0045] Each thread 204 represents one segment of conversation 202. A thread has a number of participants 220 and summary 212 containing data elements, such as subject, thread

creation and close date and number of messages in the thread. In one embodiment, if there is a change to a list of participants for the current thread (such as the removal of a participant) or if the subject matter changes (for example, by a change in the subject line for a message in the thread) or a change in another criteria (such as expiry of time), then the current thread is deemed to have closed. Thread 204 including messages and events 206 within the thread are shared amongst participants 220 associated with the thread in the conversation 202. In one embodiment, upon closing of a thread, details of the thread including the thread summary and all the associated messages 206 are written to message archive 130.

[0046] Each thread 204 may contain events 206 relating to the conversation, such as a subject change, an invitation of additional participants, notification of participants accepting or declining invitation, removal of participants from a conversation, or participants leaving a conversation and messages. For each message 206, status receipts 214 are generated at various points during creation, transmission, delivery and reading of a message by participants. The receipts show a progression of processing of the message from the originating participant to server 106 to the recipient participants. Exemplary types of message receipts provided include messages reflecting that the message have been: queued at the sender client for transmission; sent by the client to the server; received by the server pending delivery to the clients of the recipient participants; delivered to a recipient; read by a recipient; and not delivered to a recipient. Message status data in the receipts can be analyzed for messaging compliance, auditing and eDiscovery by an embodiment.

[0047] In one embodiment, a conversation 202 starts with at least one participant 220, with an open message thread 204 with at least one message 206. Until the conversation is ended, any number of serialized non-branching threads may be added to the conversation. Once a conversation is ended, no further threads may be created within the ended conversation. If the conversation is closed, the conversation may be hidden from the user interface of the user client, but the conversation remains active. While a thread is open, any number of serialized messages may be added to the thread. If the current thread is closed, and if the conversation has not yet ended, a new message thread 204 starts on the next message 206 sent into the conversation 202. If the list of participants 220 in the conversation becomes empty (e.g. all participants either left the conversation or were removed from it), the thread closes. At this event, the conversation may also end.

[0048] In an embodiment a new conversation 202 may be created from a previous conversation, where meta-data associated with the thread summary from the previous conversation can be used to associate the new conversation with a previous conversation.

[0049] It will be appreciated that even if after a conversation ends, though no new threads may be added, meta-data, such as the message read status receipt may still change. The conversation and its associated threads and messages within each thread with the meta-data in the conversation and thread summaries are accessible via message store 108 or message archive 130.

[0050] When a conversation is created, a user may identify a time-to-live (TTL) time and date associated with the conversation invitation. Data relating to the TTL is stored with the conversation parameters by the system. Any recipient that accepted the conversation invitation prior to the time and date specified by the TTL time becomes a participant of the conversation. Any recipient that attempts to accept the invitation after the time and date specified by the TTL time may see that the invitation has expired and may not be permitted to join the conversation. If no recipient accepts the invitation before the time and date specified by the TTL, the conversation is ended.

[0051] In an embodiment, other types of conversations may be modeled using the conversation model and associated protocols. Exemplary types of other conversations include:

- a "blast" conversation, which may have features comparable to a "bcc" message that is delivered to multiple recipients, where a message recipient may only respond back to the originating user;
- a broadcast, which may have features comparable to a "cc" message that is delivered to multiple recipients, where the message recipient may reply back to all participants in the distribution);
- a feed, which may have features comparable to a Really Simple Syndication ("RSS") feed, where users subscribe to a one way broadcast of message from a bot or a reachable contact of the service to the user; and
- a channel, which may have features comparable to persistent chat conversations where authorized participants may discover the conversation and join the channel to view and exchange messages.

For both blast and broadcast conversations, the recipient that accepts the invitation message becomes a participant of the conversation. For feed and channel conversations, the act of subscribing to the feed or channel is equivalent to the user accepting as a participant of the conversation.

[0052] For each conversation 202, which may be in the form of a one-to-one, multi-party, blast, broadcast, or other types, the participant 220 depending on the role 222 may have a number of available conversation actions 208 that may be invoked on the conversation. Depending on the assigned privileges associated with the role of the participant, the participant may be able to invoke any of the following commands/requests on the conversation:

- End – all participants removed from the active thread, the active thread is closed, and no further threads and messages may be added to the conversation;
- Close – the conversation is temporarily hidden from the user interface of user client 104;
- Hold/Resume – temporarily freeze the active thread so that no new messages can be entered without closing the thread, and resume a thread that was placed on hold;
- Seize/Release – seize floor control of the active thread within the conversation to gain exclusivity to send messages and place all other participants temporarily in view only mode, and release floor control against a thread. Depending on service configuration and the privilege of the participant, the floor control may be automatically released based on certain criteria, such as time expiry;
- Transfer – transfer the floor control or held thread control to another participant, or transfer the conversation and/or moderator control to another user;
- Interrupt – mark the message within the active thread to indicate conversational context. For instance, a trader may interrupt to mark a bid or offer price so that the trader may compose details of the transaction while the bid and offer might continue to change, or mark that a given bid or offer as off-the-table;
- Merge – merge two (or more) conversations with their associated participants into a new conversation (either with or without the active thread messages); and
- Split – split one conversation into first and second parts (or more), resulting in two (or more) conversations with two subsets of the participants of the original conversation split among the parts.

[0053] In one embodiment, for each conversation, the user may control the characteristics of the flow of the conversation. One characteristic sets the conversation in a half duplex mode, which is akin to a walkie-talkie push-to-talk service. This has an effect of making the conversation as view only to all other participants while the user has floor control of the conversation thread. This transition may also be done dynamically by seizing floor control over the active thread in the conversation. During a half-duplex conversation, a participant having sufficient conversation privileges may "seize the floor" to take control of the conversation. Having control of a conversation allows the controller to enter messages while making the active thread view-only to other participants. A message entered appears in sequence in the active thread similar to any conversion except that only the participant with floor control is allowed to submit a message into the active thread. In contrast, in a full duplex mode conversation any participant having a role authorized to submit messages may concurrently contribute messages to the conversation.

[0054] The conversation invitation may include addresses included in a distribution list that contains one or more contacts. An existing conversation may be transferred to, or addressed to a group of one or more recipients. When an account receives a conversation invitation, if the account is associated with a distribution list, then, any user in the distribution list may accept the conversation. Upon acceptance, the accepting user is connected in a conversation with the participants. Additional participants may be added to the conversation. As a metaphor, a "desk" is provided for a user account and the desk contains the distribution list for the additional accounts that can receive the message. Privileges may be provided for the user's account. Participants with sufficient privileges may transfer the conversation to another desk. When a conversation is transferred to another desk, the participant may decide to share the message content of the existing thread or alternatively, a new thread may be started after the transfer of the conversation. If the "desk" is a support desk, which may be implemented as a client or bot, a unique support ticket number may be generated and set by the client/bot and stored in the shared header 1216 meta-data of the conversation. As a metaphor, a "desk" may be the compliance team, where any member of the compliance team at a trading firm that may need to review the messages exchanged within the conversation, or a trading team, where any trader may execute the trade request.

[0055] In an embodiment, an automatic sharing provision for a conversation is provided, where a message may be shared and forwarded automatically to a set of users when the message is received. On the distribution list, one or more outside accounts are listed, where

the "outside" account is not on the original participant list for the message. The outside account may be maintained in a roster associated with the sender's account. Messages in the conversation that are submitted by the outside account to the conversation are formatted to appear to be submitted by the first user account or by the outside account on behalf of first user account. As such, user 199 may initiate a command to "auto share" one or more conversations 202 or messages in the user's inbox 260 with other users in the user's roster 250. From the inbox user interface 800, the user may set "auto share" for all or selective conversations or the user's inbox including new incoming conversation invitations with one or more other contacts. The "auto share" settings may be set for a certain period of time or permanently until subsequently changed or revoked by the user. The "auto share" contact that accepts the "auto share" invite from the user is granted a special "auto share" participant status along with a role that is equivalent to the role assigned to the user within each the conversations. Messages submitted by the "auto share" participant within the conversation may appear to other participants as if the message had been sent by the user, or the routing information may be amended to indicate that the message was sent from the "auto-share" participant on behalf of the user (for example, the "re" line or the "sent from" data may indicate "from Judith", "on behalf of Warren", etc. to reflect the sharing connection). Similarly, from the conversation user interface 900, the user may set "auto share" a conversation with specific provisions relating to threads within the conversation with one or more other contacts.

[0056] In an embodiment, social features may be modeled using the conversation model and associated protocols. Exemplary types of social features include:

- a "greeting", which may have features similar to a status update or a user tag line; a greeting may be modeled as a conversation channel where each update may be represented as a conversation thread and contacts that viewed the greeting as participants with "viewer only" role and are tracked with message read receipts (a greeting may be made viewable to all other users of the service or only to select others, such as those on the user's roster);
- a "wall", which may have features comparable to a journal with open exchange of messages and notes; a wall may be modeled as a conversation channel where participants that post various messages and media content as well as participants that read the content may be tracked (a wall may be made accessible to all other users of the service or only to select others that the user granted shared access and the user may grant selective contacts with access to the "wall" with roles of member or viewer);

- a "feed publisher", which may have features comparable to a "RSS" feed; a feed publisher may be modeled as a conversation channel where each content article associated with the feed may be represented as a conversation thread (the user as publisher of the feed may configure the feed so that other participants may be allowed to only view the articles or may be allowed to contribute comments); and
- a "feed aggregator", which may have features comparable to a "RSS feed aggregator", may be modeled as a conversation channel where various content articles and updates that are injected by publishers into the channel may be modeled as threads.

[0057] Now, further detail is provided relating to the participants of a thread within a conversation. Each thread 204 of a conversation 202 has a list of participants 220, with each participant having a role 222 of moderator, member (regular participant) or viewer (silent participant). A moderator has exclusive powers over the conversation, such as the ability to end a conversation and to remove a participant from the conversation. A moderator may also confer moderator roles to other member and viewer participants. Unlike moderators, members have less control over the conversation, but can change the subject of the conversation and can invite other participants to the conversation. Viewers are allowed to invite other participants, but are only allowed to view the messages and cannot participate in the conversation (message entry field is grey out and disabled for viewers). The type of participant may be set during creation of a conversation or when inviting the participant. Any participant may leave a conversation independently.

[0058] In an embodiment of the conversation model, one or more moderators may be assigned to the conversation. A moderator may be the originator of the message or a participant that has been assigned supervisory rights to the conversation. Such supervisory rights can be defined through user organizational charts having defined ranks, powers and limitations. For example, in an organization having various levels of rank, a moderator can be defined as a person who is linked to a user and that has a superior rank to the user. In a one-to-one conversation, both participants can be moderators. In a multi-party conversation, the participant that created the conversation is assigned as the initial moderator; however in other embodiments, the assignment of the moderator may be changed. A user in a conversation can control privileges that other users have for the conversation. Different users may have different privileges. For example an originator of a conversation may have full control on who can join a conversation and what levels of participation are provided for the members (e.g. read only, full

read and reply rights, invitation rights, etc.). Invitees to a conversation may have a different, lower set of privileges (e.g. read only, no forwarding rights, etc.).

[0059] For a conversation, a participant may include ghost reviewer 216, which is one particular class of participants. In one embodiment, a ghost reviewer has equivalent rights to the moderator, but also has compliance supervisory rights relating to conversations. A ghost reviewer participant may enter selected conversations, optionally as an invisible and silent observer, and revoke or change the rights of the moderator in the conversation. A bot participant or a bot with ghost role in the conversation may monitor the conversation for specific keywords. When a new message is posted, the message can be scanned for keywords and if the identified keywords are detected in the message, the ghost reviewer may take certain actions against the conversation, such as sending warning message to any of the participants determined to have a compliance violation, closing the message thread, or ending the conversation. The bot participant or a bot with ghost role may also independently initiate a compliance review action by the ghost reviewer for a conversation.

[0060] In an embodiment of the conversation model, each participant 220 in conversation 202 can also be assigned with a correspondence context 224, which may be associated with a set of rights for the conversation. The correspondence context may be determined from the mailing list for the conversation, where active, passive and silent contexts are assigned. This may be based on the delivery criteria, where an active context is assigned to addressees in the "to" field, a passive context is assigned to addressees in the "cc" field and a silent context is assigned to addressee in the "bcc" field. In general, the correspondence context of a given participant is set by the user that invited that participant. Privileges and restrictions are normally set based on the participant's role in the conversation (e.g. moderator, member or viewer) and are independent of the correspondence context of the participant ("to", "cc" or "bcc"). As an embodiment, participants that are addressed as "bcc" preferably cannot invite additional participants nor send "bcc" messages to other participants. Unlike traditional email systems, messages from all participants in the conversation can be provided to "bcc" participants.

[0061] To start a new conversation, the originating participant composes a new message to be sent and activates the "send" command on his/her device 104A-C. Before delivering the message to the listed recipients, the system generates and sends a conversation request with the subject or the first message if no subject was specified to each listed recipient. When a listed recipient receives and opens the request message at his/her device, a user interface is provided listing options regarding the conversation. One option is to accept the conversation. If

accepted, the conversation is established between the originating participant and recipients that accepted the conversation request. Another option is to reject the message. If rejected, the conversation ends, and a rejection message is generated and sent to the originating user that the recipient declined the conversation request.

[0062] Decisions of listed recipients are tracked in a log associated with the conversation request. The logs can be stored in long term storage in the message archive server 130 and / or stored in short term storage in the message store system 108. Through such logs, the system tracks the list of participants that accepted the conversation request and their status for messages, threads and conversations. Using that status information, message delivery parameters can be tracked and followed. For example, if client 104 rejects participating in a message, then the list can be used to determine that no messages are to be sent to that client 104. The logs are used to provide message compliance control and auditing by providing keyword and participant searching fields that allow an administrator to search and identify messages of threads associated with specific participants, conversation subjects, etc.

[0063] To access the messaging service, an embodiment provides user 199 with concurrent user sessions 230. Each of the user sessions 230 may be connected through a client 104 on a number of user devices 104A, 104B, 104C. The service may assert an aggregate presence 234 associated with the user which may be based on the presence 232 associated with each of the user's sessions 230. To help the user manage messaging communications, an embodiment provides the client 104 with a user interface with a roster 250 containing the user's contacts 252, and an inbox 260 which holds a selected set of the user's conversations 202. Each user 199 has a profile 240 which may contain the user's VCard and avatar image, and may be associated with a user status 242, such as the user greeting or status message and user meta-location. User roster 260 may contain a list of contacts 252, each of which may be associated with meta tags 254, such as system tags (for example, contacts on roster belonging to marketing or sale or operations group) and user tags (for example, a contact tagged as a favorite). The user profile 240 as well as the contacts 252 and roster 250 have data that is synchronized with service directory 120. Roster 250 may include contacts from the directory in service manager 120, imported from the user's directory, such as Microsoft Active Directory (trade-mark), and contacts invited from other sources, such as the user phone's contact address book.

[0064] In an embodiment, the inbox 260 interface provides client 104 with a list of conversations that the user can participate in. This list includes a delta synchronization of

changes in messages from FE server 106 to a client 104. The list may be retrieved via a paging mechanism from server 106 to client 104. Due to device resource constraints or depending on the sorting order, some of the conversations may not be shown in the active presentation view on the client 104. If new messages or events are posted to an active conversation but perhaps hidden from the presented view, the conversation appears in the presented view with indication of new unread messages or events. Typically, only active conversations are retained in the inbox. Ended conversations are archived in message archive server 130 and such conversations may be resumed as a separate new conversation. Closed conversations are still active conversations, but are not presented in the inbox on the client 104. Closed conversations may be presented in the inbox view if there are new messages or events associated with the closed conversation. Conversations in the inbox may be filtered based on a status or criteria of the conversations, such as all, new, sent, received, multi-party, recent and favorites, and each of the filtered lists may be further sorted by date, subject, priority and flag.

[0065] An embodiment provides several features that are useful for mobile client 104B or any client on devices with constrained battery power, connection bandwidth, computing processing power and memory storage. One feature of an embodiment provides offline message processing. There may be instances where client 104B is off-line (e.g. during a flight). Locally at that client 104, its user can compose still messages, but the offline messages are stored at client 104. Once a connection to FE server 106 is re-established, client 104 can send the stored offline messages to the system which appends the messages into the active thread of the conversation and receives indication of messages pending delivery to the recipient participants. Messages can be sent and conversation invites can be initiated to recipient participants regardless of their presence status.

[0066] Mobile client 104B implements communication bandwidth and power saving optimizations that are mode dependent for device 104B. Typically only the differences of existing data and new data are transferred from server 106 to client 104B. If client 104B is connected on-line, all messages, events and status data may be exchanged between the client and server 106. However, if the user locks the keypad of the mobile device or there is no user activity for a period of time, mobile client 104B enters a "sleep" mode and does not need presence data or personal event data (for example event data reflecting that another user is typing message within a conversation). Avoiding the exchange and processing of this data in "sleep" mode conserves battery power and communication bandwidth. Upon an absence of user activity or new incoming event data for a period of time in "sleep" mode, client 104B may

enter a "hibernate" mode, which provides even less activated components in client 104B. Typically, only conversation messages and invitations are exchanged in a hibernate mode. However, system maintenance messages for mobile devices that do not support push notification may also be exchanged. If client 104B is on a device that supports push notifications, such as a BlackBerry (trade-mark) device, message and event data may be pushed to client 104B. If mobile device 104B is in an "offline" mode, then minimal or no data is exchanged between device 104B and server 106. The client can enter the "offline" mode via manual user action or due to lack of data connection, such as during a flight.

[0067] For the offline feature, a client application for mobile device 104B provides optimized network transport for bandwidth and battery savings with the ability to manage dropped data connections, loss of radio signal, dropped packets, network traffic congestion and high data transit latency by automatically switching to offline messaging and reconnecting immediately upon the establishment of a usable data connection. During a connection loss event, the client application can provide an exponential back off when attempts are made to reconnect to the network. When a connection is established, the client application connects device 104B to server 106 using a persistent long live session key with low packet overhead. Server 106 supports configurable hysteresis session caching so that other participants in the conversation do not see the user experiencing transient data connection loss. Client 104 and server 106 also provide tiered transport queues allowing user action to be prioritized over events and less time critical data, such as contact avatar images.

[0068] Another feature provides service parity between a thin-client 104 on desktop device 104A and mobile client on device 104B. As such, device agnostic access to features of an embodiment are provided as well as features to allow transitions from desktop 104A to mobile device 104B and through different locations (e.g. at work, home, in transit, etc.).

[0069] An embodiment manages situations where a user is accessing the system simultaneously through two or more devices 104. For example, a user may access the system through a desktop client 104A and then initiate another access through a mobile client 104B. A user can initiate a message conversation on desktop 104A and access the same conversation on mobile device 104B (and vice versa) with full context of the threads and messages of the conversation.

[0070] For these simultaneous accesses, an embodiment provides message synchronization and message view bookmarking across a user's active clients and synchronizes a user's actions when such simultaneous accesses are occurring. For example,

pending, delivered, and read status receipt for each message is propagated across the system so that if the user switches from one client 104 to another client, the user may resume from the point of the last read message.

[0071] Mobile client 104 for device 104B connects to a mobile gateway module within an instance of FE server 106. The gateway authenticates and establishes a connection with client 104 and manages and maintains a secured transport with the client. The gateway may also optimize the efficiency and throughput of the transport, by for example, bundling service data to reduce API transactions and round trips. The gateway can utilize transport encryption, such as AES, rather than HTTPS for always-on applications and can perform delta synchronization between FE server 106 and a client on device 104B. To minimize bandwidth usage, the gateway may employ delta synchronization schemes to download and synchronize only data to the client 104 that have changed. One preferred connection is via TCP over a HTTP connection. The choice of transport connections provides several messaging implications, such as the frequency duration for keep-alive messages. For example, for TCP transport, a keep-alive message is required every 110 seconds for most mobile operator networks to sustain the data link. The keep-alive or HTTP polling message traffic typically account for a significant portion of the data traffic usage.

[0072] Now, further detail is provided on how connections are made from clients 104 to FE servers 106. As shown in Figure 1, client applications on devices 104A-C connect and access facilities of an embodiment via FE server 106. Connections can be established through several protocols, providing different method connection methods, including:

- a bootstrap protocol that determines supported authentication protocols, and hosts for serving the client requesting service access;
- an authentication protocol that provides service authentication and service authorization tokens for accessing services of an embodiment; and
- a conversation protocol, providing access to the user's roster, conversation inbox, and exchange of messages between users.

Details on these exemplary protocols are provided below.

[0073] Turning now to Figure 3, exemplary message streams are shown for selected protocols. Application client 104 is installed on any of the devices 104A-C and it communicates with various servers, such as authentication servers 110 for authentication and FE servers 106 for messaging services. For initial connection setup, client 104 accesses a bootstrap service

302 to determine the authentication service and service options, such as localization. With this arrangement, an application accessing the bootstrap protocol only needs to know the URL for the bootstrap service. Locations of authentication and conversation services are provided in subsequent responses in the bootstrap service. Processing of messages between client 104 and FE server 106 are handled in FE server 106 by bootstrap process 302.

[0074] The exemplary bootstrap protocol comprises messages 304, 306, 308 and 310 to get the client locale parameters and user login mechanism and execute the user authentication and service authorization process. The protocol may be implemented as a synchronous protocol with messages encoded in JSON (JavaScript Object Notation) and transported over HTTPS or TCP. When using HTTPS, the protocol supports load-balancing that is transparent to clients and allows the SSL to be decrypted at multiple FE servers 106 instead of a traditional load balancer and can support simple, stateless load-balancer configurations.

[0075] Client 104 sends service locale message 304 to get configuration data from process 302, such as supported languages. Next, client 104 sends a mechanism request message 306 to get login mechanisms from process 302. Exemplary data that is provided by process 302 include details on authentication services FE server 106 supports. After client 104 is successfully authenticated by authentication service 110, client 104 receives the authentication session ID as well as the service ticket token from service 110. The client 104 then presents 308 the service ticket token to the bootstrap service 302 to obtain the service session ID which it then uses to establish a messaging session with FE server 106.

[0076] Using the service session, client 104 then uses the conversation protocol 316 to exchange messages with FE server 106. If FE server 106 cannot provide service to client 104, then client 104 initiates bootstrap request 310 to request service from another FE server 106, and then uses the conversation protocol 316 to communicate with a new FE server 106.

[0077] To further adapt service handling upon authentication, client 104, which may be on a mobile device 104B, may provide FE server 106 with static user agent information, such as client application name, user agent client release number and client build identifier. Client 104 may also provide dynamic device information to FE server 106, such as device its manufacturer, its model, its operating system data, and device details, such as IMEI or ESN, device ID, carrier ID, network ID, country code, and user's MSISDN associated with the device. This information allows an embodiment to provide specific user sign-in handling, such as optional and mandatory client upgrades, sign-in messages and private-label user-interface themes. For mobile client 104 on device 104B, bootstrap service 302 returns a AES key which client 104 may use to

securely encrypt message and event data over a TCP channel with FE server 106 rather than using a HTTPS transport which is less optimal for battery and bandwidth consumption.

[0078] After client 104 has established a messaging session with FE server 106, the user's roster 250 may be synchronized from the user directory in the service manager 120 through FE server 106 to client 104. The aggregated presence status 234 associated with the contacts in the user's roster 250 is also propagated by the presence service of FE server 106 to client 104. Further, FE server 106 may also synchronize or download the user's conversation summary inbox 260 from message store 108 to client 104. Client 104 then continues with existing conversations, creates new conversations or accepts incoming conversation invites to start conversations via the conversation protocol 316. When an incoming message is delivered to client 104 or after the message is presented to the user, a corresponding message delivery or message read receipt is then sent by client 104 to FE server 106 which then propagates the message delivery or message read receipt 214 to the message originator.

[0079] With some network level components of a system of an embodiment described, further detail is provided on features of an embodiment regarding message creation and tracking.

[0080] Figure 4 shows flow chart 400 of processes for initiating a conversation by an embodiment. To begin, a client can initiate a conversation by creating a conversation, inviting a participant to a conversation, or accepting a conversation invite per process 402. All user actions from the client 104 are written by FE server 106 to message store 108, per process 404. Preferably, the data is written to at least two separate, preferably geographically diverse, instances of message store 108. At process 406, FE server 106 applies to the conversation compliance and messaging enforcement policies, such as ethical walls, to ensure users are permitted to communicate, flag specific keywords in messages to compliance officers and add specific compliance messaging disclaimers. At process 408, FE server 106 then propagates the compliant messages to all instances of the user clients 104, including the delta synchronization of such data to clients on mobile devices 104B, as well as errors and message status receipt data, such as delivered and read. Next, at process 410, the user may then take additional actions against the messages and conversations, such as invite more participants, ignore message invites, end the conversation, hold and resume the conversation, create new message thread, close message thread, read message and send message.

[0081] Message status states and receipts 214 associated with each message are generated at various points during creation, transmission, delivery and reading of a message

206 by participants 220. The states and receipts show a progression of processing of the message from the originating participant to server 106 to the recipient participants. Table 2 shows exemplary message status states and receipts 214 that can be generated.

Table 2: Message Status States and Receipts

	Detail
Queued	State: Message has been queued for transmission (usually seen only on the mobile client when the client needs to turn on the device radio to connect to the network, or a thick client in offline mode)
Sent	State: Message has been sent from the client to the Service
Pending	State: Message has been received by the Service, redundantly stored, and is being delivered to the recipients
Propagated	State: Message has been sent by the Service, but has not yet been delivered to / received by the end client.
Delivered	State/Receipt: Message has been delivered to the end client
Read	State/Receipt: Message has been presented to be read by the end user
Ignored	State: applicable to the conversation invitation rather than messages but the messages may be presented visually as ignored if the conversation invitation was declined by the recipient.
Not delivered	State/Receipt: Message was not delivered to the end user (for example, the message may have been sent into a conversation that no longer exists or messages were sent to a user client of a federated service, such as SIP, but the user is offline) .
Scheduled	State: Message has been received by the Service, redundantly stored, and has been scheduled for future delivery to the active participants in the active thread of the conversation.
Un-Ack	State: Messages sent to user client of a federated service, such as SIP but not yet acknowledged
Error	State: Message sent to a user client of a federated service, such as SIP but returned as error

[0082] For outgoing message that a user sends to other participants in the conversation, a set of timestamps for the message status receipts are presented to the sender user on client 104 sending the message to FE server 106. Except for local device time for "Queued" and "Sent", the timestamps for each of the message status receipts are local time to the client 104 but are measured relative to UTC time of FE server 106. Exemplary timestamps and message status are:

- Queued – local timestamp of the message when the sender client 104 queue the message for sending to server 106. The "queued" message status indication is changed to Sent after the transport of client 104 acknowledged that the message is being sent.
- Sent – local timestamp the message after server 106 confirmed that it received the message from the sender client 104. This timestamp is presented to the user as the message "sent" time only after the client 104 received the UTC relative time reference. All instances of the user's client 104 show the same sent time for a given message.
- Pending – the local timestamp of the message after server 106 received and stored the message pending delivery to the recipient participant client. On the sender client 104, the message status is shown as "pending" until the message status reached the delivered state.
- Delivered – the local timestamp of the message after the first recipient participant client 104 confirmed that it received the message. On the sender client 104, the message status is shown as "delivered" until the message status reached the read state.
- Not Delivered – the local timestamp of the message after server 106 received and stored the message pending delivery to the recipient participant client. On the sender client 104, the message status is shown as "Not Delivered" if the message was sent into a conversation that has already ended, was not delivered to all participants in the active thread, or was sent to a federated contact, such as a SIP user, that is offline.
- Scheduled – on sender client 104, the message status is shown as "Scheduled" with the local timestamp of the message after server 106 received and stored the message pending delivery to the recipient participant client, and also the local time of the scheduled time and date of future delivery.
- Ignored – the local timestamp of the message after server 106 received and stored the conversation invitation decline message from the recipient participant client. On the sender client 104, the message status is shown as "Ignored" if all the recipients of the conversation invitation ignored the conversation request, or the "ignored" status may be shown against a list of recipients that declined the invitation.
- Propagated – the local timestamp of message after server 106 received and store the message and propagated for deliver to message recipients on messaging networks, such as Microsoft OCS (trade-mark) that do not provide delivery or read receipt.

- Read – the local timestamp of the message after the message is presented with the opportunity for the recipient participant to view the message. At that point, the recipient participant client 104 send the read acknowledgement back to server 106 and the "read" timestamp is then propagated back to the sender client 104.

[0083] For incoming message that a user receives from other participants in the conversation, the following are timestamps for the message status receipts presented to the receiving user on client 104 receiving the message from FE server 106. The timestamps for each of the message status receipts are local time to the client 104 but are measured relative to UTC time of FE server 106.

- Sent – local timestamp the message was received and stored on server 106. As the message sent time is the time the message was sent to the server, it is essentially the time the message was received and stored on server 106. This timestamp is presented to the user as the message "sent" time relative to the server UTC time reference. For messages that were scheduled for delivery, the timestamp is the message delivery time rather than the original sent time from the message originator user client.
- Read – the local timestamp of the message after the message is presented with the opportunity for the receiving user to view the message. At that point, the user client 104 that received the message send the read acknowledgement to server 106, and the "read" time stamp is then propagated by FE server 106 back to the sender client 104.

[0084] When a message is created, but not yet sent, it has a "queued" status. Typically, this status is only presented to the user and usually only visible to the user when the user device is offline or has no data connectivity. When the queued messages are submitted to FE server 106, the messages may be contextually misaligned with other messages exchanged in the conversation while client 104 composed those messages in online mode. In this case, the queued messages are added to the tail of the current message thread in the active conversation. There would be an indication that such messages are contextually associated with an earlier message of a given thread in the conversation.

[0085] A message may have a "Not Delivered" status if the conversation ends before the user sends the message. When a conversation ends before the message is submitted to server 106, client 104 prompts the sender user as to whether to create a new conversation to the same list of participants using the undelivered messages.

[0086] Now, details are provided on exemplary states and lifecycle of a one-to-one and multi-party conversation. Table 3 shows one embodiment of the states of a conversation from a user's perspective. Notable conversation states for a user are "Non-participant" when the user is not yet involved with the conversation, "Invited" when the user has been invited to the conversation but not yet accepted the invitation, "Participant" when the user has accepted the conversation invitation, and "Ended" when the user ended the conversation or the conversation has ended. There are two additional conversation states "Offline" and "Re-sync" that reflect states when user client in offline mode or while the client is performing a re-synchronization of user data between client 104 and FE server 106.

Table 3: Conversation States

State	Description
Non-Participant	User is not in the conversation and requires an invitation to join it. The user may have previously been a participant and left it. The conversation may also have ended (but after they left it).
Invited	User is in the conversation's participants list but has not accepted, ignored it yet or has been removed from it.
Participant	User has accepted or created the conversation and my send messages (and invite others depending on access control lists
Ended	A user with moderator role in a conversation may end the conversation and all current participants of the conversation are notified. A conversation may also end if the last participant leaves the conversation but participants are not notified of such end state change. Ended conversations cannot have new threads/messages added to them. However, a new separate conversation may be created using the same last set of participants as well as the subject of an ended conversation.
Offline	Client has detected loss of connectivity to the Service and will periodically try to re-establish it, or user manually request the client to be in offline state
Re-sync	Connectivity to the system has been restored from an offline state and the client is synchronizing the state of the conversations for this client. A client may allow offline messaging, which may require two-way synchronization (changes/messages from the system merged with messages sent by the user while they were offline). After a re-sync, the client will set the conversation to the appropriate state.

[0087] Figure 5 shows states of conversation 500 which is an exemplary instance of the conversation 202 from the perspective of the end user 199. Conversation 500 starts in non-participant state 502. After the user creates the conversation via process 402, conversation 500 transits to creation confirmation pending state 504, which changes to participant state 506 after the system stores the user's message via process 404. The conversation is placed in invited state 508 after FE server 106 propagates the conversation invitation to the recipient participants via process 408. The conversation changes to non-participant state 502 if the recipient user

ignores the invitation. Otherwise, the conversation moves to participant state 506 if the recipient user accepts the invitation via process 410. If the user ends the conversation or if the conversation is ended by another moderator of the conversation, the conversation moves to ended state 510 via process 410.

[0088] As shown in Figure 5, if user 199 enters offline mode either manually or experience loss of data connection (such as during a flight), the conversation state relative to the user transits to the Disconnected state 512. In the disconnected state, the user can continue to read and compose messages in offline mode. If the user reconnects to online state either manually or after data connection is restored, the conversation is in the re-synchronization (re-sync) state 514 while data is synchronized between client 104 and FE server 106. After the conversation is re-synchronized, the conversation may be in any of the creation confirmation pending, non-participant, invited, participant, and ended states depending on the post-synchronization state of the conversation.

[0089] For simplicity, the non-state changing events are omitted in Figure 5 for conversation 500. For instance, while the user is in invited state 508 and if the recipient has not yet accepted the conversation request, the originating user may change subject. As another example, messages in a conversation prior to the acceptance of the conversation invitation by the recipient may be optionally pre-fetched for delivery to the recipient participant so that an up-to-date set of messages is presented to the invitee immediately upon acceptance of the conversation request. This enhances the recipient participant's conversation experience, notably where the recipient participant client 104 is connected via data connection that has long connection setup time (for instance, a wireless connection) or the recipient participant client 104 is experiencing data connection network traffic congestion. Pre-fetching of the messages for delivery to the recipient participant user client 104 may be done while the recipient participant is in invited state 508.

[0090] Referring to Figure 5, to address issues with race conditions and re-synchronizations, an embodiment utilizes a finite state machine to synchronize operational functions between clients 104 and server 106. As part of the state machine, events (for example, creating conversation, sending message, closing a thread, etc.) are analyzed with their effect on each state. In supporting a client 104 that allows the user to create and queue messages while in offline state, a number of possible inconsistencies need to be handled between an offline client's view of a conversation and the current, real time view of the conversation as managed by the system. Table 4 shows exemplary conflicts of states between

an offline client and an on-going conversation. Such conditions are considered to be race conditions.

Table 4: Client Offline Race Conditions

Conflicting Events	Source of Conflict	Resolution	Prompt User?
Accept conversation	User may have accepted it in one of his other sessions	First accept received at server- subsequent requests ignored	No
Ignore conversation	User may have rejected it in one of his other sessions	First reject received at server- subsequent requests ignored	No
Close thread	Thread may have already been closed	Ignore	No
Start thread by sending a message	A new thread may have already be started by another user or another session of this user	Put messages into currently active thread	No
Set subject	Previous active thread may have already closed	Set subject	No
Send message	User may have been removed as participant of the conversation or the conversation was ended	Messages are not sent	Inform user that messages could not be sent ; prompt if user wants to create a new conversation with the same participants to resend the messages

[0091] One class of race conditions is caused by asynchronous actions taken by user on a client 104 composing, reading and / or processing messages in offline mode while concurrently other events and messages occurred in the conversation with the other participants. When the user client 104 reconnects to the service and changes from offline to online mode, the roster contacts, presence status, conversations in the inbox, threads in a conversation, and messages in the threads all need to be synchronized between client 104 and FE server 106. In some cases, some contacts may have been removed from the roster, additional participants may have been added to the conversation, conversations may have already ended, and threads may have already closed. Also, upon reconnecting to online mode, various messages within the conversation (messages by the user in offline mode, messages from other users while the user client is disconnected from the service) and read status of the messages need to be updated. The system 100 provides a conversation protocol that addresses this class of race conditions.

[0092] Another class of race conditions relates to situations where a user is simultaneously accessing multiple clients 104 and is making independent (and potentially different) actions

regarding contacts, presence, conversations actions, and messages on those clients 104 concurrently. For instance, the user may access the service concurrently on client 104 on devices 104A-C. To address potential inconsistencies between the data and user actions on the user's concurrent instances of client 104, the system provides a conversation protocol for synchronizing the changes and actions on all of the user's concurrent client instances.

[0093] Now, further details are provided on an exemplary protocol used for conversations by an embodiment. In one embodiment, the conversation protocol 316 is implemented as an asynchronous interface where the message event may be initiated by the client 104 or server 106. As shown in Figure 6, the transport for the conversation protocol between browser thin client 104 and server 106 is preferably implemented as secure socket layer (SSL) over Transmission Control Protocol (TCP) or HTTPS for requests 602, and a separate HTTPS transport for long poll initiated by the thin client for responses and connections 604. The transport for the conversation protocol between thick client 104 and server 106 is preferably HTTPS for session key exchange 610, TCP with Advanced Encryption Standard (AES) encryption over TCP 612 for messages, events, and status data; a separate HTTPS transport 614 for bulk data, such as files and images; and device platform specific transport for push notification service 616.

[0094] To provide a responsive user experience, client 104 needs to be able to present aspects of the roster contacts quickly upon user sign-in, and need to able to load the conversations in the inbox quickly within the user waiting for the system to synchronize and process data. All devices 104A-C have different limitations on device battery power, data connection bandwidth and cost, processing power, and device memory. As such, one embodiment provides a conversation protocol to have one or more of the following capabilities:

- Delta Synchronization – for a thick client, after the initial sync, only difference (delta) changes for roster, conversation inbox, conversation threads and messages in the thread are exchanged between client and server. The synchronization of messages allows exchanging of messages from a given message ID and the payload is optimized to bundle the message status receipts without the need for separate API calls and avoiding multiple round trips. For both thick and thin clients, the synchronization transfers the critical data first and presented to the user, while less critical data can be downloaded asynchronously in a background process. Where possible, the data is locally cached without the need to retrieve and download the data each time constantly.

- Summary and Paging – retrieval of a conversation with thread summary indicating the number of participants, thread message count, subject, latest message ID and last message ID read (bookmarking so that if the user transit from one instance of client 104 to another, the user start consuming the messages from the previous message consumption point). The protocol provides APIs allowing the conversations in the inbox, threads in the conversation and messages in the thread to be retrieved or pre-fetched in page chunks so that data can be processed and rendered more responsively with less delay on the client user interface.
- Minimal Messages in protocol stream – support for multi-party conversations that involve message status receipts, such as pending, delivered and read and synchronization of conversation data across the user's concurrent multiple instances of the client involves large numbers of protocol streams. The conversation protocol characterizes the nature of the messages and reduces the number of messages and the number of message streams to an absolute minimum but sufficient to allow each client 104 to accurately reconstruct the roster, conversation list, the conversation messages and the participant events.

[0095] In an embodiment of the conversation protocol 316, a user 199 may be presented with basic presence status 232, such as offline and available of other users in a corporate or global directory. A more detailed expanded presence view (for example, offline, available, away, idle, busy, do not disturb, etc.) may be provided when a contact is added to the user's roster (per Table 5). When a user (user A) adds a contact 252 (user B) to his roster 250, a message is sent to client 104 of user B confirming that user A added user B to his roster and queries user B as to whether user B would like to share basic or detailed presence with user A. If user B only shares basic presence, then user A can only see when user B is online or offline. However, if user B shares detailed presence with user A, then user A will see such full presence details.

Table 5: Simple and Full Presence

Full Presence	Simple Presence	Description
Offline	Offline	User is offline, or has manually asserted that their presence is offline. If manually asserted, the user appears to be offline to all other users, but is actually logged in and can initiate conversations

Full Presence	Simple Presence	Description
Away	Offline	User has been away from their computer for more than *Away Timer* minutes, or user wishes to indicate that they are *Away* User can set their status to *Away* manually, or the system will assert *Away* on timeout. For clients on certain devices, such as BlackBerry, locking the screen puts the client in sleep mode and sets the presence status to *Away*
Idle	Available	User has been away from their computer for between *Idle Timer* and *Away Timer* minutes, or user wishes to indicate that they are idle. User can set their status to idle manually, or the system will assert idle on timeout of the *Idle Timer*
Available	Available	User is available
Busy	Offline	User is busy. For clients on certain devices, such as BlackBerry, if the user is on a voice call, the presence is automatically set to "busy"
Do not disturb	Offline	User has indicated that they are not to be disturbed

[0096] As the system allows a user to have multiple simultaneous sessions 230, the user can be simultaneously logged in computer 104A in the office and mobile device 104B. Each instance of the user's clients 104 is identified by session, user agent, protocol, etc. The roster 250, inbox 260, conversations 202, threads 204, events / messages 206 and message status receipts 214 are automatically synchronized to all instances of the user's clients 104 (transient presence status, such as contact presence and event status, such as "... is typing" may not be propagated to a user's mobile device 104B when same device is in sleep or hibernate mode). For compliance and audit trail purposes, user actions are logged and tracked so that compliance officers can determine not only if and when a user received or read a message but also where and on what the device the message is received or read. The audit trail may contain device and user client information, such as IP address, user agent, device handset model, mobile device IMEI, system ID, and cell ID.

[0097] For each user 199, FE server 106 provides a single aggregate presence 234 for a user to clearly indicate the presence of that user. This is typically done instead of projecting different presence for each login session. The system determines a user's aggregate presence based on the user's explicit presence setting or through a priority ranking of the individual sessions. For example, if a user is active in three current sessions, with two of them having the status as Away and the third having the status as Busy, the system determines that the aggregate status is Busy. Table 6 shows the exemplary rankings.

Table 6: Priority of Presence States for Presence Aggregation

Presence	Priority
Offline	1
Away	2
Idle	3
Available	4
Manually set: Busy, Do Not Disturb, Available, Idle, Offline, Away	5

[0098] In an embodiment of the conversation model, a participant 220 is always in a conversation 202 and participates in a thread 204 unless the participant leaves the conversation, the conversation ended or the participant is involuntarily removed by a moderator. If a participant is removed from the conversation by the moderator, the participant has the role of outcast. An outcast is only allowed to rejoin a conversation if the user is re-invited back to the conversation by the moderator(s).

[0099] Table 7 shows a set of allowed user actions for participants with the various roles 222 within conversations. Also shown in Table 7 is the "ghost" 216 which is a participant granted with special privileges, which may be provided by the administrator. Typically, a compliance officer with "ghost" privileges has full visibility of all conversations within the administrative scope of a group of users of the service, but its presence is not announced to, or detected by, the other participants. This "ghost" participant can perform all actions as if the "ghost" is a conversation moderator. For instance, if the compliance officer as the "ghost" participant felt that the conversation involves participants with conflicting ethical interest in a conversation or if the participants in a conversation are exchanging messages that violate specific compliance rules, the "ghost" can enter a warning message or end the conversation entirely. In general, the actions of a ghost are invisible to the other participants unless the ghost wants the actions to be made known to the other participants.

Table 7: Allowed User Actions within Conversations.

User Actions	Moderator	Member	Viewer	Outcast	Ghost
Can read messages in conversation	y	y	y		y
Can write messages to conversation	y	y			y
Can invite new participants to conversation	y	y	y		y
Can kick out others from conversation	y				y
Can end thread	y	y			y
Can change subject of conversation	y	y			y
Can view history of applicable thread	y	y	y	y	y

Can end the conversation	Y				Y
Can view the participants in conversation	Y	Y	Y		Y
Can view unread message counts in conversation	Y	Y	Y		Y
Can modify the ACLs for conversation	Y				Y
Can TRANSFER conversation to another desk	Y	Y			Y
Can HOLD/RESUME a conversation	Y	Y			Y
Can SEIZE/RELEASE a conversation	Y	Y			Y
Can send INTERRUPT into conversation	Y	Y			Y
Can invite others as cc to conversation	Y	Y			Y
Can invite others as bcc to conversation *	Y	Y			Y

** bcc cannot invite or bcc others to conversation*

[00100] Now, further details are provided on exemplary service features provided by an embodiment.

[00101] Figure 7 provides details on an embodiment of a roster user interface 700. Therein, a GUI of roster 250 shows a list of contacts 252 that user 199 may select to initiate conversations 202. A user can find other users in the system by searching the user directory in service manager 120, and then adding the contact into the user's roster. Contacts from the directory may not be added to a user's local roster if ethical wall rules prevent same. For example, a trader may be blocked from adding an analyst in the same firm to each other's roster. The directory entries and roster data can be set to be immutable. Alternatively, changes to the contact information and contacts in the roster on the client or server may be synchronized. Roster user interface 700 shows and provides the methods for the user to update user profile 240, such as user name 704, user presence status 234, avatar 710, which is part of the user profile 240, location status 708 and status message 702, which is part of user status 242.

[00102] In one embodiment, roster 700 may contain one or more bots which are autonomous client applications that perform automated functions. The bots in the roster are identified in a similar manner to contacts with a profile that may contain name and avatar. Unlike contacts which may be discovered in the user directory 120, bots may be discovered in the application store via the user portal 150. Bots may interact with users similar to human participants in a conversation and may provide functions, such as trading execution, asset pricing and transaction matching. Similar to conversation participants, a user may initiate a conversation with a bot on the user's roster via conversation interface 900 and may invite a bot into a conversation.

[00103] To help organize the contacts in the roster user interface 700, instead of showing "All" contacts, a filtered view of the contacts may be provided based on filtered user meta-tags.

such as favorites 714, and contact presence status criteria, such as online 716. The contacts may be sorted as groups 718 which categorizes the contacts based on system meta-tags. Contacts in roster 250 as well as filtered views 714, 716, 718 on the roster user interface 700 may be further sorted by first name, last name, and company. For the contacts view sorted by groups, a specific group 720 may be defined with system meta-tags, such as "Brokers", and presented on the user interface with an appropriate label for dynamic data, such as the number of contacts online relative to the total number of contacts in that group. The system can distinguish between system tags, which are assigned to a user by an administrator and cannot be changed by a user, and user tags, which are assigned and controlled by a user to entries within their own roster. A user has full write control over his or her personal tags. Entries copied from the directory in service manager 120 to roster 250 retain any tags that are defined in the directory. For example, if a user copies the contact Fred from a Brokers group in the directory, Fred will appears in the Brokers group. With inheritance provisions, a user cannot remove or rename the Brokers system tag. As such, Fred will be permanently linked to show up in the Brokers group. However, a user can assign additional user tags to entries in their roster. For example, John may be assigned a Favorites tag. Then icon 722 on the roster user interface indicates that John is a favorite contact and John would appear in the favorites filtered view. Icon 722 may also denote the type of user contact, such as one using a Microsoft OCS (trademark) service that is federated through message hub 140.

[00104] As indicated in Figure 7, the roster view 700 preferably show contact 730 with aggregated presence data 732 which is the aggregated presence 234 of: a contact, with location data (for example, office, travel, and home), an indication whether contact 730 is on a mobile device 104B and summary count 734 of the number of active conversations that involve the contact 730. For certain user devices, such as a desktop computer with a keyboard, it may be more efficient for the user to interact with the roster user interface 700 entirely using a keyboard rather than mouse or multi-touch input. For instance, the user, such as a typical equity trader in financial services may use CMD 740 to open a command input interface allowing the user to type a command, such as "Chat Warren" to start a conversation with Warren without using the mouse to navigate the contacts in the roster.

[00105] Figure 8 shows details of an embodiment of an inbox user interface 800 for managing the user's inbox 260. Inbox user interface 800 shows the active conversations for a user with user profile 240. Inbox 800 may show indications of the number of active conversations and the number of conversations with unread messages 802. Each active

conversation 810 in the inbox 800 is an instance of the conversation 202. Inbox 800 may also present the active conversations and conversation invitations with filtered views 820, such as all, new (incoming conversation requests that has not yet been accepted or declined), queued (messages queued on client but not yet sent to transport), scheduled (conversations scheduled for delivery at a future date), received (conversations where the last message was received by the user), sent (conversations where the last message was sent by the user), one-to-one (conversations involving one or up to two participants excluding "bcc" participants), multi-party (conversations involving more than two participants), favorites (conversations that have been tagged as favorites) and recent (such as the most recent ten or so conversations that the user participated in). These filtered views 820 may be further sorted based on selected criteria, such as by date, subject, priority and flag.

[00106] Any conversation in inbox 800 may be marked with tags, such as a favorite, which would make such conversation appear in "favorites" filtered view 822. An active conversation 810 in the inbox 800 can show the number of new messages 812 in conversation 810 with timestamp of the last incoming message. For any given active conversation 810, the interface can show for the conversation, name of the participant 814, conversation subject 816 and avatar information 818 of the participant 814. Additional information, such as contact vCard and status text of the participant 814 may be presented through the user interface.

[00107] Inbox 800 can also provide indications as to whether the participant of a given active conversation 810 is on a mobile device via the aggregated presence and location status icon 830, if a given entry is a conversation or a request for conversation. Other indicators, such as icon 832, may be provided, which may denote a particular user as a favorite contact or if the conversation is a favorite conversation. Icon 832 may also denote the type of conversation, such as one with a contact using the Microsoft OCS (trademark) service that is federated through message hub 140. Each conversation in inbox 800 may be color coded based on certain criteria, such as the type of participants in the conversation, such as the traders and research analyst, specific conversation subject, conversation priority and flag and whether the participants involve just internal co-workers or may involve customers.

[00108] For certain user devices, such as a desktop computer with a keyboard, it may be more efficient for user to interact with inbox 800 using a keyboard rather than mouse or multi-touch input. The user may use CMD 840 to open a command input interface allowing the user to type a command, such as "open 5" to open up the fifth conversation on the inbox or "fav" to open up the filtered list of conversations marked as favorites. The inbox 800 may show a

summary of active conversations or as constrained by device memory and computing resources and retrieve or sync the conversation threads and messages from FE server 106 as needed by the user. Details of the conversation may be retrieved from message store 108 or from the archived conversations from the message archive 130.

[00109] Turning to Figure 9, further details are now provided on conversation dynamics of an embodiment. The originating user starts a conversation 202 on the conversation user interface 900 by entering the first message with an optional subject as well as optional conversation priority and flag. The originating user can also specify the invited participant 220 with a correspondence context 224, such as a "to", "cc", or "bcc", and assign the invited participant a role 222, such as "moderator", "member", or "viewer". When adding or inviting participants into a conversation, the active participants are listed in the "to" field; passive participants are listed in the "carbon copy" "cc" field; and silent participants are listed in the "blind carbon copy" "bcc" field. After the conversation invitation is sent, the invited users will see a request message in their inboxes. Upon opening the conversation invitation request, the recipient users have the option to open/accept or ignore the conversation. If a recipient user ignores the conversation, the conversation is rejected and an appropriate message is passed back to originating user. If the conversation request is accepted by a recipient user, the user and the participant then are allowed to converse in a message thread.

[00110] Through federating facilities via message hub 140, participants can communicate with SIP-based networks, such as OCS and Thomson Reuters messaging, and XMPP networks, such as Jabber and GoogleTalk (trade-marks). Variants in the participant types are handled through the roster user interface 700, variants in the conversation types are handled through the inbox user interface 800, and exception handling for the conversation involving participants of multiple services domains are handled in the conversation interface 900. For instance, if the contact is on OCS, restrictions mandate that the user cannot send a message to the OCS contact while the contact is offline, the user cannot be part of a multi-user conversation and messages sent to the online OCS contact will have corresponding "200 OK", but not actual "read" status receipts against each message. Further, for OCS contacts an OCS client cannot send "accept" on conversation invites from the users. In such cases, FE server 106 acts as a "proxy" which "accepts" the conversation invite on behalf of the OCS client as well as the user client.

[00111] In one embodiment, as a compliant messaging system, one-to-one conversations are declared private and conversation history is not shared. For multi-party conversations, the

system facilities sharing conversation history based on conversation threads. When participants are added to a multi-party conversation in progress, the inviter may choose to share the current message thread with the new participants. The new participants can scroll back in the conversation history and see all of the messages back to when the message thread began. If an inviter decides to share the current message thread, the active message thread is retained as active, the new participants are added to the conversation, the new participants can scroll back to whenever the message thread started and the current participants are told that the new participants are able to see the entire message thread. If the inviter decides not to share the current message thread, the current message thread ends, a new thread starts, the new participant is added to the conversation, the new participants can scroll back only to when they were added to the conversation and the current participants are informed that the new participant joined the conversation.

[00112] Figure 9 details an embodiment of a conversation user interface 900 for sending and receiving message in a conversation. Referencing the conversation user data model 200, conversation user interface 900 shows other participant's name 902, presence status and location meta-data and participant's user profile data, which may include avatar data 904. For multi-party conversation, a generic multi-party avatar image might be used, and only the name of first participant 902 on the current participant list is shown. In one embodiment, clicking or tapping onto avatar 904 may bring up a user interface to show the list of current participants along with the role of each participant and the correspondence context of each participant ("to", "cc", "bcc") in the conversation. The conversation interface 900 may also show the shared conversation subject, the shared conversation priority which may be indicated by icon 906, and a user defined non-shared conversation flag which may be indicated by icon 908. Some of these settings, such as the priority may only be set by the moderator. Further, only the participant that invited a given "bcc" a participant can see that "bcc" participant in the conversation's current participant list.

[00113] As an illustration of how active and closed threads are handled in conversation user interface 900, a conversation may contain a closed thread 910 and an active thread 940. In this example, closed thread 910 may contain a set of messages 912 sent by the user and a set of messages 914 received by the user in the conversation. For closed thread 910, message bundles 912 and 914 may be visually linked as being in the same thread via visual elements 916. For an outgoing message 920 sent by the user, the interface may show an icon indicating the message status receipt (such as pending, delivered, or read) with a timestamp 922

indicating the time the message was sent. After outgoing message 920 from the user is read by the recipient participant, the interface may show timestamp 924 indicating the time the message was read by the recipient participant. For an incoming message 930 received by the user, the interface may show an icon indicating the message status receipt with timestamp 932 indicating the time the message was originally sent and received on FE server 106, as well a timestamp 934 indicating the time that the message was read by the user. In terms of the handling for active thread 940, interface 900 may show latest message 942 with icon 944 that reflects the current status receipt (such as pending, delivered, and read) of message 942.

[00114] To allow the user to compose and send messages, conversation interface 900 provides a message entry field 950 along with action buttons for send 952, smiley, and file transfer. Within the message entry field 950, there may be grey text (auto dismiss once the user start typing a message) to indicate the total number of participants (excluding bcc) along with the total number of cc participants and the number of participants that are sent "bcc" messages by the user. Further, icon 956 may be provided within the message entry field 950 indicating the correspondence context of the user in the conversation interface 900. Icon 956 provides visual indication that if the user has correspondence context of "cc" or "bcc", then the user is expected to exercise appropriate discretion before participating in the conversation. To send a message to the participants in the conversation, the user simply enters the message within the entry field 950 and invokes "Send" 952. To provide visual indication of the user's role in the conversation, icon 954 will show whether the user is moderator, member or viewer. If the user is a viewer, the message entry field 950 is disabled to prevent the user from enter messages into the conversation.

[00115] To provide additional conversation context to the user, conversation interface 900 with specific messages in a conversation thread may be color coded based on certain criteria, such as the job function of the participant, such as trader or research analyst, or the corporate affiliation of the participant, such as someone within the same company or someone that may work for a customer or competitor.

[00116] In one embodiment, conversation interface 900 allows the user to toggle between conversation mode and embedded bot command mode. When in conversation mode, the user may leave the message entry field 950 empty and click "Send" button 952 which turns the message entry field 950 into a command entry field and changes the conversation interface into an embedded bot command mode. In an embedded command mode, the user may interact with embedded bots which provide autonomous functions to the user. Exemplary embedded

commands include "CALC 1234 * 4321" to perform a mathematical task, "TICKER MSFT, AAPL" to get a real time stock quote, or "WHOIS john.smith" to get a vCard profile of a user "John Smith". When in embedded command mode, the user may leave command entry field 950 empty and click "Send" button 952 which turns the command entry field back into a message entry field and resume the normal conversation mode. Visual indicator 954 is beside message entry field 950 and shows a command mode icon when in embedded command bot mode.

[00117] Other than user messages, conversation interface 900 also show system and user events 910, 940, such as subject change, thread closed, participant joining, and participant leaving the conversation. The system and user events are shown with the time and date when such event occurred. The user messages along with user and system events may be shown within demarcated threads 910, 940 using visual elements, such as link icons 916 to show the association of an event to a thread. These demarcated conversation threads may be visually expanded and collapsed. Each conversation thread may be shown with meta and header summary information, such as start and end times of the thread, the number of messages in the thread, the number of attachments, the number participants of in the conversation thread, the subject associated with the thread, message tags, thread conversation summary text, meta tags, etc.

[00118] For enhanced user experience, conversation interface 900 may present absolute and relative timestamps for the messages and events. For an incoming message 930 received by the user, the user may select to view the absolute time when the message was received by the system and the time when the message was read by the user. The user may also toggle the view to see the relative time (e.g. 2.5 hours ago) instead of the absolute time (e.g. Jan 1, 2011 5:15:22 AM). For each outgoing message 920 created and sent by the user, the user may select to view the absolute time when the message was sent and the time of the message's latest status. Similarly, the user may toggle to view the outgoing messages created by the user as relative time rather than absolute time.

[00119] The conversation interface 900 allows the user to easily navigate to other recent active or favorite conversations, and to create new conversations. Further, the conversation interface provides the contextual menu for user actions, depending on user permission, that allow the user to change the subject, invite a participant, end the thread, or end the conversation. For certain user devices, such as a desktop computer with a keyboard, it may be more efficient for user to interact with the conversation messaging interface entirely using a

keyboard rather than mouse or multi-touch input. The user may use CMD 960 to open a command input interface allowing the user to type a command, such as "subject market volatility" to change the subject to "market volatility", "part" to open the interface to view the list of current participants associated with the conversation, or "invite John" to open a pick list of roster contacts with the name "John".

[00120] Referring to Figure 10, details of viewing and accessing a conversation message from a user interface are provided. Also synchronization features of conversation data between client 104 and FE server 106 is provided. A layered structure of the conversation summary, the associated thread summary and the associated messages in each thread provides an efficient exchange of data between client 104 and server 106 and also provides efficient partitioning of each message thread within the conversation for message archiving and compliance controls. To provide improved user experience for thick clients, a portion of the conversation thread summary with portions of the conversation message data associated with the conversation thread may be pre-fetched from FE server 106 to client 104 on device 104B so that the data may be presented to the user instantaneously on a user's request.

[00121] With reference to the conversation user data model 200, when client 104 first loads the inbox data, client 104 retrieves via process 1010 a batch of "x" conversation summary of conversations "n" to "n – x" of "n" conversations that may be optionally based on certain filtered criteria from FE server 106 into inbox interface 800. For a thick client that can store conversation data in local storage, that client retrieves the recent conversation summary up to the older conversation data that is already persisted on the client device storage. If the user wants to retrieve the summary of older conversations, the user may request the client to retrieve additional conversation summary from FE server 106. For a thick client that has conversation summary data that was composed in an offline mode, the client can upload the offline mode conversation summary data to FE server 106 via process 1012, which then reconciles the conversation summary according to state transitions 500 and pushes the reconciled data to all applicable sessions of the user's client 104 and recipients of the conversation data. For instance, if the offline conversation summary data relate to a conversation that have since ended, the user will be prompted with the option to create a new conversation with the same participants using the conversation data that was composed in offline mode.

[00122] For a thick client that can store conversation summary in local storage, delta synchronization is used via process 1014 to only transfer the changes between the client and server to minimize bandwidth and battery usage. If the thick client contains outdated

conversation summary in its persistence storage, the conversation summary on the client will be reconciled as part of the delta synchronization process or purged from its local storage via process 1016.

[00123] From the Inbox interface 800, a user may open a conversation summary via process 1020 to retrieve a batch of "y" conversation thread summary 212 of conversation threads "m" to "m - y" of "m" conversation threads of the selected conversation from FE server 106 into a the conversation interface 900. If the user wants to retrieve the summary of older conversation threads, the user may request the client to retrieve additional conversation thread summary from FE server 106. For a thick client that has a persisted view of the conversation thread summaries, rather than retrieving in reverse order starting from the most recent conversation thread summary, the client may present the conversation thread summary from the position that was last viewed by the user. For a thick client that contains a conversation thread summary that was composed in offline mode, the client uploads the offline mode conversation thread summary data to FE server 106 via process 1022, which then reconciles the thread summary data according to state transitions 500, and pushes the reconciled data to all applicable sessions of the user's client 104 and recipients of the conversation thread data. For instance, if the offline conversation thread data relate to a conversation thread that was already closed, but the conversation is still active, the conversation data can be inserted into the latest active thread, or if no active thread exists, the offline conversation data can be inserted into a new conversation thread. If the thick client contains outdated conversation thread summary in its persistence storage, the conversation thread summary on the client can be reconciled as part of the delta synchronization process or purged from its local storage via process 1024.

[00124] From conversation interface 900, the user may open a conversation thread via process 1030 to retrieve a batch of "z" conversation messages 206 of messages "k" to "k – z" of "k" messages of the selected conversation thread from FE server 106 into the conversation interface. If the user wants to retrieve the older messages within the thread, the user may request the client to retrieve additional messages and events associated with the thread from FE server 106. For a thick client that has a persisted view of the conversation messages, rather than retrieving in reverse order starting from the most recent conversation message, the client may present the conversation message data from the position in the message data that was last viewed by the user. For a thick client that contains persisted conversation message data that was composed in offline mode, the client uploads the offline mode conversation message data to FE server 106 via process 1032, which then reconciles the conversation message data

according to state transitions 500 and pushes the reconciled data to all applicable sessions of the user's client 104.

[00125] For instance, if the same conversation thread is still active, the offline conversation messages associated with the thread may be inserted into the tail of the thread, but with reference indicators indicating that the message contextually refers to a prior message within the conversation thread. If the thick client contains outdated conversation message data in its persistence storage, the conversation message data on the client will be reconciled as part of the delta synchronization process or purged from its local storage via process 1034.

[00126] Turning to Figure 11, further details are now provided on conversation channels that are persistent conversations that user 199 with the required access rights may join to become a participant of the conversation channel. Conversation channels are based on conversation model 200 and are provisioned by service manager 120 and made accessible to user 199 via FE server 106. The user access policy including the administration of ethical rules via service manager 120 and the enforcement of the policy via FE server 106 relating to conversation channels messaging compliance are provided in separate disclosure.

[00127] In one embodiment, user 199 with user profile 240 accesses the conversation channels via user interface 1100. All of the authorized conversation channels provisioned for the user may be accessed via the "All" 1100 conversation channel filter, which may be further sorted, such as by date of last update. Additional filters may be provided to simplify the user interface including "Joined" which filters the conversation channels that the user has already joined as a participant, "Unread" which filters conversation channels in which is participant and contain messages unread by the user, "Recent" which filters recently added conversation channels which may be of interest to the user, "Feeds" which filters a view-only conversation channels that are data or message feeds where the user's role is a "viewer", and "Favorite" which filters conversation channels which the user have tagged as favorite.

[00128] Each conversation channel 1120 available to the user may be presented with the name of the channel 1124 along with the subject 1126 of the active conversation thread and a timestamp indicating last update. In addition, the channel may be presented with an avatar 1122 defined for the conversation channel and an indicator 1128 that shows the number of participants associated with the conversation channel. In one embodiment, additional information relating to the conversation channel, such as the channel profile, list of active participants, participants within the channel, shared meta-data relating to the channel, user

private meta-data relating to the channel and system meta-data relating to the channel may be provided by clicking on avatar 1122 of the conversation channel.

[00129] For conversation channels, interface 1100 can also provide indicators 1130 which can indicate the status of a conversation channel, such as the channel placed on "hold" by a participant or a participant sent an "interrupt" to mark the channel conversation. Other indicators, such as icon 1132 may be provided, which may denote a particular conversation channel as a favorite channel. Existing participants of a conversation channel may also invite new participants into the conversation. Invitation to conversation channels 1134 appear in both inbox interface 800 as well as conversation channel interface 1100. For certain user devices, such as a desktop computer with a keyboard, it may be more efficient for user to interact with conversation channels using a keyboard rather than mouse or multi-touch input. The user may use CMD 1140 to open a command input interface allowing the user to type a command, such as "fav" to open up the filtered list of channel conversations marked as favorites, or "search Swiss franc" which may search for all conversation channels relating to Swiss Franc currency.

[00130] Now, further details are provided on the compliance archiving of the message threads by an embodiment.

[00131] Each message thread in the conversation facilitates end-to-end message archive reconciliation and can be stored in a compliance archive, such as message archive 130. To ensure messaging compliance, message archive 130 or an equivalent external message archive is used to record conversations and any subsequent accesses to those conversations. Message archive 130 can provide adherence to regulatory requirements for electronic recordkeeping, such as SEC Rule 17a-4, NASD Conduct Rule 3110, NYSE Rule 440, and requirements for any Investment Advisors and Hedge Funds in the firm under SEC Rule 204-2. Further, message archive 130 provides an auditable, evidentiary-quality copy of each message as created, which is then indexed, serialized and time/date stamped, which can be stored for extended periods of time that meets regulatory requirements. The copy can be searched, recovered, or exported as needed by a compliance officer.

[00132] In one embodiment, message store 108 stores the user's active conversations and closed threads for a set period of time (e.g. up to thirty days) for the purpose of providing faster response to user conversation and thread data access. All message threads of ended conversations as well as closed threads of active conversations are routed for archive storage by FE server 106 to message archive 130 or an external archive via the message converter. Configurable by the system, blocks of messages within active threads may also be routed by FE

server 106 to message archive 130 for archive storage. Whenever blocks of messages are archived while a thread is still active, a system event is generated for end-to-end message archive reconciliation. It will be appreciated that message store 108 may also act as the long term message store for all conversation messages but interface through the message archive 130 for message flagging and various message compliance supervisory, e-discovery, and audit functions.

[00133] Figure 12 is an exemplary illustration of how a message thread may be bundled and stored in the compliant message archive. Referencing conversation user data model 200 of Figure 2, Figure 12 shows a message thread 1220 with its associated set of messages and events 1230 for a conversation 1210. Each thread 1220 along with its associated messages and events 1230 can be viewed as an archival message unit 1240, which can be routed for external delivery or stored in the compliant message archive 130. The archival message unit 1240 containing the thread data 1220 may be stored with the status 1222 (containing the priority, and flag, etc.) and summary 1224 (containing the participant list, user's role, user's correspondence context, such as "to", "cc" or "bcc", system events, such as closing of thread due to no user activity after a certain period of time, thread subject, the thread creation and close time, and the number of messages in the thread). The archival message unit 1240 containing the message and event data 1230 may be stored with the system header 1232 (containing the messageID, sent time, etc.) and the event 1234 (such as participant joins, departs and removes) or message 1236 (message text, files and attachments) with an optional message shared header 1238 (containing links, forms, etc.). The names of the participants, including those in a distribution list or desk in the archival message unit, are based on the participant's correspondence context.

[00134] For compliant message archiving, conversation data 1210 is preferably stored with the summary 1212 (such as creator of the conversation, conversation creation and end time, invitation accept or decline time, number of threads in the conversation, etc.), personal header 1214 (containing user folder, user tags, etc.) and shared header 1216 which provide metadata shared by participants (containing information, such as RIC or SIC codes, support ticket number, support ticket information, such as name and contact info, etc.) with references linking the conversation 1210 to its threads 1220. Through inbox interface 600, conversation interface 900 or conversation channel interface 1100, the user may also request the system to email the archival message unit to one or more of the participants in the conversation thread or to external email accounts. For simplicity, non-conversation events, such as change of the user status,

user session sign-in and sign-off, and profile change are logged by FE server 106 and stored the message archive 130 but not shown in Figure 12.

[00135] In one embodiment, each of the archival message units is stored in the message archive 130 in the indexed shared archive for fast search and a copy of the archival message unit is stored for each enterprise and "bcc" user. For example, if a conversation thread involves participants belonging to X enterprises needing compliance archive storage within message archive 130 and there are Y "bcc" participants in the conversation thread, then message archive 130 stores a copy in the indexed shared searchable archive, one copy into each of the X enterprise compliance archive and a further copy into each of the Y participants. This allows each of the X enterprises to search, access and export their own copy of the archival message unit for legal compliance purposes. Also each of the Y "bcc" users only sees a filtered copy of the archival message unit without other "bcc" participants on the list.

[00136] The archival message unit 1240 includes the thread and message text with attachments are immutable once received by FE server 106 but the status receipts 1239 associated with each message 1136 may still change even after the thread is closed or the conversation ended and after the message is stored in the message archive 130. As such, mutable data elements, such as the message status receipt are stored in a mutable dynamic data store module of message archive 130. When a user access the archived message 1236 from client 104, the message status receipt is updated accordingly (for example, from pending to delivered and read). If the user accesses the archived message from a different client, such as from a message archive interface, the user action is logged as part of the audit trail 1219 associated with the conversation in the message archive. Mutable data, such as conversation system folder in the system header 1218, and audit trail, such as user or compliance officer access, are preferably stored in the dynamic data store of the message archive 130. In general, mutable data are non-static aspects of the message, which includes message status receipts and message meta-data, such as message folder, message access trail, message retention period, client attorney privilege, compliance review flags, etc.

[00137] The various features described above may be implemented in, and fully automated by code modules executed by general-purpose computing devices, including but not limited to data center servers, PCs and mobile phones. The code modules may be stored in any type or types of computer storage device or memory. It should be understood that the various steps may alternatively be implemented in-whole or in-part within specially designed hardware.

[00138] It will be appreciated that all modules described herein for client 104, server 106 and other modules in the embodiments can be implemented using known programming techniques, languages and algorithms. Although the modules described are implemented in client 104 and server 106, it will be appreciated that some functions of the modules may be provided in a separate server that is in communication with clients 104 and / or server 106. The titles of the modules are provided as a convenience to provide labels and assign functions to certain modules. It is not required that each module perform only its functions as described above. As such, specific functionalities for each application may be moved between modules or separated into different modules. Modules may be contained within other modules. Different signaling techniques may be used to communicate information between applications using known programming techniques. Known data storage, access and update algorithms allow data to be shared between applications. It will further be appreciated that other applications and systems on client 104 may be executing concurrently with other modules. As such, any of modules (or parts thereof) may be structured to operate in as a "background" application on client 104 and server 106, respectively, using programming techniques known in the art.

[00139] It will be appreciated that the embodiments relating to clients, servers, services, state machines and systems may be implemented in a combination of electronic hardware, firmware and software. The firmware and software may be implemented as a series of processes, applications and/or modules that provide the functionalities described herein. The algorithms and processes described herein may be executed in different order(s). Interrupt routines may be used. Data may be stored in volatile and non-volatile devices described herein and may be updated by the hardware, firmware and/or software.

[00140] As used herein, the wording "and / or" is intended to represent an inclusive-or. That is, "X and / or Y" is intended to mean X or Y or both.

[00141] In this disclosure, where a threshold or measured value is provided as an approximate value (for example, when the threshold is qualified with the word "about"), a range of values will be understood to be valid for that value. For example, for a threshold stated as an approximate value, a range of about 25% larger and 25% smaller than the stated value may be used. Thresholds, values, measurements and dimensions of features are illustrative of embodiments and are not limiting unless noted. Further, as an example, a "sufficient" match with a given threshold may be a value that is within the provided threshold, having regard to the

approximate value applicable to the threshold and the understood range of values (over and under) that may be applied for that threshold.

[00142] Although this disclosure has been described in terms of certain embodiments and applications, other embodiments and applications that are apparent to those of ordinary skill in the art, including embodiments which do not provide all of the features and advantages set forth herein, are also within the scope of this disclosure. Accordingly, the scope of the present disclosure is intended to be defined only by reference to the following claims.

Claims

1. A method for processing messages sent from a client in a network, the method comprising:

for a message for a conversation to be transmitted from a client associated with a first user account of a plurality of user accounts associated with the network to a set of user accounts of the plurality of user accounts, upon activation of a command to send the message, sending to the set of user accounts a request message requesting acceptance of the conversation;

receiving replies from the set of user accounts to the request message; and

sending the message for the conversation to a first subset of accounts associated with the set of user accounts that generated an acceptance message for the request message and updating a message log associated with the conversation to indicate that the first subset of accounts has accepted the conversation as participants in the conversation.

2. The method of claim 1, further comprising:

not providing the message to a second subset of accounts associated with the set of user accounts that refused or did not respond to the request message; and

updating the conversation log to indicate that the second subset of accounts has not been sent the message.

3. The method of claim 1, further comprising:

associating a message thread with the message for the conversation and the participants, where responses to the message from the participants are included in the message thread; and

initiating a new message thread associated with the conversation when one participant of the participants forwards a message in the conversation to a new user account of the plurality of user accounts that is participating in the conversation, the new message thread including the new user account once the new user account accepts the conversation invitation message.

4. The method of claim 3, further comprising:

closing the message thread when one of the participants indicates that it is no longer participating in the message thread.

5. The method of claim 3, further comprising:

creating a second new message thread for a set of remaining participants in the conversation.

6. The method of claim 3, further comprising:

assigning the first user account with a moderator role, having authority to end the conversation, remove a participant of the participants from the conversation and change a role of another participant in the conversation;

assigning an account of another participant of the participants one of

a ghost reviewer with a moderator role, having authority to revoke the moderator role from the first user account and to send a warning message to any of the participants determined to have a compliance violation;

a member role having authority to at least write messages, change thread subject, transfer conversations and hold and resume conversations; and

a viewer role, having viewing restrictions on at least one of the messages, a list of the participants and a message thread history.

7. The method of claim 3, further comprising:

assigning an account of a participant of the participants identified in a "send to" field for the message as a contributor to the message thread;

assigning an account of a second participant of the participants identified in a "send cc" field for the message as a passive contributor to the message thread; and

assigning an account of a third participant of the participants identified in a "send bcc" field for the message as an invisible contributor to the message thread that cannot invite or initiate sending of blind copy of a message to other user accounts to the conversation.

8. The method of claim 3, further comprising:

closing the message thread and ending the conversation when either a command to end the conversation is issued by the first user or all participants have left the conversation.

9. The method of claim 3, further comprising:

transferring the conversation to an account of the plurality of user accounts outside the participants upon issuance of a transfer command from the first user account.

10. The method of claim 3, further comprising at least one of:

placing a hold on the message thread upon issuance of a hold command from the first user account, where new messages cannot be submitted to the message thread until the hold is removed;

interrupting the message thread upon issuance of a mark command from the first user account, where a new message from the first user account is provided at the mark point in the message thread;

seizing the message thread upon issuance of a seize command from the first user account, where the participants having only viewer role until the seized message thread is released by the first user account;

merging the message thread with a second message thread of a second conversation into a third message thread for a third conversation involving participants of the first and second conversations; and

splitting the conversation into first and second parts with a first subset of the participants assigned to the first part and a second subset of the participants assigned to the second part.

11. The method of claim 3, further comprising:

for each account of the first subset of accounts, maintaining message status data relating to the each account and updating the message status data to indicate whether the message has been:

received by the network;

received by the each account; and

opened by the each account.

12. The method of claim 3, further comprising:

tracking the conversation in a conversation channel, the conversation channel being discoverable by one of the plurality of accounts; and

where participant roles may be selectively set for the conversation channel to implement social communications such as greeting, walls, feed publishers and feed aggregators.

13. The method of claim 3, further comprising:

specifying a time-to-live time for the conversation indicating a deadline for acceptance of the request message,

wherein

if an account of the first subset of accounts accepts the message prior to the time-to-live time, the account is designated as a participant in the conversation; and

if the account accepts the message after the time-to-live time, the account is not permitted to participate in the conversation.

14. The method of claim 3, further comprising:

providing the message to the participants as either a plurality of one-to-one conversations, a plurality of multi-party conversations, a plurality of blast conversations, or a plurality of broadcast conversations.

15. The method of claim 3, further comprising:

providing access to the first user account through a second client in the network while maintaining access to the first user account through the client;

when the second client reconnects to the network after being disconnected from the network, reconciling any queued actions for the conversation, the message thread and the messages stored at the second client against a current state of the conversation, the message thread and the messages;

re-synchronizing the second client to the current state of the message conversation, the message thread and the messages.

updating a first status indicator in the message log with details whether the message has been sent from the second client; and

updating a second status indicator in the message log with details whether the message has been received or opened by the second client,

wherein the second client is a mobile device.

16. The method of claim 3, further comprising:

forwarding the message to an outside account of the plurality of accounts that is not in the first subset of accounts while a share conversation status is maintained for the outside account,

wherein:

the outside account is a contact in a roster associated with the first user account; and

messages within the conversation submitted by outside user account are formatted to appear to be submitted by the first user account or by the outside account on behalf of first user account.

17. A server for processing messages sent from a client in a network, the server comprising:

a message sending module to

send a message for a conversation to be transmitted from a client associated with a first user account of a plurality of user accounts associated with the network to a set of user accounts of the plurality of user accounts upon activation of a command to send the message;

send to the set of user accounts a request message requesting acceptance of the conversation;

receive replies from the set of user accounts to the request message; and

send the message for the conversation to a first subset of accounts associated with the set of user accounts that generated an acceptance message for the request message and updating a message log associated with the conversation to indicate that the first subset of accounts has accepted the conversation as participants in the conversation,

wherein

the message sending module

does not provide the message to a second subset of accounts associated with the set of user accounts that refused or did not respond to the request message and updating the conversation log to indicate that the second subset of accounts has not been sent message for the conversation;

associates a message thread with the message for the conversation and the participants, where responses to the message from the participants are included in the message thread;

closes the message thread when one of the participants indicates that it is no longer participating in the message thread; and

creates a new message thread for a set of remaining participants in the conversation.

18. The server for processing messages sent from a client in a network, as claimed in claim 17, further comprising:

a message archive server that assembles and stores data of an archive message unit for the conversation, the data comprising the message thread and messages associated with the conversation in a storage system,

wherein for the conversation, the data comprises summary data, system header data and personal header data.

19. The server for processing messages sent from a client in a network, as claimed in claim 18, wherein the message archive server further:

updates a message log associated with the conversation when the client accesses the data of the archive message unit.

Figure 1

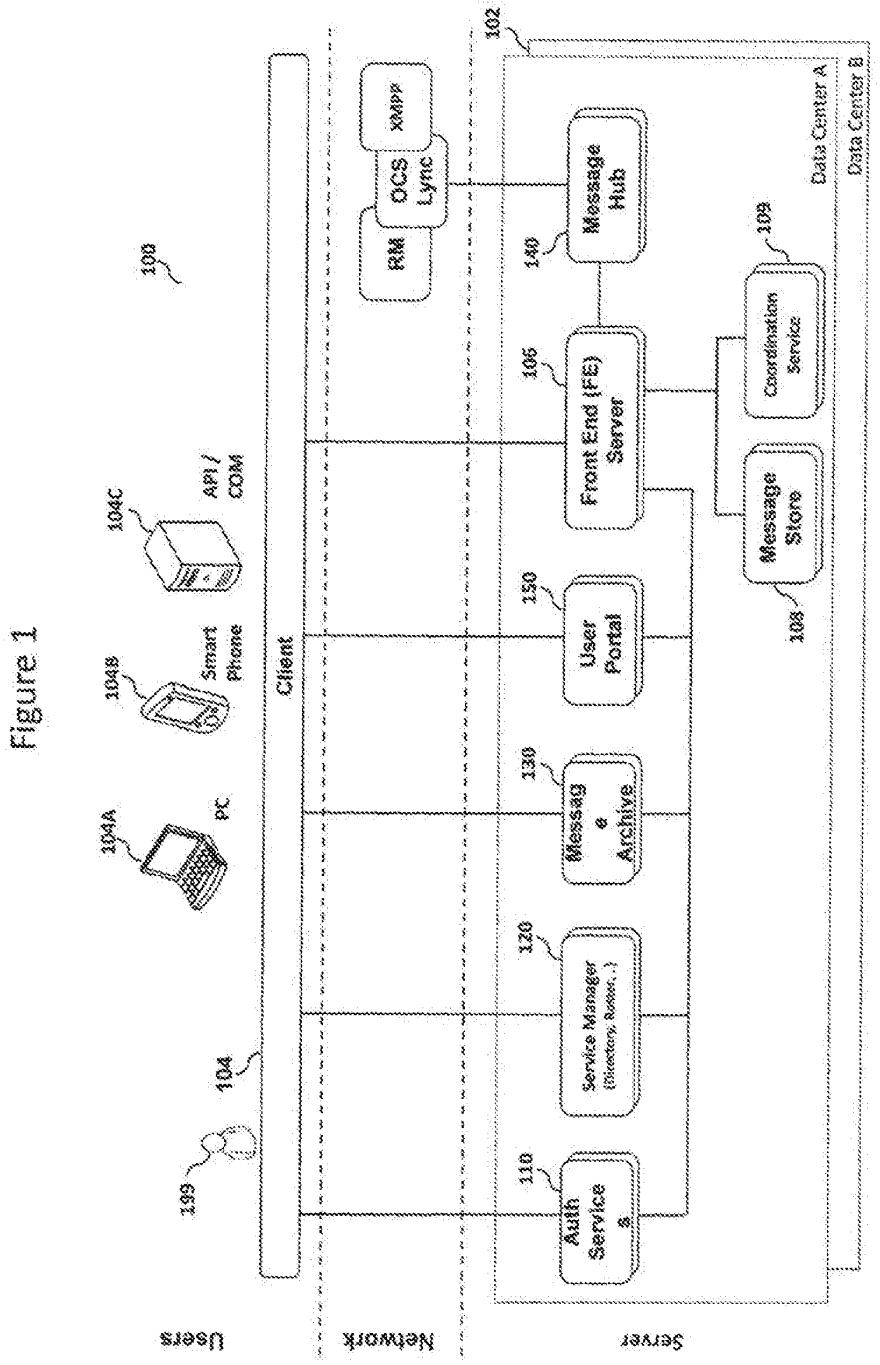

Users
Network
Server
Client
100
102
Data Center A
Data Center B
104
104A
PC
104B
Smart Phone
104C
API / COM
XMPP
OCS Lync
RM
Message Hub
140
Coordination Service
109
Front End (FE) Server
106
Message Store
108
User Portal
150
Messag e Archive
130
Service Manager (Directory, Router, ...)
120
Auth Service
110
199

Figure 2

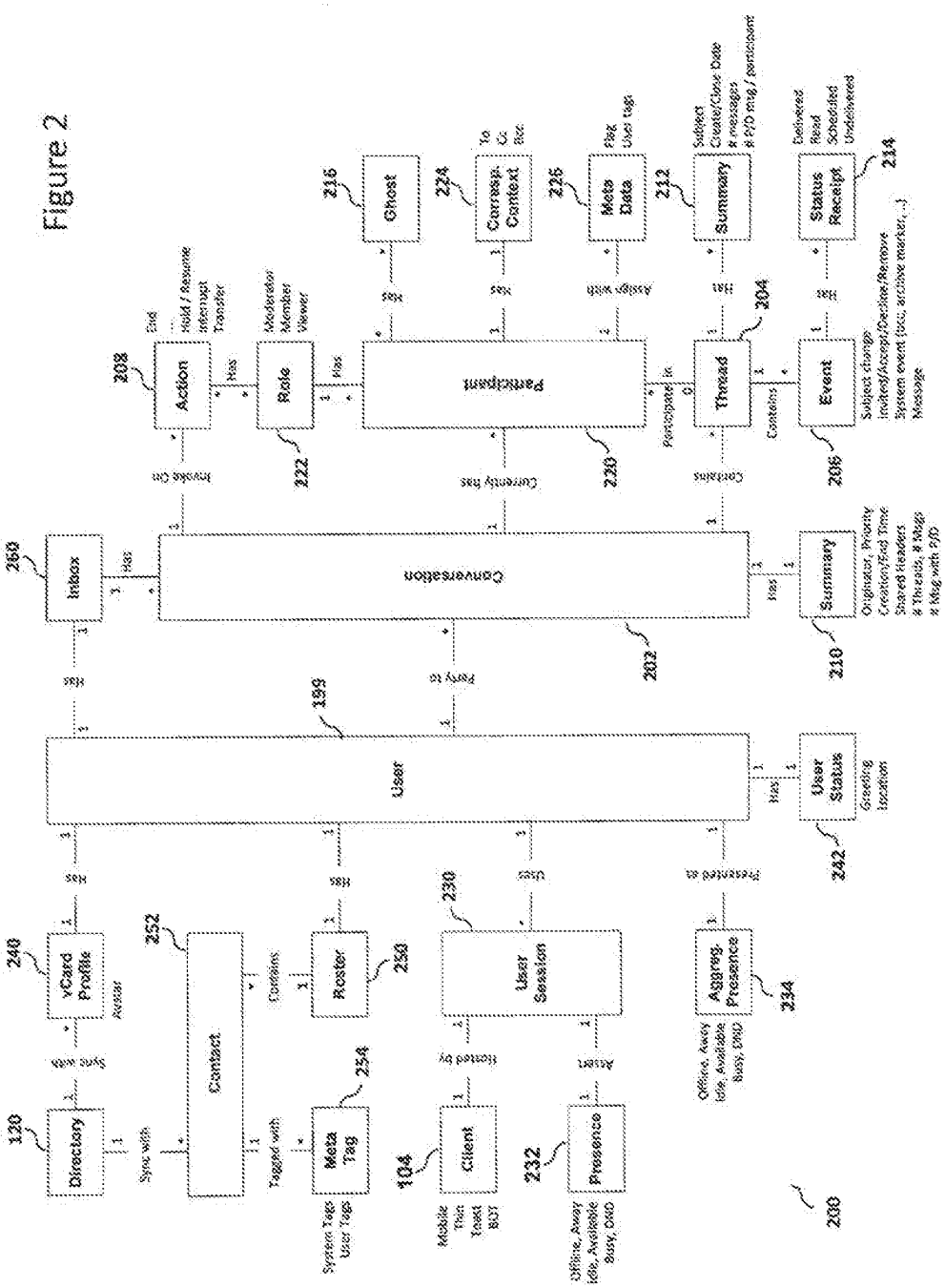

User
Conversation
Inbox
Thread
Event
Summary
Participant
Action
Role
Ghost
Corresp. Context
Meta Data
Summary
Status Receipt
Summary
User Status
Aggreg. Presence
User Session
Presence
Client
Meta Tag
Roster
Contact
vCard Profile
Directory
200

Figure 3

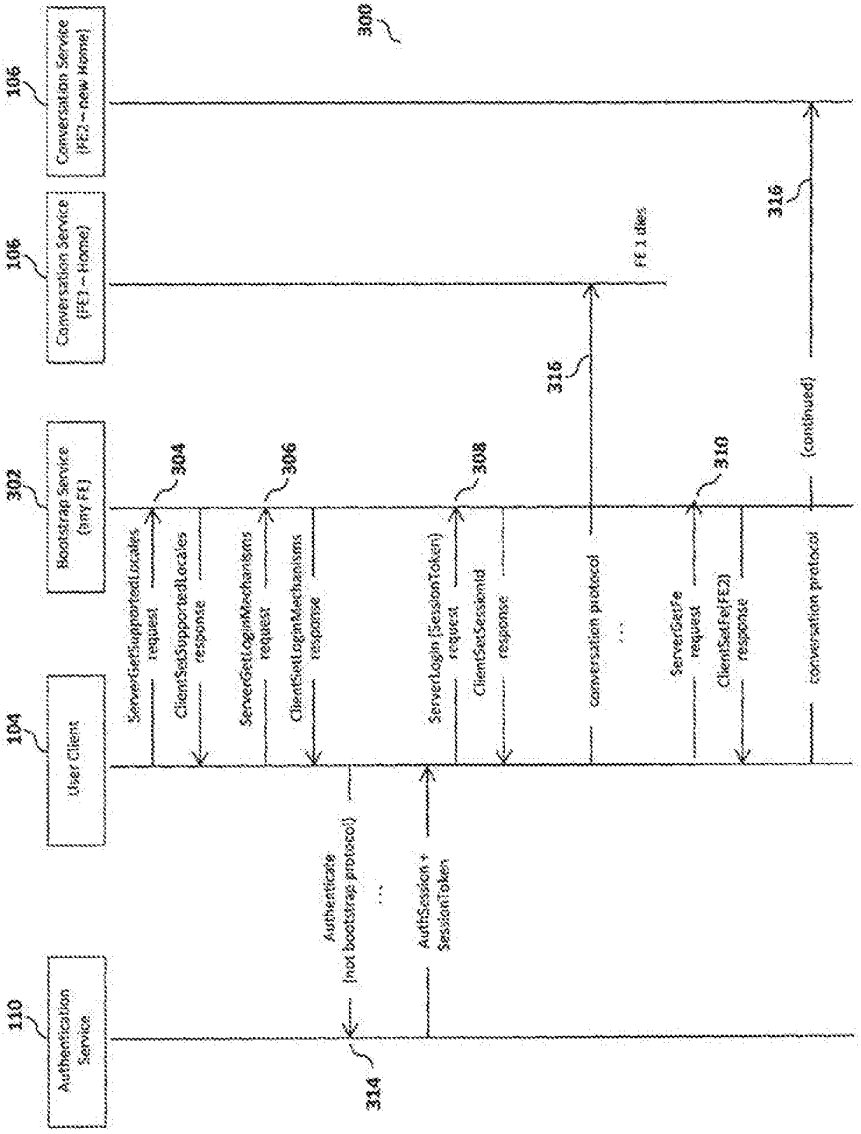

300
102
Bootstrap Service (any FE)
106
Conversation Service (FE2 – new Home)
106
Conversation Service (FE1 – Home)
104
User Client
110
Authentication Service
ServerGetSupportedLocales request
304
ClientGetSupportedLocales response
ServerGetLoginMechanisms request
306
ClientGetLoginMechanisms response
ServerLogin (SessionToken) request
308
ClientGetSessionId response
conversation protocol
316
FE 1 dies
ServerGetFe request
310
ClientSetFe(FE2) response
316
(continued)
conversation protocol
Authenticate (not bootstrap protocol)
AuthSession + SessionToken
314

Figure 4

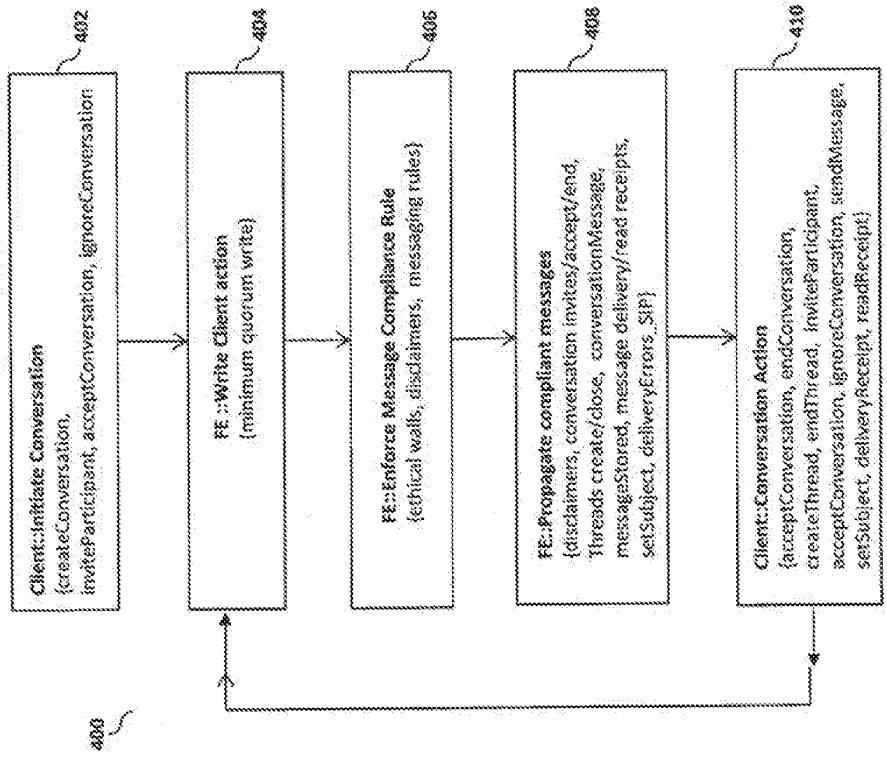

402
Client::Initiate Conversation
{createConversation,
inviteParticipant, acceptConversation, ignoreConversation
404
FE::Write Client action
{minimum quorum write}
406
FE::Enforce Message Compliance Rule
{ethical walls, disclaimers, messaging rules}
408
FE::Propagate compliant messages
{disclaimers, conversation invites/accept/end,
Threads create/close, conversationMessage,
messageStored, message delivery/read receipts,
setSubject, deliveryErrors_SIP}
410
Client::Conversation Action
{acceptConversation, endConversation,
createThread, endThread, inviteParticipant,
acceptConversation, ignoreConversation, sendMessage,
setSubject, deliveryReceipt, readReceipt}
400

Figure 5

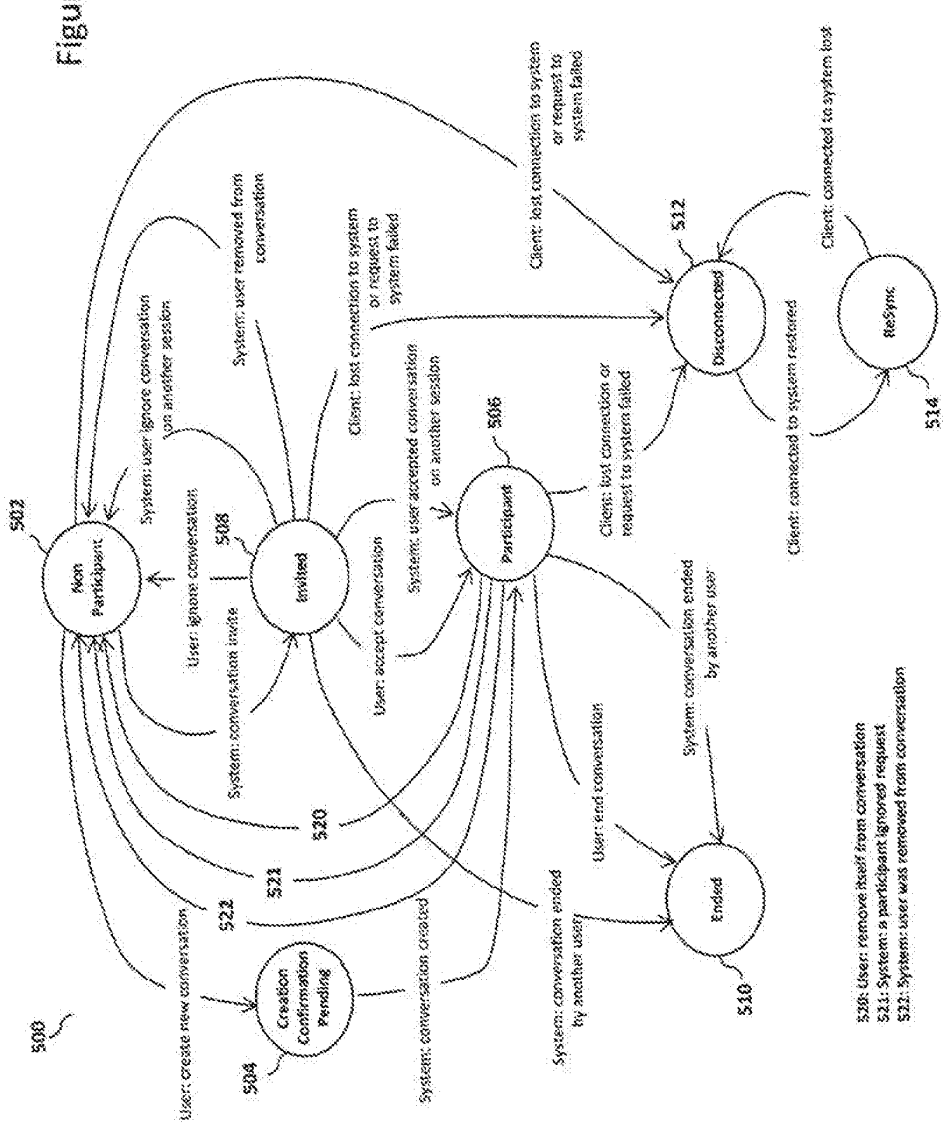
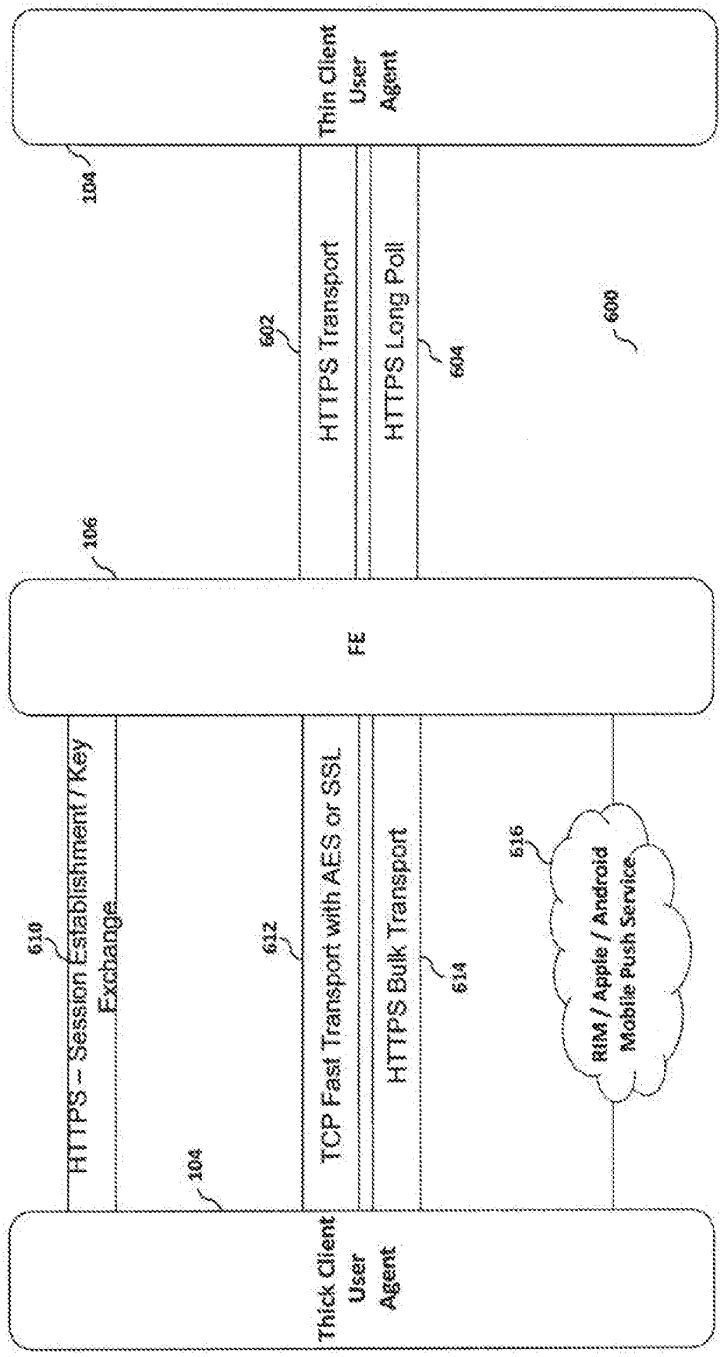

500
Non Participant
502
Invited
508
Participant
506
Creation Confirmation Pending
504
Ended
510
Disconnected
512
ReSync
514
User: create new conversation
System: conversation created
User: ignore conversation
System: user ignore conversation on another session
System: conversation invite
User: accept conversation
System: user accepted conversation on another session
System: user removed from conversation
User: end conversation
System: conversation ended by another user
System: conversation ended by another user
Client: lost connection to system or request to system failed
Client: lost connection to system or request to system failed
Client: lost connection or request to system failed
Client: connected to system restored
Client: connected to system lost
520
521
522
538: User: remove itself from conversation
521: System: a participant ignored request
521: System: user was removed from conversation

Figure 6


Thin Client User Agent
104
602
HTTPS Transport
HTTPS Long Poll
604
600
106
FE
610
HTTPS – Session Establishment / Key Exchange
612
TCP Fast Transport with AES or SSL
HTTPS Bulk Transport
614
616
RIM / Apple / Android Mobile Push Service
104
Thick Client User Agent

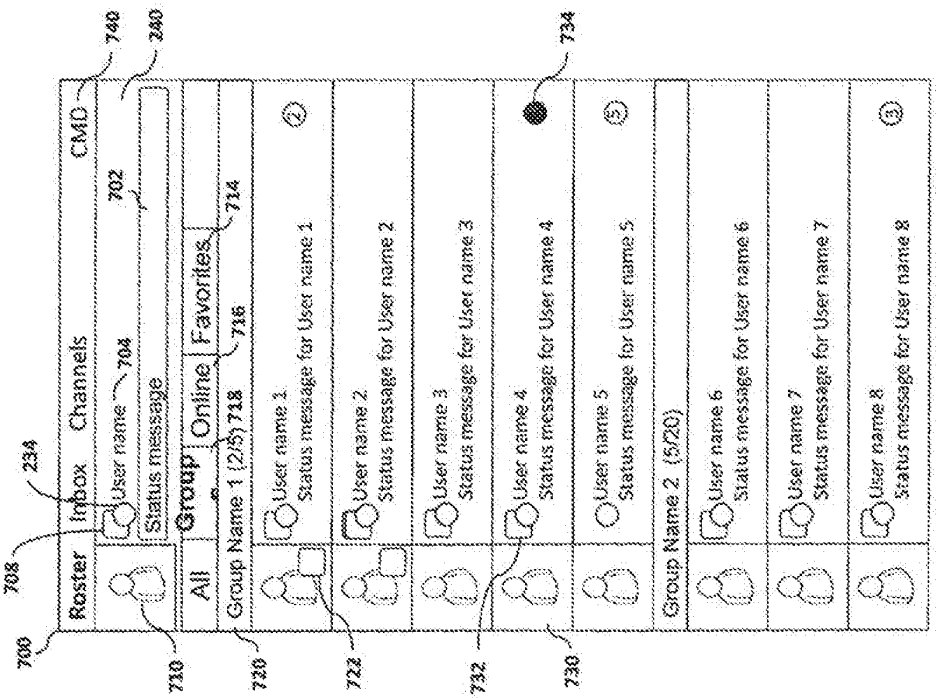

Roster
Inbox
Channels
CMD
User name
Status message
All
Group
Online
Favorites
Group Name 1 (2/5)
User name 1
Status message for User name 1
User name 2
Status message for User name 2
User name 3
Status message for User name 3
User name 4
Status message for User name 4
User name 5
Status message for User name 5
Group Name 2 (5/20)
User name 6
Status message for User name 6
User name 7
Status message for User name 7
User name 8
Status message for User name 8
700
702
704
708
710
712
714
716
718
720
722
730
732
734
740
240
234

Figure 7

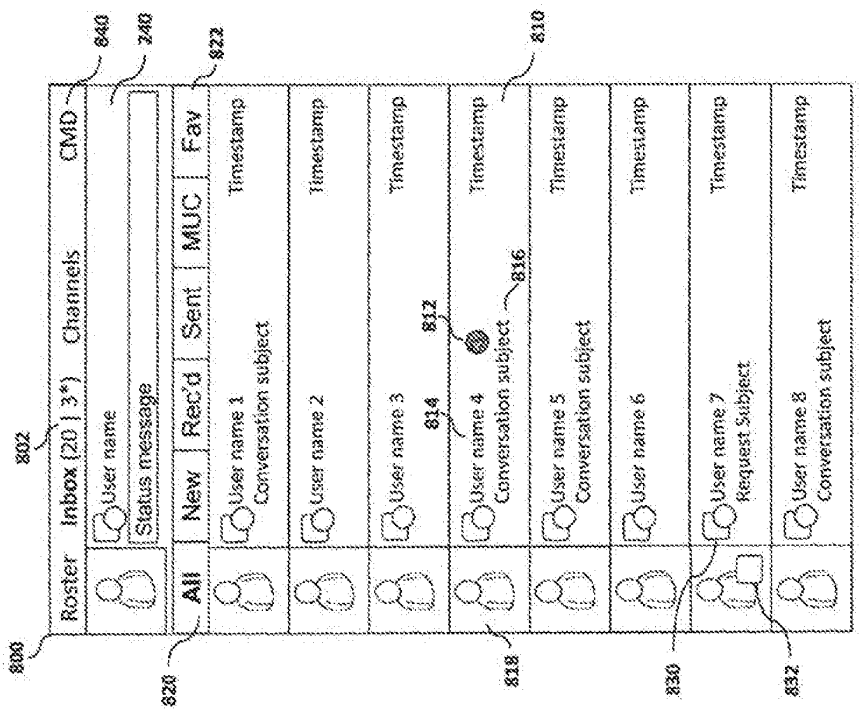

800
802
Roster
Inbox (20 | 3*)
Channels
CMD
840
User name
Status message
240
820
All
New
Rec'd
Sent
MUC
Fav
822
User name 1
Conversation subject
Timestamp
User name 2
Timestamp
User name 3
Timestamp
814
812
User name 4
Conversation subject
Timestamp
816
810
User name 5
Conversation subject
Timestamp
User name 6
Timestamp
User name 7
Request Subject
Timestamp
User name 8
Conversation subject
Timestamp
818
830
832

Figure 8

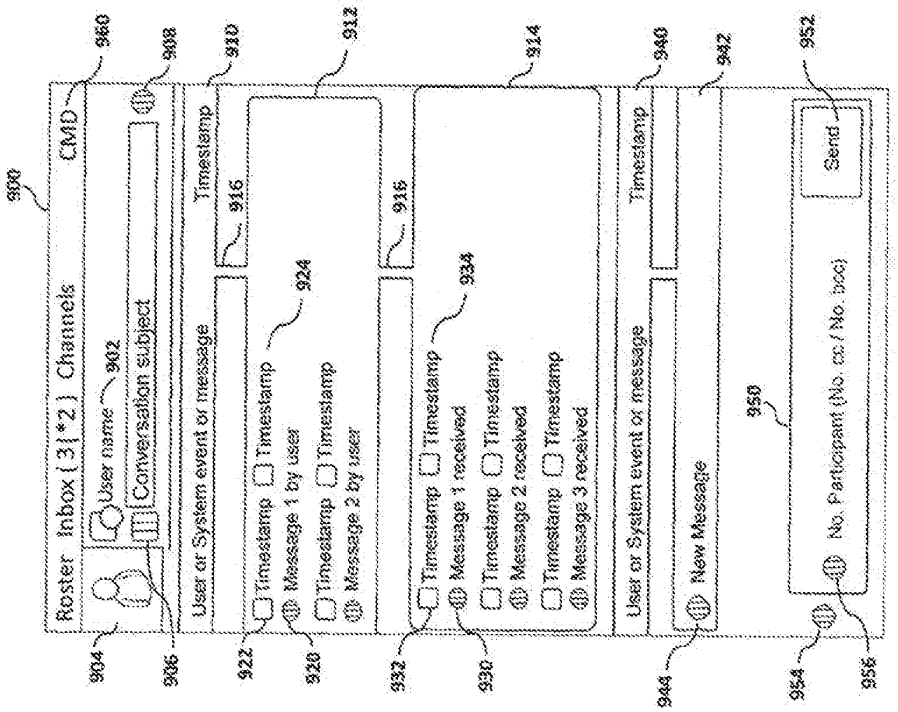
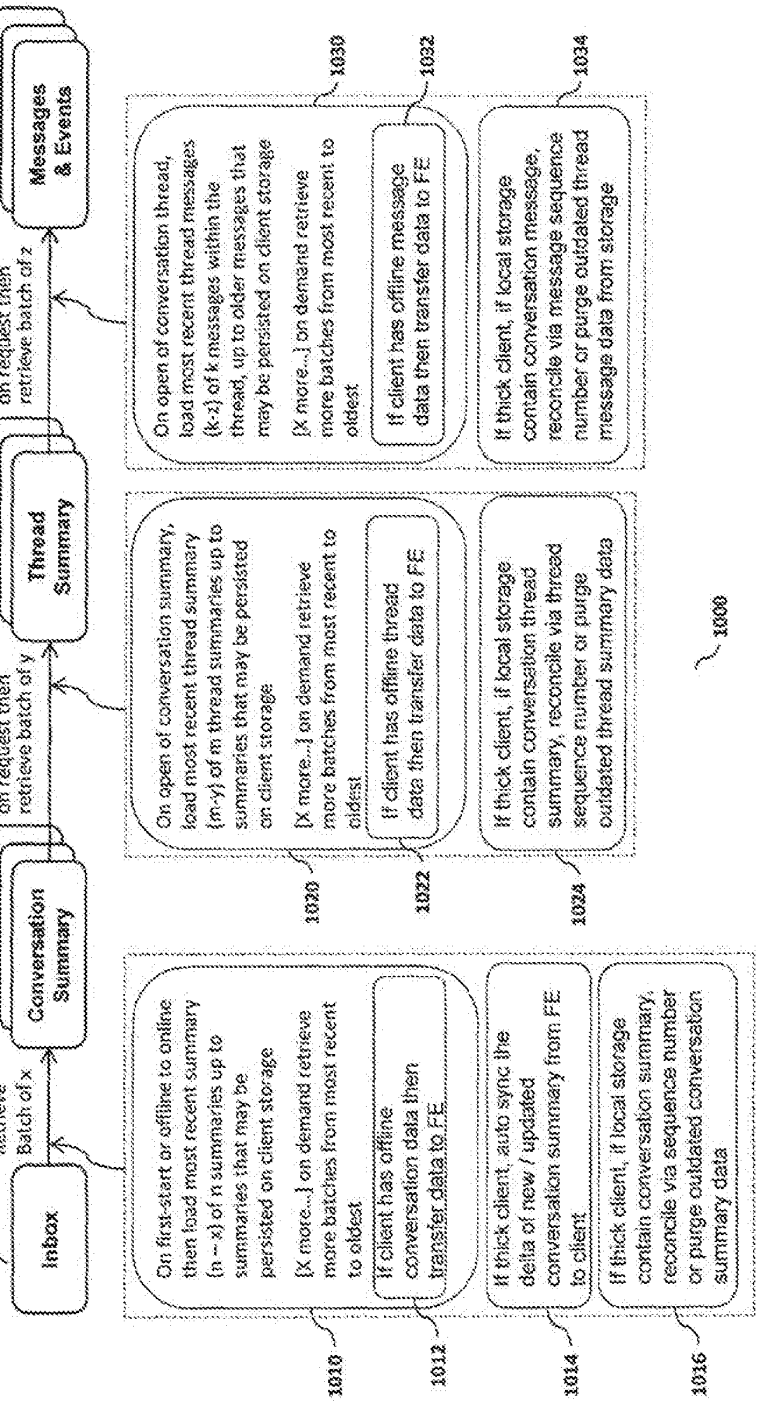

900
Roster
Inbox (3|*2)
Channels
CMD
960
User name
902
Conversation subject
908
904
906
User or System event or message
Timestamp
910
916
922
Timestamp
Message 1 by user
924
912
920
Timestamp
Message 2 by user
916
932
Timestamp
Message 1 received
934
914
930
Timestamp
Message 2 received
Timestamp
Message 3 received
User or System event or message
Timestamp
940
942
944
New Message
950
952
954
No. Participant (No. cc / No. bcc)
Send
956

Figure 9

Figure 10


Inbox
260
Retrieve Batch of x
Conversation Summary
210
on request then retrieve batch of y
Thread Summary
212
on request then retrieve batch of z
Messages & Events
206
On first-start or offline to online then load most recent summary (n – x) of n summaries up to summaries that may be persisted on client storage
[X more...] on demand retrieve more batches from most recent to oldest
If client has offline conversation data then transfer data to FE
1010
1012
If thick client, auto sync the delta of new / updated conversation summary from FE to client
1014
If thick client, if local storage contain conversation summary, reconcile via sequence number or purge outdated conversation summary data
1016
On open of conversation summary, load most recent thread summary (m-y) of m thread summaries up to summaries that may be persisted on client storage
[X more...] on demand retrieve more batches from most recent to oldest
If client has offline thread data then transfer data to FE
1020
1022
If thick client, if local storage contain conversation thread summary, reconcile via thread sequence number or purge outdated thread summary data
1024
On open of conversation thread, load most recent thread messages (k-z) of k messages within the thread, up to older messages that may be persisted on client storage
[X more...] on demand retrieve more batches from most recent to oldest
If client has offline message data then transfer data to FE
1030
1032
If thick client, if local storage contain conversation message, reconcile via message sequence number or purge outdated thread message data from storage
1034
1000

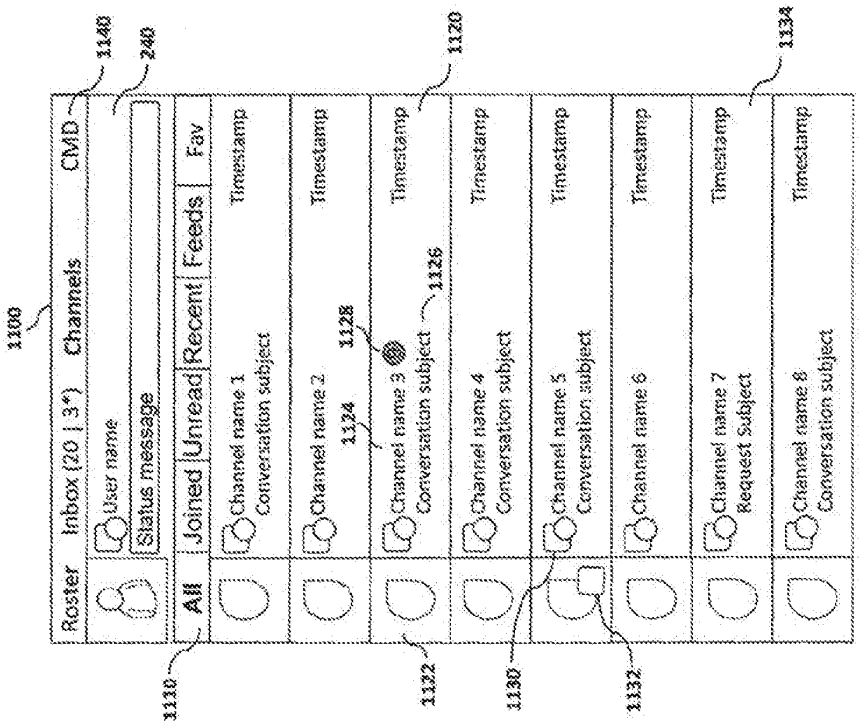
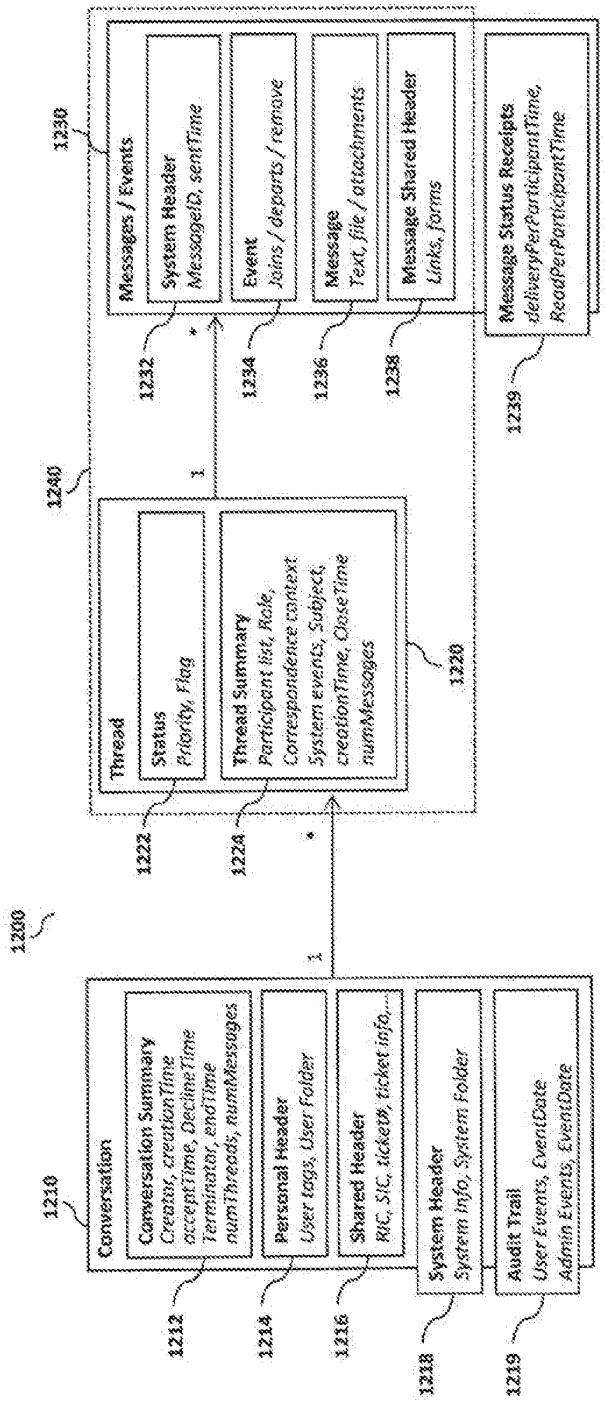

1100
Roster
Inbox (20 | 3*)
Channels
CMD
1140
240
User name
Status message
All
Joined
Unread
Recent
Feeds
Fav
Channel name 1
Conversation subject
Timestamp
Channel name 2
1124
1128
Channel name 3
Conversation subject
1126
1120
Channel name 4
Conversation subject
Channel name 5
Conversation subject
Channel name 6
Channel name 7
Request Subject
1134
Channel name 8
Conversation subject
1110
1122
1130
1132

Figure 11

Figure 12


1200
1210
Conversation
Conversation Summary
Creator, creationTime
acceptTime, DeclineTime
Terminator, endTime
numThreads, numMessages
Personal Header
User tags, User Folder
Shared Header
RIC, SIC, ticket#, ticket info...
System Header
System info, System Folder
Audit Trail
User Events, EventDate
Admin Events, EventDate
1212
1214
1216
1218
1219
1220
Thread Summary
Participant list, Role,
Correspondence context
System events, Subject,
creationTime, CloseTime
numMessages
1222
Status
Priority, Flag
1224
1230
Messages / Events
System Header
MessageID, sentTime
Event
Joins / departs / remove
Message
Text, file / attachments
Message Shared Header
Links, forms
Message Status Receipts
deliveryPerParticipantTime,
ReadPerParticipantTime
1232
1234
1236
1238
1239
1240
Thread
1
*
1
*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2013/000077

A. CLASSIFICATION OF SUBJECT MATTER
IPC: ***H04L 12/58*** (2006.01) , ***G06Q 10/10*** (2012.01) , ***H04L 12/18*** (2006.01) , ***H04L 12/24*** (2006.01) , ***H04L 12/26*** (2006.01)
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: ***H04L 12/58*** (2006.01) , ***G06Q 10/10*** (2012.01) , ***H04L 12/18*** (2006.01) , ***H04L 12/24*** (2006.01) , ***H04L 12/26*** (2006.01)

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

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
database: intellect, Epoque, totalPatent
keywords: chat, message track, message control, reject, timer, log, thread, accept, reject, ghost

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2010/0029312 (Smith et al.) 4 February 2010 (04-02-2010) see the whole document, especially: Abstract; Figs. 4-9; Paragraphs 0005-0007; 0017-0018; 0068-0106; 0116-0120; 0130-0148	1-19
Y	US 7519730 (Bailey et al.) 14 April 2009 (14-04-2009) see the whole document, especially: Abstract	9, 15-16
A	US 2011/0153759 (Sanchez) 23 June 2011 (23-06-2011) see the whole document	1-19
A	US 2011/0151899 (Platt et al.) 23 June 2011 (23-06-2011) see the whole document	1-19

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

Date of the actual completion of the international search	Date of mailing of the international search report
April 2, 2013 (28-03-2013)	02 April 2013 (02-04-2013)
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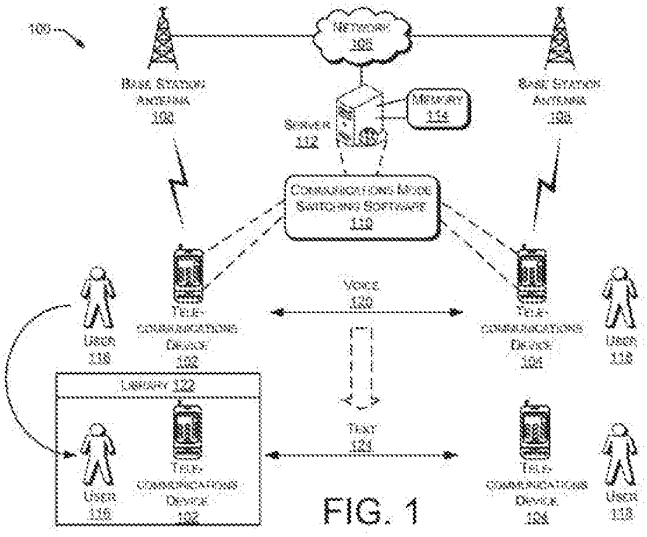


FIG. 1

(57) Abstract: Techniques for switching between communication modes on a telecommunications device are described. A telecommunications device creates a logical communication session between itself and another device. The logical communication session accommodates multiple communication modes and multiple communication protocols. The techniques described in this disclosure provide for ways to transition a communication from one communication mode to another communication mode with minimal user input and minimal connection delay.

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COMMUNICATION MODE SWAPPING FOR TELECOMMUNICATIONS DEVICES

BACKGROUND

[0001] Over the past thirty years, telephony has significantly evolved from the once-ubiquitous public switched telephone service (PSTN). Telecommunications consumers today have a wide range of telecommunications options to choose from, including traditional landline phone service, IP-based telecommunications services (based on, for example, Voice over Internet Protocol), cellular telecommunications services, and converged telecommunications services (such as Unlicensed Mobile Access or UMA).

[0002] Telecommunications devices now consist in a myriad of form factors, such as traditional landline phones, cordless phones, cellular phones, smart phones, PDA phones, desktop and portable computers, media players, home telecommunications hubs, or the like (hereinafter "telecommunications devices"), which have become a ubiquitous part of modern life. Originally, most of these telecommunications devices just provided two-way voice communication between a first person at a first location using a first telecommunication device and a second person at a second location using a second telecommunication device, so that the first person and the second person were able to carry on a conversation. For example, a voice communication or call normally involved real-time, duplex, synchronous voice communications, in which all participants hear the other participants in real time, all participants can simultaneously speak, and all participants are actively engaged and respond directly and immediately to each other without significant interruption.

[0003] More recently, telecommunication devices are frequently capable of both voice and data communications, using various modes of such communications. Email, text messages (e.g., Short Message Service or SMS), and multimedia messages

(e.g., Multimedia Messaging Service or MMS) are well-known forms of asynchronous data communications. Email was originally used with computers, but is now commonly sent and received through telecommunications devices as well. SMS text messaging has been used for many years in the area of cellular telecommunications. Participants are typically engaged in the communications at different times, and their participation might occur as a number of small, non-contiguous, asynchronous interactions.

[0004] In addition to person-to-person communications, many modern telecommunications devices are capable of other types of data communications through access to the Internet and other databases. For example, many telecommunication devices have built-in web browsers for Internet navigation.

[0005] Voicemail is another voice communications mode, in which a caller leaves a recorded message for a recipient. The recipient listens and responds to a voicemail message at his or her leisure. Because of the time lag between leaving the message and actually listening or responding to the message, this communications mode is referred to as asynchronous.

[0006] It should be noted that both voice and data communications might be implemented using the same wireless and IP-based technologies. In some situations, particularly with conventional cellular or IP-based systems, voice might be communicated using a proprietary cellular protocol, while data and non-voice communications are based on other protocols carried over a cellular and/or an IP-based telecommunications network.

[0007] Telecommunications devices vary in complexity and capabilities, from simple devices that support only voice communications, to very sophisticated devices with capabilities of personal computers. Higher-end telecommunication devices are identified to include smart phones but increasingly include desktop and portable

computers. These include telecommunication devices that typically have an operating system executed from some form of solid-state memory by one or more processors.

[0008] It would be advantageous to enhance the usability of telecommunications devices, particularly with respect to the multiple communication modes currently available. Improving usability of telecommunications devices is challenging given the form factor limitations inherent in a mobile device and the limitations of networks currently in place for delivering signals to telecommunications devices.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The detailed description is described with reference to the accompanying figures, in which the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items.

[0010] FIG. 1 illustrates an example architecture in which a telecommunications device switches between communication modes.

[0011] FIG. 2 is a block diagram showing various components of an illustrative telecommunications device.

[0012] FIG. 3 illustrates a representation of a logical communication session between two telecommunications devices.

[0013] FIG. 4 is an example user interface of a telecommunications device.

[0014] FIG. 5 is an example user interface of a telecommunications device.

[0015] FIG. 6 is a flow diagram of a process for switching communication modes.

DETAILED DESCRIPTION

[0016] This disclosure is directed to systems and methods for enabling one or more users of telecommunications devices to switch between communication modes on a telecommunications device.

[0017] Telecommunications devices offer multiple modes of communication and are capable of communicating with multiple types of recipient devices. For instance, a user of a telecommunications device may communicate with a user of another telecommunications device by voice, video with voice, text messages (e.g., Short Message Service or SMS messages), multimedia messages including audio, images or video (e.g., Multimedia Message Service or MMS), email, instant messaging, etc. In other instances the user of the telecommunications device may communicate with a user of a device having fewer modes of communication such as a landline phone capable only of voice communication or a text pager capable of only text messaging and email. In instances where the telecommunications device and a recipient device share at least two modes of communication it is possible for the users of the respective devices to switch between modes of communication.

[0018] A "conversation" as used herein is a connected flow or sequence of discrete or continuous communications between telecommunications devices regardless of the mode of the communications. Generally, a conversation is between two or more participants. In most cases, a conversation is initiated by one of the participants, and ends when all participants remove themselves from the conversation. However, a conversation can also be initiated programmatically between participants. In addition, participants can often be added or removed during the conversation.

[0019] The systems and methods described in this disclosure provide ways for users to transition between communication modes. Seamless transitions between

communication modes allow users to easily continue a conversation in different communication modes with a minimum of user input.

[0020] Seamless transitions are enabled by creating a logical communication session between telecommunications devices. The logical communication session is an aggregation of multiple communication modes, each potentially communicating with multiple communication protocols and communicating over multiple networks. Once a logical communication session is established, seamless transition between any of the communication modes within that logical communication session becomes possible. Creation of the logical communication session may involve software on telecommunication devices that present a user interface which groups disparate communication modes together so that users perceive seamless switching between communication modes.

[0021] The systems and methods described herein may be implemented in a number of ways. Example implementations are provided below with reference to the following figures.

EXAMPLE NETWORK ARCHITECTURE

[0022] FIG. 1 illustrates an exemplary architecture 100 for implementing communication mode switching on telecommunications devices. The exemplary architecture 100 shows, telecommunications devices 102, 104. Telecommunications devices 102, 104 are capable of connecting to one or more networks, as represented by network 106.

[0023] The network 106 is representative of any one or combination of multiple different types of networks, interconnected with each other and functioning as a single large network (e.g., circuit-switched telephone networks or IP-based packet-switch networks). The network 106 may also include wire-based networks

(e.g., PSTN, IP-based, etc.) and wireless networks (e.g., cellular, satellite, IP-based, etc.). In the case of wireless networks, the network 106 may be accessed by the telecommunications devices 102, 104 via a base station antenna 108 for receiving and transmitting wireless signals. The network 106 may use any number of protocols and configurations to enable the telecommunications devices 102, 104 to access other devices and resources. The network 106 may include several types of circuit-switched telephone networks, such as Public Switched Telephone Network (PSTN) and packet-switched networks, such as the Internet. For example, the network 106 may include a Global System for Mobile Communication (GSM) network, a Code Division Multiple Access (CDMA) network, an Enhanced Data Rates for GSM Evolution (EDGE) network, a Universal Mobile Telecommunications System (UMTS) network and/or other types of circuit-switched networks, a Long Term Evolution (LTE) network, the Internet, and/or other packet-switched networks. The network 106 may also include private networks such as a mobile telephone operator's networks which may use proprietary systems or protocols that are different from the systems or protocols implemented on public networks.

[0024] Each of the telecommunications devices 102, 104 may include a display with a user interface (UI) for switching between communication modes. The communication mode switching UI is implemented as part of communication mode switching software 110 that is stored and executed by the telecommunications devices 102, 104, or alternatively, as functionality served at least in part from servers 112 in the network 106. A more detailed discussion of the user interfaces is described below with reference to FIGS. 4-5.

[0025] In the implementation in which the servers 112 store and execute communication mode switching software, the software is stored in memory 114 of the servers 112. The memory 114 may include volatile memory (such as RAM),

nonvolatile memory, removable memory, and/or non-removable memory, implemented in any method or technology for storage of information. Also, a processor may include onboard memory in addition to or instead of the memory 114. Some examples of computer-readable storage media which may be included in the memory, and/or processor include, but are not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information.

[0026] The architecture 100 also shows a user 116 of telecommunications device 102. Suppose that the user 116 initiates a voice communication with another user 118 of another telecommunications device 104. The user 116 begins a conversation with the other user 118 by using a "voice" communications mode 120. Subsequently, the user 116 enters a building where voice communication 120 is unavailable or undesirable (e.g., a library 122). Telecommunications device 102 switches from a voice mode of communication 120 to a text mode of communication 124. The switching may be responsive to an input from the user 116 or alternatively the telecommunications device 102 may switch communication modes automatically (e.g., due to awareness, via GPS or otherwise, that it is in a library).

[0027] The other telecommunications device 104 makes a corresponding switch to the text mode of communication 124 in order to continue the conversation. The switch of communication modes on the other telecommunications device 104 may also be automatic in response to the telecommunications device 102 switching to a text mode of communication 124, or alternatively the other telecommunications device 104 may accept an input from the other user 118 (e.g., accepting the new communication mode) before switching to the text mode of communication 124.

TELECOMMUNICATIONS DEVICE

[0028] FIG. 2 shows a telecommunications device 200 such as might be used in conjunction with the techniques described here. In many cases, device 200 will be what is commonly referred to as a "cell phone," although the described techniques can be used in conjunction with any telecommunications device.

[0029] Telecommunications devices are frequently capable of both voice and data communications, using various different modes of such communications. A conventional telephone call normally involves real-time, duplex, synchronous voice communications, in which all participants hear the other participants in real time, all participants can simultaneously speak, and all participants are actively engaged and respond directly and immediately to each other without significant interruption.

[0030] Email, SMS and MMS are well-known forms of non-voice asynchronous communications. Email was originally used with computers, but is now commonly sent and received through telecommunications devices, such as cell phones. SMS text messaging has been used for many years in conjunction with cell phones, and more recently MMS multimedia messaging has been introduced to facilitate transmission of multimedia content, such as audio, images and video. Users of telecommunications devices are typically engaged in asynchronous communications at different times, and their participation might occur as a number of small, non-contiguous, non-simultaneous interactions.

[0031] Note that both voice and non-voice communications might be implemented using the same wireless technologies. For example, both email and Voice over Internet Protocol (VOIP) use some of the same digital networking protocols. In other situations, particularly with conventional cellular systems, voice might be communicated using a proprietary cellular protocol, while data and non-voice communications are based on other protocols carried over the cellular network.

In some implementations the selection of an appropriate network within network 106 may be made based on the communication mode (e.g. voice communication may be routed over a circuit-switched voice network and non-voice data may be routed over a packet-switched data network).

[0032] In addition to person-to-person communications, many modern telecommunications devices are capable of other types of data communications through access to the Internet and other databases. Many such devices have built-in Internet browsers for Internet navigation.

[0033] Telecommunications devices vary in complexity and capabilities, from simple devices that support only voice communications, to very sophisticated devices with capabilities approaching those of personal computers. Higher-end telecommunications devices are often identified as smart phones although increasingly are identified as desktop and portable computers, netbooks, etc.

[0034] A telecommunications device typically has an operating system 202 executed from some form of solid-state memory 204 by one or more processors 206. Custom software is preloaded onto the device to perform various functions and to support the different communication modes described above. Many telecommunications devices allow the user to customize the device through configuration options or by adding third-party software. Such software is available for many different functions, not limited to communications.

[0035] The user interfaces of telecommunications devices vary widely. The user interfaces include input devices 208 and output devices 210. The most basic input devices might consist of a numeric telephone-type keypad, to which has been added "talk" and "end" buttons for controlling voice calls, and a basic output device consisting of a single-line display for indicating telephone numbers. Other input devices 208 might include large touch-screen interfaces, alpha-numeric keypads, a

microphone, and other forms of input. Output device 210 may also include display screens, speakers, and other forms of output.

[0036] In one implementation, the memory 204 of telecommunications device 200 includes modules for implementing transitions between communication modes. In other implementations, not shown, analogous modules may exist on servers 112 in the network 106. The analogous modules on servers 112 may function in place of or in conjunction with modules present in the memory 204 of the telecommunications device 200.

[0037] One such module is the unique identifier generation module 212. Each logical communication session is identified by a unique identifier generated by the unique identifier generation module 212. As one example, the unique identifier may include a unique telecommunications device indicator for the telecommunications devices participating in the communication. The unique telecommunications device indicator may be a phone number, International Mobile Subscriber Identity (IMSI) number, email address, IP address, and the like. Different types of identifiers may be used to identify the telecommunications device sending the communication and the device receiving the communication. For example, a phone number may be used to identify the telecommunications device sending the communication and an IP address may be used to identify a phone receiving the communication. Unique identifiers that are based on information other than unique telecommunications device indicators are also envisioned within the scope of this disclosure.

[0038] Frequently the same two telecommunications devices are involved in numerous separate communications with each other. For example, friends talk and message from the same two telecommunications devices several times a day but not all communications are part of the same conversation. Therefore, the unique identifier uses additional information to distinguish between separate instances of

communication between these devices. This additional information is a communication instance identifier. The communication instance identifier may be derived from a timestamp (e.g., the time the communication was initiated), identifier of a network hardware item used when initiating the communication (e.g., an identifier of a base station antenna used by a mobile wireless device or the MAC address of a router used to access the Internet), or the like.

[0039] The designation of multiple communications as being part of the same conversation or alternately as part of different conversations may be indicated manually by users or automatically according to default rules. The user interface available on the telecommunications device may include a button or similar mechanism such as voice-command recognition for affirmatively indicating that a conversation is concluded. In that case, any subsequent communication becomes part of a different conversation. One example of a default rule is a time-out where, for example, after 30 minutes without communication the conversation is automatically ended. The user interface of the telecommunication devices may include a confirmation feature such as a pop-up menu whenever a conversation is to be concluded. For example, ending a voice communication by "hanging up" the phone may end the corresponding conversation or may simply end that mode of communication and the conversation to switch to a different mode of communication. In that situation a pop-up menu may present the user with a query such as "End this conversation?" or "Switch to SMS?". Additionally, following termination of a conversation there may be a mechanism for any user that participated in the conversation to revive the conversation.

[0040] Another module, which in some implementations is present in the memory 204 of telecommunications device 200, is a communication channel assignment module 214. The communication channel assignment module 214 assigns

communication modes to a logical communication session. Communication modes which may be assigned to a logical communication session include, but are not limited to, real-time voice communication, instant messaging, SMS messaging, MMS messaging, email, transmission of files (either as attachments to another communication mode or as a stand-alone communication). The files may include any type of computer-readable or machine-readable file such as image files, video files, audio files, and/or executable computer programs.

[0041] Memory 204 of telecommunications device 200 may also include a mode switching module 218. The mode switching module 218 allows a user to switch between the various communication modes within the logical communication session. In some implementations the mode switching module 218 switches between communication modes automatically in response to one or more conditions reported by the telecommunications device 200 and/or the recipient device. Because the various communications modes are associated within one logical communication session it is possible for the telecommunications device 200 to switch from voice data to non-voice data without receiving further input of a recipient address from a user.

[0042] For example, the mode switching module 218 handles the transition from a real-time voice conversation to an exchange of SMS messages. The telecommunications device 200 (or the recipient device) may report limited signal strength and thus automatically switch from a communication mode that requires a strong signal (e.g. real-time voice or video transmission) to a communication mode that functions even in the presence of a limited signal (e.g., text message or email). Other examples of reported conditions that may cause the mode switching module 218 to automatically switch communication modes include network speed, network bandwidth, available encryption, geographic location (e.g. received from a global

positioning system (GPS) sensor or radio frequency identification tag (RFID)), or the like.

[0043] A routing module 220 directs data corresponding to communications generated by one of the communication modes to the recipient device as indicated by the unique identifier. In implementations where the different communication modes use addresses to direct data to the recipient device, the routing module 220 correlates the disparate addresses into a single identity recognized as the recipient at the other end of the logical communication session (e.g., User 1's phone number and email address both point to User 1's telecommunications device). For example a single device (e.g., a recipient smart phone) may receive real-time voice and SMS messages addressed to a phone number, but may receive email and file attachments sent to an email address. In one implementation the routing module 220 maintains a table of addresses and corresponding communication modes for a recipient device. By referencing the table of addresses, communications to a recipient device are sent using the appropriate address. In other implementations, the recipient device responds to initiation of a communication channel by identifying its other addresses. For example during initial creation of a real-time voice connection the recipient smart phone responds by providing its email address.

[0044] In some implementations, each time a connection is made between two or more devices, addresses corresponding to all communication modes available on devices are automatically shared and updated. For example, if a user changed an e-mail address to reduce spam messages, but maintained the same voice number, the new e-mail address would be automatically transmitted to the other devices upon receiving a phone call. This will enable full switching of communication modes within a logical communication session even if all of the addresses corresponding to the communication modes are not known when the logical communication session is

initiated. In other implementations less than all of the addresses may be automatically shared. For example, users may specify that automatic sharing of addresses is limited by maintaining separate address books with different access levels to the numerous communication modes, by enabling a privacy mode, or the like.

[0045] The addresses which are automatically shared may be temporary or "dummy" addresses that are valid only while the logical communication session persists. For example, a user may wish to share the e-mail address of her smart phone but desire to keep the phone number private. If a logical communication session is initiated by e-mail, transition from e-mail to voice conversation within the logical communication session may be possible by automatic sharing of a temporary phone number. Providing a temporary phone number allows the logical communication session to behave as it would if a permanent phone number were shared. However, if a participant in the logical communication session saved the temporary phone number and attempted to dial that number at a later time (after conclusion of the logical communication session), a voice connection would not be established. Provisioning of "dummy" addresses may be performed for any type or address, not just phone numbers, and the types of communication modes for which "dummy" addresses are provided may be determined explicitly by the user or by a set of predetermined rules.

[0046] Provision of an address may also include provision of relevant communication protocols, encryption methods, communication ports, or the like. Similar to the auto-swapping of addresses, analogous auto-swapping of communication protocols is possible in some implementations. For example, if a user changes from circuit-switched voice communication to packet-switched voice communication but retains the same phone number, that change in communication protocol can be sent to another device.

[0047] Another module that exists in some implementations is a session terminating module 222. As discussed above, logical communication sessions may include multiple communication modes operating on multiple communication protocols and directing data to multiple addresses. Manual termination of every communication mode within a logical communication session may be a tedious user experience. The session terminating module 222 ends a logical communication session by managing the decoupling and sign-off events for the communication modes within the logical communication session. For example, the session terminating module 222 generates the necessary commands to hang-up the phone, sign out of an instant messenger, and the like. In some implementations receiving a user input to terminate one communication mode within the logical communication sessions causes the terminating module 222 to terminate all the communication modes within that logical communication session. In other implementations a separate user input is accepted to terminate an entire logical communication session.

LOGICAL COMMUNICATION SESSION

[0048] As discussed above, the logical communication session enables multiple communication modes to be bundled into a single communication session. In this manner, the telecommunications devices can switch between communication modes so that users can continue a conversation spanning multiple communication modes.

[0049] FIG. 3 shows a representation 300 of communication between two telecommunications devices 304, 306. The telecommunications devices 304, 306 may be the same or different types of devices. The communication between telecommunications device 304 and telecommunications device 306 is managed by a

logical communication session 302. Multiple communication modes such as voice, text messages (including SMS messages), email, image files, video files, audio files, and computer programs are potentially included in this logical communication session 302. The logical communication session is "logical" because the communication session can include multiple communication protocols (e.g., voice and email) as well as multiple paths for transmitting and receiving data (e.g., the circuit-switch and packet-switched networks). Masking the differences between the multiple communication modes in software, hardware, user interfaces, or the like, enables users to focus on a conversation rather than managing communications modes.

[0050] In one implementation, the logical communication session 302 enables switching between communication modes by maintaining all communication modes within the logical communication session 302 in an active or a latent state. The communication mode in the active state is actively involved in sending and/or receiving communication data. The communication mode in the active state is generally the communication mode in current use. One or more communication modes may simultaneously be in an active state. The term "latent state," when applied in the context of logical communication session 302, refers a state of a communication mode that can be either manually or automatically reinitiated upon a switch to an active state. Thus, a "latent state" may be understood as state of being primed to send or receive communication data without further user input, but not actively sending or receiving. In some implementations, a latent state is created by pre-provisioning necessary resources such as by obtaining a circuit in a circuit-switched communication network. In other implementations, a latent state is created by establishing sufficient hardware, software, and communication network resources to support a change in communication mode. For example, device drivers may be loaded into memory and network routings which supply sufficient bandwidth may be

identified as a part of creating a latent state. For some communication modes, in particular asynchronous communication modes, the latent state may be similar to an inactive state. For other communication modes, an inactive state may not function as a latent state because time delays imposed by software, hardware, and/or a network would be so substantial as to prevent seamless transitions from one communication mode to another.

[0051] Entering a latent state, whether through pre-provisioning or another mechanism, may be done for all communication modes every time communication is initiated over any one of the communication modes. However, in some implementations, communication modes may be placed into the latent state shortly before the communication mode is predicted to be used. For example, the prediction may be based on information provided by environmental sensors such as an accelerometer or a GPS. For example, moving a handset up and towards a user's ear may be interpreted as a signal that the user will soon switch to voice communication. Artificial intelligence, fuzzy logic, and the like may be utilized to generate the predictions.

[0052] The various communication protocols used for the communication methods within a logical communication session 302 may require the sending and receiving telecommunications devices 304, 306 (or other telecommunications devices) to engage in provisioning network services before communication data can flow between the two devices. The two devices then send several messages back and forth that enable them to agree on a communications protocol. Provisioning network services as used in this disclosure also includes other activities necessary to establish access to a network sufficient for a data connection between two devices. Provisioning network services may be initiated by transmission of data (e.g., username and password) to a remote computing device (e.g., server computer) that manages a

communication method such as an instant messenger. Registration includes, in some embodiments, providing credentials for access to a network (e.g., corporate LAN) or for pay-per-use communication service (e.g., pre-paid calling card). Validation can include security and encryption related transactions involved in establishing a secure communication session and/or for providing financial information to pay for access to communication services.

[0053] Provisioning of network services for communication modes different from those in use by a telecommunications device may involve user input and a time delay. Acquiring network services during the initiation of a logical communication session rather than when a user switches communication modes allows for transitions between communication modes during a conversation. Once network services are fully provisioned, the communication methods not actively in use (i.e., latent state) are maintained so that further provisioning of network services is not necessary before sending communication data with those communication methods. In one implementation, a voice connection is opened over a phone network and maintained in an open state without transmitting voice data over the connection to another telecommunications device. In other implementations, the voice connection is maintained by sending non-voice data over the communication path typically used for voice. As an additional example, a user logged into an instant messenger service remains logged-in for the duration of the logical communication session. In some implementations the telecommunications devices 304, 306 may send heartbeat signals to keep the relevant communication paths open. In other implementations the telecommunications devices 304, 306 automatically reestablish connections by re-provisioning network services if the communication path for a communication mode is dropped. The information necessary to provision the network services (e.g., user name, password, personal identification (PIN) number, etc.) may be maintained in

memory of the telecommunications device 304, 306, in remote memory such as on a network storage device, in removable storage media, or the like.

[0054] The multiple communication modes capable of being grouped into logical communication session 302 may comprise both synchronous communication modes and asynchronous communication modes. Synchronous communication involves direct communication where both parties involved in the communication are participating at the same time. Examples of synchronous communication include live-voice conversations over a telephone and instant messaging. During asynchronous, or indirect, communication both parties involved in the communication may not both be simultaneously participating during the conversation. Examples of asynchronous communication include email, SMS and MMS messaging. Switching between communication modes that are of the same type (e.g., synchronous-synchronous or asynchronous-asynchronous) may involve switching communication protocols but does not require switching between direct and indirect communication modes. However, switching between synchronous and asynchronous communication modes may not only involve switching communication protocols but may also involve switching between communication networks designed for direct and indirect communication modes.

[0055] During an active conversation, users of both telecommunications devices 304, 306 are typically interacting with their respective devices to send communications to each other. In this regard a rapid exchange of email messages may have characteristics of synchronous communication. In some implementations, one difference between synchronous and asynchronous communication is the network path used by the respective communication modes. Synchronous communications may be routed through circuit-switched networks included within network 106 shown in FIG. 1. Asynchronous communications may be routed through packet-switched

networks included within network 106 of FIG. 1. Switching between synchronous and asynchronous modes of communication may involve a corresponding switch between communication networks underlying those modes of communication. The logical communication channel 302, by encompassing both synchronous and asynchronous communication modes, enables switching between communication modes that may operate with different communication protocols or even different communication networks.

[0056] Seamless switching between communication modes within a logical communication channel can be performed alone or in combination with an automatic exchange of information, in which both telecommunication devices 304, 306 automatically exchanging information (e.g., contact information) when a logical communication channel is established. As discussed above, initiation of communication over one communication mode may be accompanied by automatic exchange of address information between the telecommunication devices 304, 306. Upon one of the users requesting a switch to another mode of communication, both telecommunication devices 304, 306 may automatically launch software or establish communication protocols to switch the conversation from one communication mode to in other communication mode. Automatic exchange of conduct information may be accompanied by automatic launch of communication modes. In one implementation, receipt of an indication that another device is switching communication modes causes the recipient device to automatically accept the incoming communication and switch to the corresponding communication mode without requiring user input. In the case of transition to a voice call, for example, callers would automatically be connected (e.g., without ringing either of the devices and/or without requiring either device to accept the call).

USER INTERFACE

[0057] FIG. 4 illustrates one example implementation of a user interface 400 for a telecommunications device. The user interface may consist of one or more buttons representing communication modes 402, 404, and/or contacts 406, 408 such as from an address book. The buttons may be mechanical buttons such as a key pad or soft buttons such as on a touch screen. The user can communicate with User 1 by selecting a button 406 and subsequently indicating a communication mode. In response to selection of a button by a user, the telecommunications device may request a logical communication session with another telecommunications device such as the logical communication session 302 shown in FIG. 3. In one implementation, selection of a contact such as User 2 408 produces a second user interface allowing selection of a communication mode that is appropriate for the selected contact such as is illustrated in FIG. 5. In another implementation, the user may first select a mode of communication and next select a recipient. For example, selection of text communication 402 may produce a second user interface allowing selection of a contact such as User 1 406 or User 2 408. If some of a user's contacts are unable able to use a given communication mode, then selection of that communication mode may produce a user interface showing only those contacts that can use the given communication mode. Following user inputs indicating a contact and a communication mode the telecommunications device requests a logical communication session from the indicated telecommunications device. In other implementations, user indication of a communication mode and a contact may be provided by voice commands rather than buttons.

[0058] Switching between communication modes may be responsive to a single user input such as a single click. During a voice conversation, a visual indication associated with the button for a voice communication 404 may indicate that

voice is the current conversation mode. For example, when the text button 402 is selected the user interface 400 changes to show that text is the current conversation mode. In addition or in place of the communication mode buttons 402, 404, buttons on an alphanumeric keypad may correspond to communication modes (e.g., 1 = voice, 2 = text, 3 = email, etc.). In other implementations the single user input may be shaking or tapping the telecommunications device, speaking a voice command (e.g., switch to streaming video), or the like. The single user input may be only one command such as selection of one button or one voice command.

[0059] FIG. 5 illustrates an example implementation of a user interface 500 for a telecommunications device which may be the same or different than the telecommunications device shown in FIG. 4. In one implementation, the user interface 500 is displayed after a contact is selected such as User 1 406 or User 2 408 as shown in FIG. 4. The user interface 500 may indicate all communication modes 502 available on the telecommunications device (e.g., text 504, voice 506, e-mail 508, attach a file 510). In other implementations, the user interface only displays the communication modes currently available on the other telecommunications device. For example, User 1 406 is selected from a list of contacts and the telecommunications device used by User 1 lacks a video conferencing communication mode a video conferencing communication mode is not displayed on the user interface 500. In some implementations if a communication mode is temporarily disabled on the other telecommunications device (e.g., User 1's mobile device is capable of voice communications, but User 1 disabled voice communication upon entering a library) the disabled communication mode 506 is shown on the user interface 500 but it is not selectable (e.g., a grayed out).

PROCESS SCENARIO

[0060] FIG. 6 shows a process 600 for switching communication modes on a telecommunications device. Process 600 is illustrated as a collection of referenced acts arranged in a logical flow graph, which represent a sequence that can be implemented in hardware, software, or a combination thereof. In the context of software, the acts represent computer-executable instructions that, when executed by one or more processors, perform the recited operations. Generally, computer-executable instructions include routines, programs, objects, components, data structures, and the like that perform particular functions or implement particular abstract data types. The order in which the acts are described is not intended to be construed as a limitation, and any number of the described acts can be combined in any order and/or in parallel to implement the process. For discussion purposes, the processes are described with reference to the logical communication session 302 of FIG. 3.

[0061] At 602, the telecommunications device (e.g., a smart phone, telecommunications device 304, etc.) requests a logical communication session 302 to communicate between the telecommunications device and a recipient telecommunications device (e.g., a same or different type of device sharing communication modes with the telecommunications device). The request may be responsive to an input received from a user of the telecommunications device such as selection of a communication mode button 402, 404 or a contacts button 406, 408 as shown in FIG. 4. Depending on the configuration of the telecommunications device the input may indicate the recipient telecommunications device by entering a phone number, pushing a single speed-dial button, selecting a name from an address book, entering an email address, or similar identifier of the recipient device. In some implementations, a unique identifier for the logical communication session is created

and assigned when the logical communication session is requested. In other implementations, the unique identifier is created and assigned during provisioning of network services or after establishing a logical communication session.

[0062] At 604, the telecommunications device initially uses a first communication mode within the logical communication session to communicate between itself and the recipient telecommunications device. In some implementations, the first communication mode is selected in response to an input received from the user of the telecommunications device. The first communication mode could be voice as indicated by the voice button 404 in FIG. 4. The input may directly specify the first communication mode (e.g., call User 1, email User 2, etc.) by user selection of a communication mode. Additionally or alternatively, the input may indirectly specify the communication mode by the type of recipient address entered (e.g., phone number specifies live-voice communication, email address specifies email message, etc.). In other implementations, the first communication mode is specified by the recipient device as an alternative to a communication mode requested by the telecommunications device. For example, if User 1 is in a library, his device, the recipient device, may be configured to refuse phone calls but accept SMS messages and/or voicemail. Alternatively, the recipient device may only have connectivity to a packet-switched network and be refused requests for synchronous communication modes. Regardless of how the users and devices determine a communication mode, the conversation begins with a first communication mode.

[0063] At 608, the telecommunications device places a second communication mode into the same logical communication session. In one implementation, the second communication mode is a communication mode, different than the first communication mode, shared by both the telecommunications device and the recipient device. If more than two communication modes are shared by the

telecommunications device and the telecommunications device, the process may be repeated until all shared communication modes are included within the logical communication session. Alternatively, the potential communication modes available to be placed into the logical communication session may be less than all the modes shared by the two devices. For instance, the users, devices, networks, and the like may limit available communication modes (e.g., the telecommunications device automatically disables SMS messaging when inside an automobile). The user interface 500 of FIG. 5 may display disabled communication modes as buttons that are not selectable such as the voice button 506.

[0064] At 610, the telecommunications device and the recipient telecommunications device switch from the first communication mode to a second communication mode. The switching may be responsive to the user selecting only a single button such as one of the buttons 504, 506, 508, 510 shown on user interface 500 of FIG. 5. Switching communication modes places the first communication mode into a latent state and places the second communication mode into an active state. This communication mode in an active state may be shown to the user by emphasis of a button used to select the active communication mode such as the emphasis of voice button 404 in FIG. 4. The switching is seamless in that provisioning of network services, establishing mode-appropriate communication protocols, and provisioning of recipient addresses (e.g., if the second communication mode uses a different address than the first communication mode to identify the recipient telecommunications device) have already been established for the communication modes within the logical communication session. With the set-up already established, the user can switch, for example, sending voice data to a telephone number to sending non-voice data to an email address with only a single input and without entering a new address (i.e., the email address). The first communication mode is placed into a latent state, rather than

terminated, so that if the users of the devices wish to switch back to the first communication mode that transition will also be seamless.

[0065] At 612, the telecommunications device and the recipient telecommunications device subsequently use the second communication mode within the logical communication session to communicate. The first and second communication modes are associated with the logical communication session by association with the unique identifier. In some implementations, the telecommunications device and the recipient telecommunications device identify the logical communication session by the same unique identifier. This unique identifier may be provided to the recipient telecommunications device while requesting a logical communication session as in step 602. Since the first communication mode and the second communication mode are both part of the same logical communication session the time and amount of user input between communication using the first communication mode and communicating using the second communication mode are reduced.

CONCLUSION

[0066] Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as exemplary forms of implementing the claims.

CLAIMS

What is claimed is:

1. One or more computer-readable storage media having computer-executable instructions thereon which, when executed by a computing device, implement a method or system comprising:

starting a logical communication session between a first telecommunications device and a second telecommunications device, wherein the logical communication session bundles a plurality of communication modes into a single session by associating the plurality of communication modes with a unique identifier comprising a unique telecommunications device indication and a communication instance identifier;

transmitting voice data using a synchronous communication mode within the logical communication session, wherein the voice data is associated with the logical communication session by assigning the unique identifier to the voice data;

switching from voice data to non-voice data based on an input received from at least one of the first and second telecommunications devices; and

transmitting the non-voice data using an asynchronous communication mode within the logical communication session, wherein the non-voice data is associated with the logical communication session by association with the unique identifier.

2. The one or more computer-readable storage media of claim 1, wherein the non-voice data comprises one of a Short Message Service (SMS) message, Multimedia Messaging Service (MMS) messages, an email message, a image file, a video file, an audio file, or an executable computer program.

3. The one or more computer-readable storage media of claim 1, wherein the synchronous communication mode directs the voice data over a Public Switched Telephone Network (PTSN) and the asynchronous communication mode directs the non-voice data over an IP network.

4. The one or more computer-readable storage media of claim 1, wherein the synchronous communication mode is placed in a latent state when the asynchronous communication mode is in an active state and the asynchronous communication mode is placed in a latent state when the synchronous communication mode is in an active state.

5. The one or more computer-readable storage media of claim 4, wherein the latent state comprises at least one of pre-provisioning communication resources or obtaining a circuit in a circuit-switched communication network.

6. The one or more computer-readable storage media of claim 1, wherein the switching from voice data to non-voice data occurs without receiving further input of a recipient address.

7. A method implemented on a telecommunications device by a processor configured to execute instructions that, when executed by the processor, direct a first telecommunications device to perform acts comprising:

in response to an input received from a user of the first telecommunications device indicating a second telecommunications device, requesting a logical

communication session between the first telecommunications device and the second telecommunications device;

initially using a first communication mode within the logical communication session to communicate between the first and second telecommunications devices;

placing a second communication mode into the same logical communication session;

switching from the first communication mode to the second communication mode, wherein the switching comprises placing the first communication mode into a latent state and placing the second communication mode into an active state; and

subsequently using the second communication mode within the logical communication session to communicate between the first and second telecommunications devices, wherein the first and second communication modes are different.

8. The method of claim 7, wherein the logical communication session is identified by a unique identifier and the first and second communication modes are included within the logical communication session based on an association with the unique identifier.

9. The method of claim 8, wherein the unique identifier comprises a unique communication instance identifier.

10. The method of claim 7, wherein the first and second communication modes comprise different ones of real-time voice, real-time video and voice, Short Message Service (SMS), Multimedia Messaging Service (MMS) messages, email,

image file transmission, video file transmission, audio file transmission, or executable computer program transmission.

11. The method of claim 7, wherein the first communication mode is synchronous and the second communication mode is asynchronous.

12. The method of claim 7, wherein the first communication mode is asynchronous and the second communication mode is synchronous.

13. The method of claim 7, wherein the first communication mode is synchronous and the second communication mode is synchronous.

14. The method of claim 7, wherein the first communication mode is asynchronous and the second communication mode is asynchronous.

15. The method of claim 7, wherein the latent state comprises a state in which a communication mode is configured to communicate with the recipient telecommunications device using a mode-appropriate communication protocol without a substantial delay.

16. The method of claim 7, wherein the method is performed by a telecommunications device.

17. The method of claim 7, wherein the method is performed by one or more network servers.

18. A communication infrastructure that supports on-demand communication sessions between different telecommunications devices, the infrastructure being configured to perform steps comprising:

in response to an input received from a user of a first telecommunications device, starting a logical communication session between the first telecommunications device and a second telecommunications device;

initially selecting and using a first communication mode within the logical communication session;

subsequently selecting and using a second communication mode within the same logical communication session, wherein the first and second communications modes are associated with each other by shared placement within the logical communication session; and

in response to an input received from the user of the first or second telecommunications device, ending the logical communication session between the first and second telecommunications devices.

19. The communications infrastructure of claim 18, wherein a unique identifier is associated with the logical communication session and the unique identifier comprises a unique telecommunications device indicator and a communication instance identifier.

20. The communications infrastructure of claim 18, wherein the first and second communication modes comprise different ones of real-time voice, real-time video with voice, Short Message Service (SMS), Multimedia Messaging Service (MMS) messages, email, image file transmission, video file transmission, audio file transmission, or executable computer program transmission.

21. The communications infrastructure of claim 18, wherein at least one of the communication modes is synchronous and at least one of the communication modes is asynchronous.

22. The communications infrastructure of claim 18, wherein a selection of at least one of the first and second communications modes is performed automatically in response to one or more conditions reported by at least one of the first and second telecommunications devices.

23. The communications infrastructure of claim 18, wherein a selection of at least one of the first and second communication modes is performed based on a single input received from at least one of the users of the first or second telecommunications devices.

24. The communications infrastructure of claim 18, wherein one of the communication modes is maintained in an active state and the other communication mode is maintained in a latent state.

25. The communications infrastructure of claim 18, wherein placing a communication mode within the logical communication session enables either the first or second telecommunications device to communicate using the communication mode without additional provisioning of network services or provisioning of a recipient address.

26. The communications infrastructure of claim 18, wherein a user interface of at least one of the first and second telecommunications devices indicates which communication modes are currently available for communicating with another telecommunications device.

27. A user interface comprising:

a control to access a plurality of communication modes;

an indicator to visually display an active communication mode; and

a control to select a communication mode other than the active communication mode, wherein the active communication mode is switched into a latent state and the selected communication mode is switched into an active state.

28. The user interface of claim 27, further comprising an indicator to visually display an unavailable communication mode differently than available communication modes.

29. The user interface of claim 27, further comprising an indicator to visually display one or more contacts simultaneously with the plurality of the communication modes.

30. The user interface of claim 27, wherein all communication modes possible for a telecommunications device are simultaneously displayed in the user interface.

31. The user interface of claim 27, wherein the indicator to visually display an active communication mode comprises a touch screen of a telecommunications device.

5

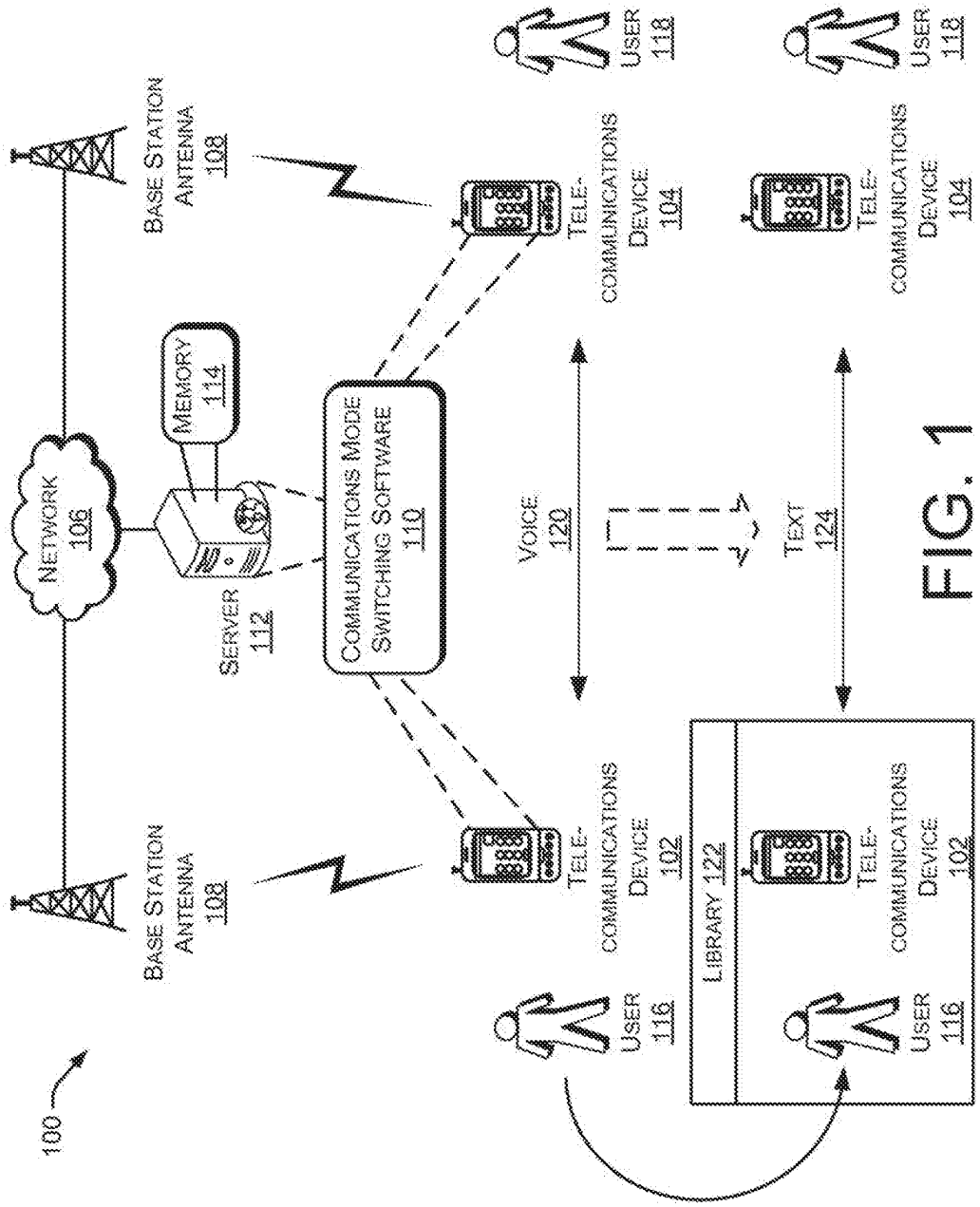

100
BASE STATION ANTENNA 108
BASE STATION ANTENNA 108
NETWORK 106
SERVER 112
MEMORY 114
COMMUNICATIONS MODE SWITCHING SOFTWARE 110
TELE-COMMUNICATIONS DEVICE 104
TELE-COMMUNICATIONS DEVICE 104
TELE-COMMUNICATIONS DEVICE 102
TELE-COMMUNICATIONS DEVICE 102
USER 118
USER 118
USER 116
USER 116
VOICE 120
TEXT 124
LIBRARY 122

FIG. 1

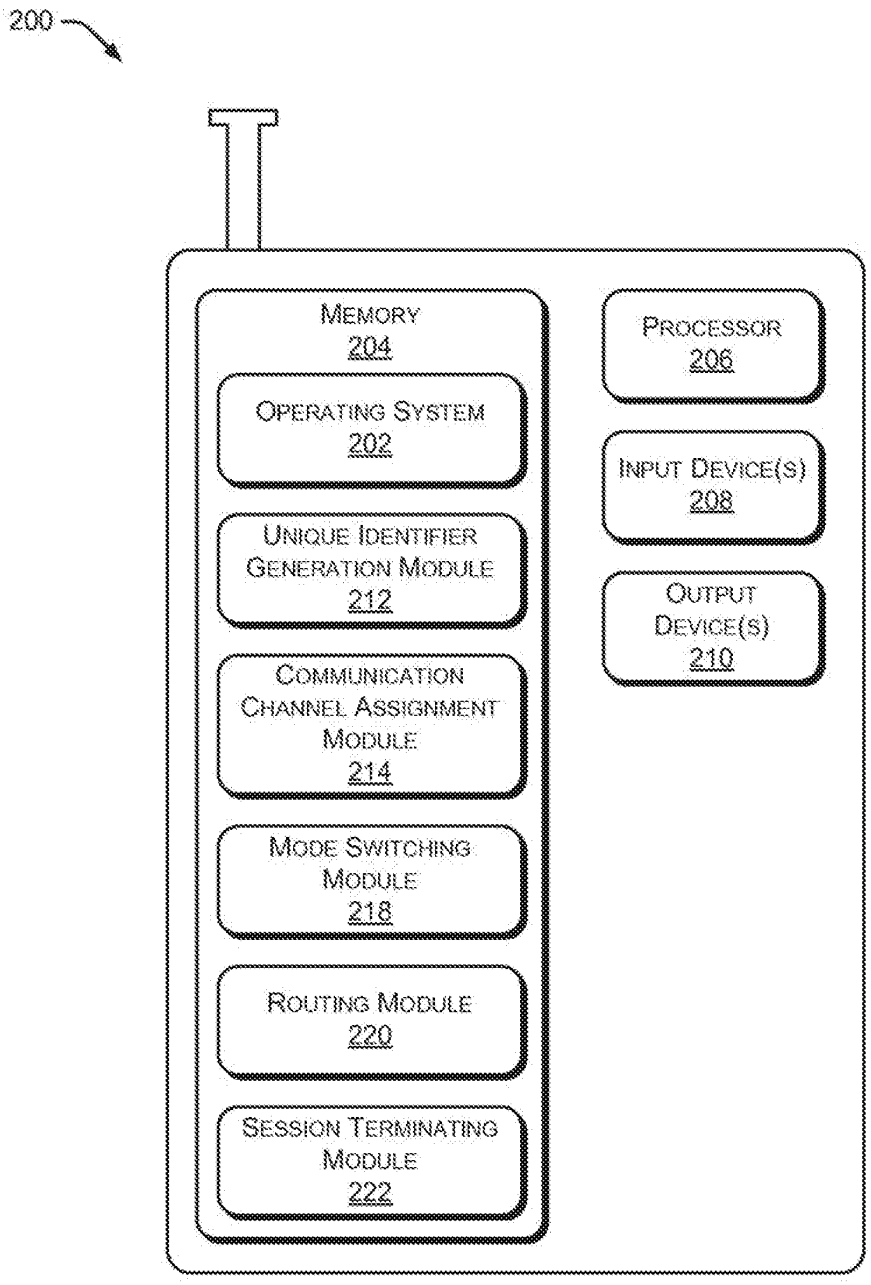

200
MEMORY
204
OPERATING SYSTEM
202
UNIQUE IDENTIFIER GENERATION MODULE
212
COMMUNICATION CHANNEL ASSIGNMENT MODULE
214
MODE SWITCHING MODULE
218
ROUTING MODULE
220
SESSION TERMINATING MODULE
222
PROCESSOR
206
INPUT DEVICE(S)
208
OUTPUT DEVICE(S)
210

FIG. 2

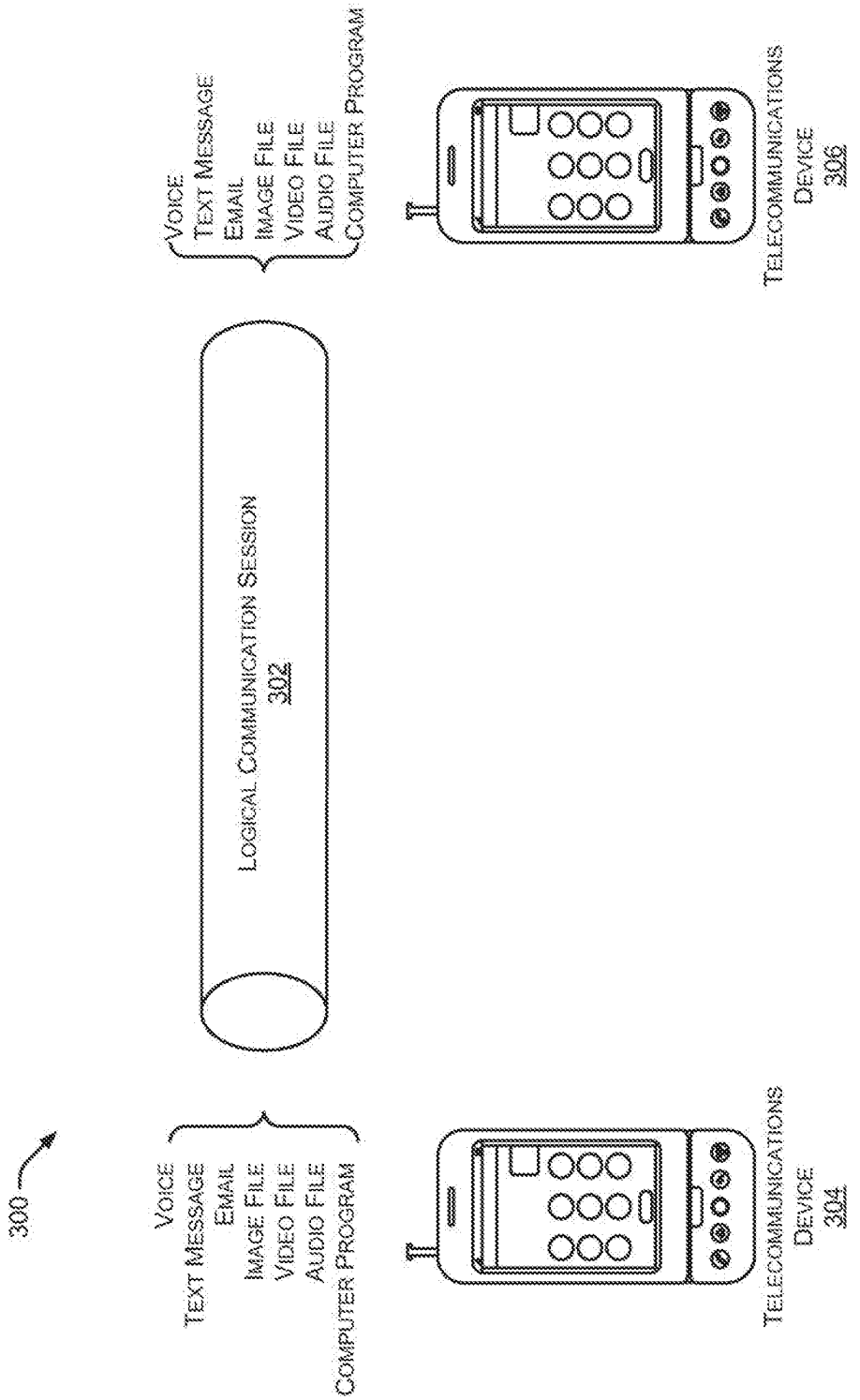

300
VOICE
TEXT MESSAGE
EMAIL
IMAGE FILE
VIDEO FILE
AUDIO FILE
COMPUTER PROGRAM
TELECOMMUNICATIONS DEVICE 304
LOGICAL COMMUNICATION SESSION 302
VOICE
TEXT MESSAGE
EMAIL
IMAGE FILE
VIDEO FILE
AUDIO FILE
COMPUTER PROGRAM
TELECOMMUNICATIONS DEVICE 306

FIG. 3

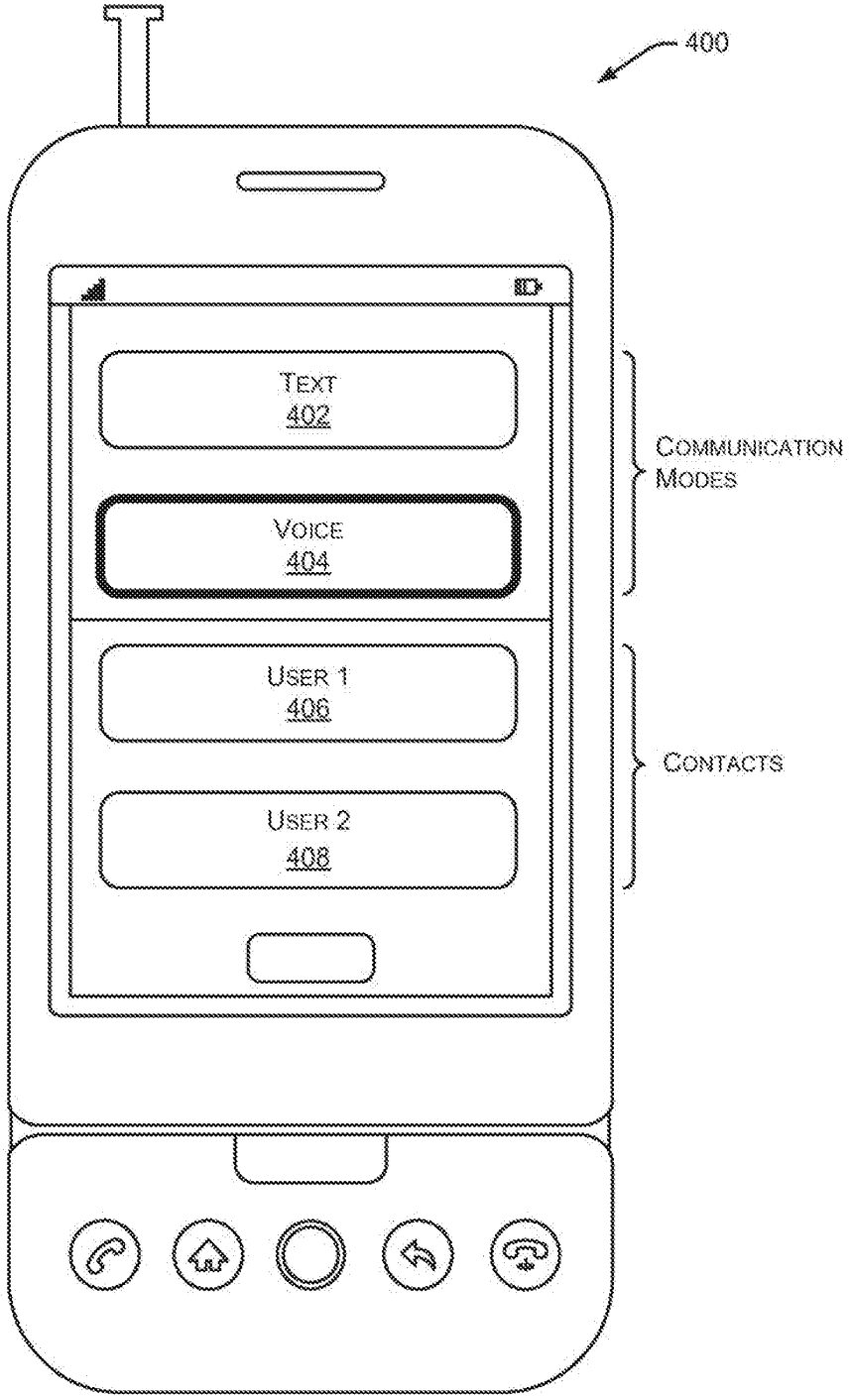

400
TEXT
402
VOICE
404
USER 1
406
USER 2
408
COMMUNICATION MODES
CONTACTS

FIG. 4

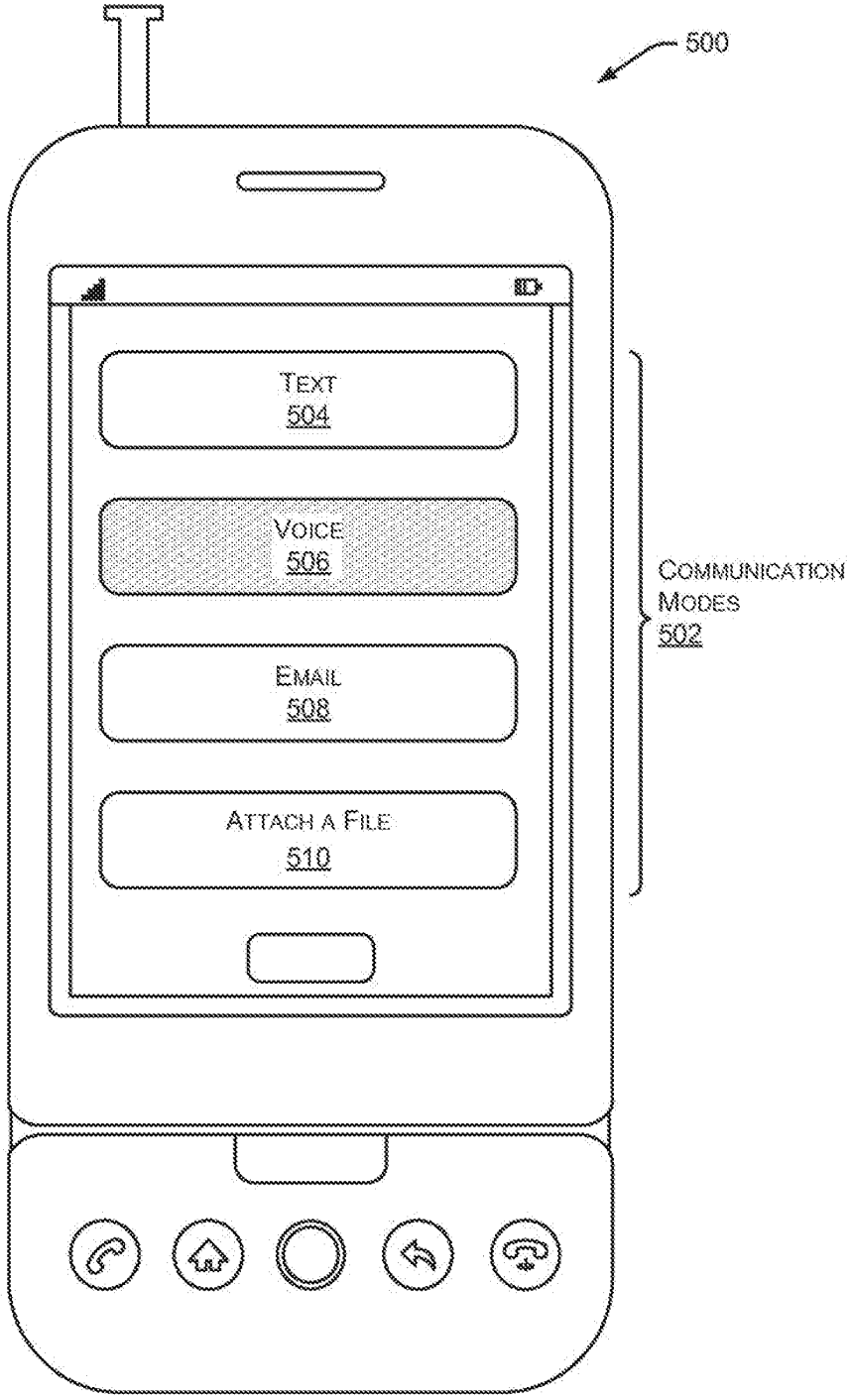

500
TEXT
504
VOICE
506
EMAIL
508
ATTACH A FILE
510
COMMUNICATION
MODES
502

FIG. 5

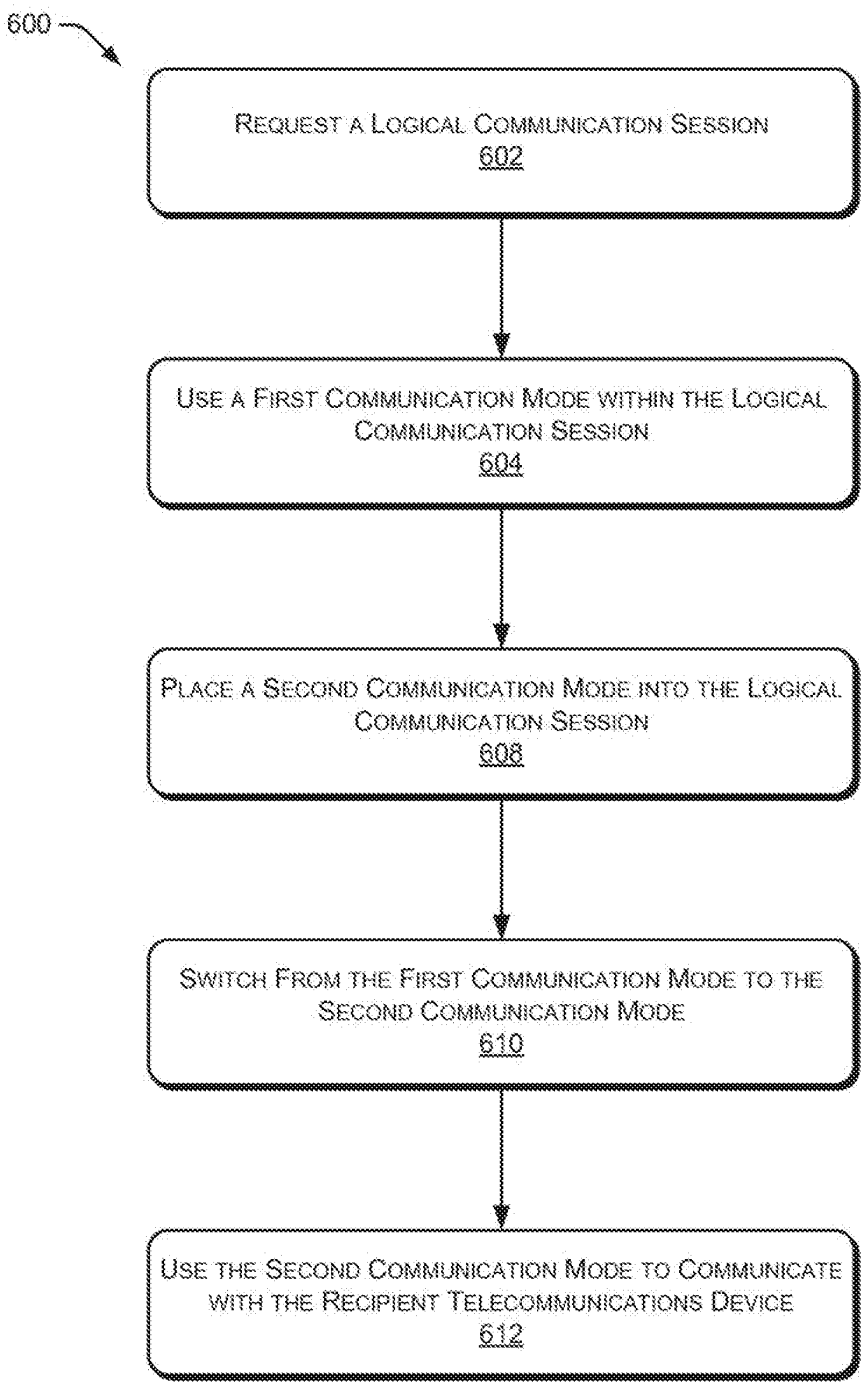

600
Request a Logical Communication Session
602
Use a First Communication Mode within the Logical Communication Session
604
Place a Second Communication Mode into the Logical Communication Session
606
Switch From the First Communication Mode to the Second Communication Mode
610
Use the Second Communication Mode to Communicate with the Recipient Telecommunications Device
612

FIG. 6

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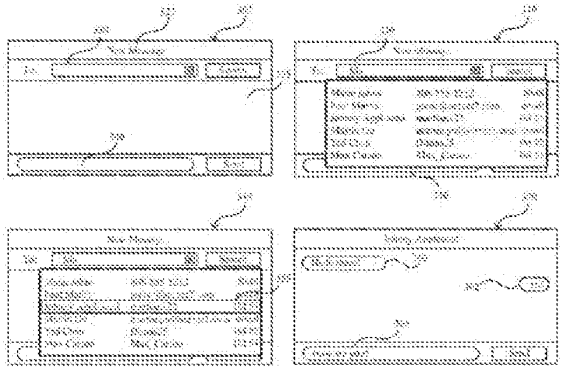
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[Continued on next page]

(54) Title: UNIFIED COMMUNICATION APPLICATION

FIG. 3



(57) Abstract: A unified communication application can allow a user to communicate with contacts across multiple electronic communication services. When the user desires to send a message, the communication application can identify a set of candidate account addresses associated with several electronic communication services in response to receiving a partial identifier of an intended recipient. The application presents a list including the set of candidate account addresses to the user. In response to receiving a user selection of one of the candidate account addresses, the application determines a sender account from which to send the message. The application can also aggregate communication history between the user and another person. A set of communication files associated with user identifiers of the user and the other person can be obtained, arranged, and presented to the user in an order based on a timestamp of each conversation line in the files.

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UNIFIED COMMUNICATION APPLICATION

BACKGROUND

[0001] The present disclosure relates in general to facilitating a communication session in an electronic environment, and in particular to determining participant accounts of a communication session, as well as aggregating communication history to enable a user to view the communication history with another person.

[0002] Typically, in order to initiate an electronic communication session, a user can log into an instant messaging service using a username and a password. After the user logs into the instant messaging service, the user can view a contacts list that shows the status of the user's established contacts on that service. When the user desires to establish a communication session with a particular contact on the user's contacts list, the user can select an identifier representing the particular contact, or the intended recipient, from the user's contacts list, create a message in a message box that appears when the user selects the identifier, and send the message to the recipient. Upon receiving the message, the recipient can either respond to the sender or decline to respond. If the recipient responds to the sender, a communication session is established and communication between the sender and the recipient (referred to as "participants of the communication session") begins. In some instances, the participants of the communication session can invite other contacts to join the communication session.

[0003] A number of instant messaging services have become widespread, with some being more popular with certain groups of users. Users are often registered with several instant messaging services and communicate with other users who are also registered with a number of instant messaging services, some of instant messaging services of which do not overlap. Moreover, users registered with several instant messaging services often have different usernames for some of those services. A user can have trouble keeping track of which contacts are on which services and under which usernames.

[0004] In some instances, a user can be logged into several instant messaging services. If the user is not currently logged into a service that an intended recipient is currently using, the user must log into that service before the user is able to send messages to the intended recipient. In other instances, a user can be logged into several instant messaging service but only actively using some of those services. If the user is not currently actively using the

service that the intended recipient is using, then the user must switch to the service that the intended recipient is using to be able to send messages to the intended recipient. It can be cumbersome for the user to constantly have to log into and/or switch between different services when the user desires to communicate with different contacts.

[0005] Further, the user might desire to view a communication history with another user. For instance, the user might be searching for a particular dialogue between the user and another user. However, with each user having multiple usernames associated with multiple instant messaging services, it can be difficult to find the particular dialogue.

SUMMARY

[0006] Certain embodiments of the present invention relate to a unified communication application that performs participant account determination for an electronic communication session. In some embodiments, the unified communication application is a single application that allows a user to send and receive messages using any of a number of different electronic communication services. The user can identify an intended recipient with whom the user would like to communicate by inputting a partial identifier of the intended recipient. In response to receiving the user input, the unified communication application on the user's electronic device searches, based on the partial identifier, a database of user contacts to identify account addresses for a number of candidate recipients. The account addresses can include account identifiers that are associated with several electronic communication services. The user device can present a list that includes the set of candidate account identifiers to enable the user to select an identifier of the intended recipient. Upon receiving a user selection of the identifier, the user device can determine, based on the electronic communication service associated with the identifier, the sender account from which to send the message. The user device can then send the message to the intended recipient using the determined sender account.

[0007] Further, some embodiments of the invention enable a user of a unified communication application to view a communication history between the user and another person. The communication history can include any communication between the user and the other person regardless of the different user identifiers and the electronic communication services they have used to communicating with each other. Upon receiving a request for a communication history between the user and the other person, the unified communication application obtains a set of communication session files that store communications between

the user and the other person. Each of the communication session files can include a set of conversation lines that are each associated with a timestamp. In some embodiments, the conversation lines in different communication session files may have been transmitted using different ones of several electronic communication services. The unified communication application arranges the conversation lines from all of the set of communication session files in an order based on the associated timestamps and presents at least a portion of the arranged conversation lines to the user.

[0008] Certain aspects of the invention relate to methods for determining participant account addresses in an electronic communication session for a sender and an intended recipient. A unified communication application can receive a user input including a partial identifier for an intended recipient of a message to be sent by a sender. The unified communication application can search, based on the partial identifier, a database of user contacts to identify a set of candidate account addresses for a set of candidate recipients. In some embodiments, the set of candidate account addresses can include user identifiers associated with multiple electronic communication services. The unified communication application can present a list including the identified set of candidate account addresses. The unified communication application can receive a user selection of one of the candidate account addresses as a representation of the intended recipient for the message. The unified communication application determines, in response to the selection, a sender account associated with the sender to be used for sending the message to the intended recipient and sends the message using the sender account.

[0009] Certain other aspects of the invention relate to methods for aggregating a communication history between two or more users. A unified communication application can receive a request for a communication history between a user and another person. The unified communication application can obtain a set of communication session files that stores communications between the user and the other person. In some embodiments, each of the set of communication session files can include a set of conversation lines that can be each associated with a timestamp. The conversation lines in different ones of the set of communication session files may have been transmitted using different ones of multiple electronic communication services. The unified communication application can arrange the conversation lines from all of the set of communication session files in an order based on the associated timestamps. The unified communication application can present at least a portion of the arranged conversation lines to the user.

[0010] The following detailed description together with the accompanying drawings will provide a better understanding of the nature and advantages of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 illustrates a computer system according to an embodiment of the present invention.

[0012] FIG. 2 is a flow diagram of a process for facilitating a communication session according to an embodiment of the present invention.

[0013] FIG. 3 illustrates an example sequence of screen images for setting up a communication session with an intended recipient according to an embodiment of the invention.

[0014] FIG. 4 is a flow diagram of a process for identifying a set of candidate account addresses for a set of candidate recipients according to an embodiment of the present invention.

[0015] FIG. 5 illustrates an example of a contact entry in the database of user contacts and its associated information.

[0016] FIG. 6 is a flow diagram of process for determining a sender account from which a message is to be sent in response to a user selection of a particular candidate account address according to an embodiment of the invention.

[0017] FIG. 7 illustrates an example sequence of screen images for inviting multiple participants to a communication session according to an embodiment of the invention.

[0018] FIG. 8 is a system diagram that illustrates local and remote storage of electronic communication session files that can be located and aggregated to generate a communication history between users.

[0019] FIG. 9 is an example of a creation of a page including communication history by aggregating multiple communication session files according to an embodiment of the present invention.

[0020] FIG. 10 is a flow diagram of a process for aggregating a communication history that stores communications between two users according to an embodiment of the present invention.

[0021] FIGs. 11A and 11B are representations of a communication history page at two different times illustrating dynamically loading and unloading portions of a page according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0022] Certain embodiments of the present invention relate to a unified communication application (also referred to as "a unified messaging application") that performs participant account determination for an electronic communication session. In some embodiments, the unified communication application is a single application that allows a user to send and receive messages using any of a number of different electronic communication services. The user can identify an intended recipient with whom the user would like to communicate by inputting a partial identifier of the intended recipient. In response to receiving the user input, the unified communication application on the user's electronic device searches, based on the partial identifier, a database of user contacts to identify account addresses for a number of candidate recipients. The account addresses can include account identifiers that are associated with several electronic communication services. The user device can present a list that includes the set of candidate account identifiers to enable the user to select an identifier of the intended recipient. Upon receiving a user selection of the identifier, the user device can determine, based on the electronic communication service associated with the identifier, the sender account from which to send the message. The user device can then send the message to the intended recipient using the determined sender account.

[0023] Further, some embodiments of the invention enable a user of a unified communication application to view a communication history between the user and another person. The communication history can include any communication between the user and the other person regardless of the different user identifiers and the electronic communication services they have used to communicating with each other. Upon receiving a user indication that the user would like to view a communication history between the user and the other person, the unified communication application obtains a set of communication session files that store communications between the user and the other person. Each of the communication session files can include a set of conversation lines that are each associated with a timestamp. In some embodiments, the conversation lines in different communication session files may have been transmitted using different ones of several electronic communication services. The unified communication application arranges the conversation

lines from all of the set of communication session files in an order based on the associated timestamps and presents at least a portion of the arranged conversation lines to the user.

[0024] The term "electronic communication service" is used herein to refer to any service capable of facilitating communication among a group of users who have accounts on that service (e.g., by providing a communication platform via an application such as an instant messaging computer program). An electronic communication service can provide communication over various channels, including e-mail, instant messaging (IM), Short Message Service (SMS), Voice over Internet Protocol (VoIP), etc. Examples of different electronic communication services can include AIM®, iChat®, Google® Talk, Skype®, Viber®, etc. A number of electronic communication services can provide real time communication between registered users. The types of communication between the users can include audio, video, image, and text communications.

[0025] As used herein, an electronic communication service defines a "closed universe" within which any user with an account on the service can send a communication to any other user with an account on the same service. (Some services may allow users to block other users from communicating with them or select specific users whose communications they wish to receive.) In some embodiments, an electronic communication service can be platform-independent or platform-dependent. Electronic communication services that are platform-independent, such as e-mail services, allow users to send communications to other users across different servers regardless of the e-mail provider. For example, Yahoo!® Mail and Gmail®, as well as other e-mail services, are platform-independent: any user with a valid e-mail account on any server can send e-mail to any other user on any other e-mail server. Therefore, in the context of the present disclosure, all Internet-based e-mail services are considered to constitute a single electronic communication service. In contrast, instant messaging or chat services such as AIM®, Yahoo!® Messenger, and Skype® are platform-dependent services where the users of one service cannot use their accounts to communicate with user accounts on another service. Hence, in the context of the present disclosure, most Internet-based messaging services are considered to be different electronic communication services.

[0026] The term "account address" is used herein to refer to any account on any electronic communication service. An account address can include a user identifier (e.g., a username, handle, alias, number, or the like) and an identifier of the electronic communication service

where the user identifier is valid. A single user can have one or more user identifiers across multiple electronic communication services and can have multiple user identifiers on a single service. Accounts or account addresses for a single user on different services might or might not have the same user identifier.

[0027] A unified messaging application can allow a user to access, from within a single user interface, all of the electronic communication services on which she has accounts. In some embodiments, the user can operate the messaging interface to send and receive e-mails, conduct text-based and/or video "chat" sessions, send and receive text messages, etc.

[0028] FIG. 1 illustrates a computer system 100 according to an embodiment of the present invention. Computer system 100 can be implemented as any of various electronic computing devices, including, e.g., a desktop or laptop computer, a tablet computer, smart phone, personal data assistant (PDA), or any other type of computing device, not limited to any particular form factor. Computer system 100 can include processing unit(s) 105, storage subsystem 110, input devices 120, output devices 125, camera 130, network interface 135, and bus 140.

[0029] Processing unit(s) 105 can include a single processor, which can have one or more cores, or multiple processors. In some embodiments, processing unit(s) 105 can include a general-purpose primary processor as well as one or more special-purpose co-processors such as graphics processors, digital signal processors, or the like. In some embodiments, some or all processing units 105 can be implemented using customized circuits, such as application specific integrated circuits (ASICs) or field programmable gate arrays (FPGAs). In some embodiments, such integrated circuits execute instructions that are stored on the circuit itself. In other embodiments, processing unit(s) 105 can execute instructions stored in storage subsystem 110.

[0030] Storage subsystem 110 can include various memory units such as a system memory, a read-only memory (ROM), and a permanent storage device. The ROM can store static data and instructions that are needed by processing unit(s) 105 and other modules of computer system 100. The permanent storage device can be a read-and-write memory device. This permanent storage device can be a non-volatile memory unit that stores instructions and data even when computer system 100 is powered down. Some embodiments of the invention use a mass-storage device (such as a magnetic or optical disk or flash memory) as the permanent storage device. Other embodiments use a removable storage device (e.g., a floppy disk, a

flash drive) as a permanent storage device. The system memory can be a read-and-write memory device or a volatile read-and-write memory, such as dynamic random access memory. The system memory can store some of the instructions and data that the processor needs at runtime.

[0031] Storage subsystem 110 can include any combination of computer readable storage media including semiconductor memory chips of various types (DRAM, SRAM, SDRAM, flash memory, programmable read-only memory) and so on. Magnetic and/or optical disks can also be used. In some embodiments, storage subsystem 110 can include removable storage media that can be readable and/or writeable; examples of such media include compact disc (CD), read-only digital versatile disc (e.g., DVD-ROM, dual-layer DVD-ROM), read-only and recordable Blue-Ray® disks, ultra density optical disks, flash memory cards (e.g., SD cards, mini-SD cards, micro-SD cards, etc.), magnetic "floppy" disks, and so on. The computer readable storage media do not include carrier waves and transitory electronic signals passing wirelessly or over wired connections.

[0032] In some embodiments, storage subsystem 110 can store one or more software programs to be executed by processing unit(s) 105, such as a communication application 145 (also referred to as "unified messaging app" 145). "Software" refers generally to sequences of instructions that, when executed by processing unit(s) 105 cause computer system 100 to perform various operations, thus defining one or more specific machine implementations that execute and perform the operations of the software programs. The instructions can be stored as firmware residing in read-only memory and/or applications stored in magnetic storage which can be read into memory for processing by a processor. Software can be implemented as a single program or a collection of separate programs or program modules that interact as desired. Programs and/or data can be stored in non-volatile storage and copied in whole or in part to volatile working memory during program execution. From storage subsystem 110, processing unit(s) 105 can retrieve program instructions to execute and data to process in order to execute various operations described herein. In some embodiments, storage subsystem 110 can also store other data, such as a database of user contacts 150 and/or communication history session files 155.

[0033] A user interface can be provided by one or more user input devices 120 and one or more user output devices 125. Input devices 120 can include any device via which a user can provide signals to computer system 100; computer system 100 can interpret the signals as

indicative of particular user requests or information. Input devices 120 can include any or all of a keyboard, touch pad, touch screen, mouse or other pointing device, scroll wheel, click wheel, dial, button, switch, keypad, microphone, and so on.

[0034] Output devices 125 display images generated by computer system 100. Output devices 125 can include a various image generation technologies (e.g., a cathode ray tube (CRT), liquid crystal display (LCD), light-emitting diode (LED) including organic light-emitting diodes (OLED), projection system, or the like), together with supporting electronics (e.g., digital-to-analog or analog-to-digital converters, signal processors, or the like), indicator lights, speakers, headphone jacks, printers, and so on. Some embodiments can include a device such as a touchscreen that function as both input and output device.

[0035] In some embodiments, the output device 125 can provide a graphical user interface, in which visible image elements in certain areas of the output device 125 are defined as active elements or control elements that the user selects using user input devices 120. For example, the user can manipulate a user input device to position an on-screen cursor or pointer over the control element, then click a button to indicate the selection. Alternatively, the user can touch the control element (e.g., with a finger or stylus) on a touchscreen device. In some embodiments, the user can speak one or more words associated with the control element (the word can be, e.g., a label on the element or a function associated with the element). In some embodiments, user gestures on a touch-sensitive device can be recognized and interpreted as input commands; these gestures can be but need not be associated with any particular array in output device 125. Other user interfaces can also be implemented.

[0036] Camera 130 captures images (e.g., as RAW image data or compressed image data). Camera 130 can be integrated into a device with processing unit(s) 105, etc., or can be a separate device that is communicatively coupled to the device with processing unit(s) 105. Camera 130 can allow computer system 100 to capture and record video and still images from the surrounding environment. Camera 130 can be of conventional design, including optical components (lenses, filters, etc.), a photo sensor (e.g., a CMOS sensor with millions of independent pixels), and associated electronics for converting signals generated by the sensor to digital image data.

[0037] Network interface 135 can provide voice and/or data communication capability for computer system 100. In some embodiments, network interface 135 can include radio frequency (RF) transceiver components for accessing wireless voice and/or data networks

(e.g., using cellular telephone technology, advanced data network technology such as 3G, 4G or EDGE, WiFi (IEEE 802.11 family standards, or other mobile communication technologies, or any combination thereof), GPS receiver components, and/or other components. In some embodiments, network interface 135 can provide wired network connectivity (e.g., Ethernet) in addition to or instead of a wireless interface. Network interface 135 can be implemented using a combination of hardware (e.g., antennas, modulators/demodulators, encoders/decoders, and other analog and/or digital signal processing circuits) and software components.

[0038] Bus 140 can include various system, peripheral, and chipset buses that communicatively connect the numerous internal devices of computer system 100. For example, bus 140 can communicatively couple processing unit(s) 105 with storage subsystem 110. Bus 140 can also connect to input and output devices 120 and 125. Bus 140 can also couple computer system 100 to a network through network interface 135. In this manner, computer system 100 can be a part of a network of multiple computer systems (e.g., a local area network (LAN), a wide area network (WAN), an Intranet, or a network of networks, such as the Internet). Any or all components of computer system 100 can be used in conjunction with the invention.

[0039] Some embodiments include electronic components, such as microprocessors, storage and memory that store computer program instructions in a computer readable storage medium. Many of the features described in this specification can be implemented as processes that are specified as a set of program instructions encoded on a computer readable storage medium. When these program instructions are executed by one or more processing units, they cause the processing unit(s) to perform various operation indicated in the program instructions. Examples of program instructions or computer code include machine code, such as is produced by a compiler, and files including higher-level code that are executed by a computer, an electronic component, or a microprocessor using an interpreter.

[0040] Through suitable programming, processing unit(s) 105 can provide various functionality for computer system 100. For example, processing unit(s) 105 can execute communication application 145 (or "unified messaging app" 145). Unified messaging app 145 can provide various functionality such as instant messaging features, video and voice communication features, e-mail features, etc. In some embodiments, unified messaging app 145 can identify a set of account addresses associated with multiple electronic

communication services in response to receiving a partial identifier for an intended recipient from a sender. Unified messaging app 145 can also determine a sender account from which to send the message to the intended recipient upon receiving user selection of an identifier for the intended recipient from the set of account addresses.

[0041] Further, in some embodiments, unified messaging app 145 can allow the user to view communication history between the user and another user. Upon receiving a user indication that the user would like to view communication history between the user and another user, unified messaging app 145 can identify all the user identifiers of the user and of the other user across multiple electronic communication services, obtain access to communication history files associated with those user identifiers, sort the content within the communication history files, and aggregate the sorted content into a single page for display to the user. In some embodiments, the user can scroll across the page to view the communication history that includes communications between the two users from multiple communication services. Moreover, messaging app 145 of some embodiments can include program instructions to assist a user in operating camera 130 to capture and analyze hand gestures or gaze or facial movements as a type of user input.

[0042] It will be appreciated that computer system 100 of FIG. 1 is illustrative and that variations and modifications are possible. Computer system 100 can have other capabilities not specifically described here (e.g., mobile phone, global positioning system (GPS), power management, accessory connectivity, etc.). Further, while computer system 100 is described with reference to particular blocks, it is to be understood that these blocks are defined for convenience of description and are not intended to imply a particular physical arrangement of component parts. Further, the blocks need not correspond to physically distinct components. Blocks can be configured to perform various operations, e.g., by programming a processor or providing appropriate control circuitry, and various blocks might or might not be reconfigurable depending on how the initial configuration is obtained. Embodiments of the present invention can be realized in a variety of apparatus including electronic devices implemented using any combination of circuitry and software.

[0043] As mentioned, computer system 100, hereinafter also referred to as user device 100, can provide a single unified messaging app 145 that allows a user to communicate with contacts across multiple electronic communication services. In response to receiving a user indication of an intended recipient, user device 100 in some embodiments can populate a list

of candidate account addresses that can include user identifiers associated with multiple electronic communication services. The user (in this case, the sender) can select a user identifier for a recipient from the populated list to initiate a communication session with the recipient. The service to be used can be automatically determined based on the user's selection. Examples of such process will now be described.

[0044] FIG. 2 is a flow diagram of a process 200 for facilitating a communication session according to an embodiment of the present invention. Process 200 can be implemented, e.g., in user device 100 of FIG. 1 executing unified messaging app 145. Process 200 will be described with reference to FIG. 3, which illustrates an example sequence of screen images for user device 100 in setting up a communication session with an intended recipient using unified messaging app 145 according to an embodiment of the invention.

[0045] At block 202 of FIG. 2, unified messaging app 145 can receive a user input including a partial identifier for an intended recipient of a message to be sent by a sender. In some embodiments, the partial identifier can be a portion of a contact's first name, a portion of a contact's last name, a portion of one of a contact's usernames or aliases, etc. Some embodiments allow the sender to perform the user input through a keyboard input, a gesture input, a cursor controller input, a gaze input, a voice command, etc.

[0046] Referring to FIG. 3, an initial screen 305 can be associated with a communication application (e.g., unified messaging app 145). Initial screen 305 includes a description section 325, a search box 330, a communication exchange display area 335, and a message entry box 340. Description section 325 indicates that the user is in the process of creating a new message to be sent to an intended recipient for a communication session. Search box 330 allows the sender to input a sequence of characters (e.g., a portion of a first name, a last name a nickname, etc.) to identify the intended recipient. Communication exchange display area 335 displays the communication exchange between the sender and the recipient, which can include various text data, hyperlinks, image data, video data, audio data, etc. Text entry box 340 allows the sender to enter a message that the sender would like to communicate to the recipient.

[0047] Referring again to FIG. 2, at block 204, unified messaging app 145 can search a database of user contacts to determine whether a match with the user input exists. In some embodiments, the database of user contacts can include an electronic address book stored locally on user device 100. In some embodiments, the database of user contacts can include

an electronic address book stored at a remote server accessible by user device 100. The electronic address book can store a number of contacts and their information (e.g., first name, last name, e-mail address, phone number, address, gender, instant messaging user identifiers, etc.). User device 100 in some embodiments determines whether a match with the user input exists by comparing the partial identifier with first names of contacts in the electronic address book, with last names of contacts in the electronic address book, with e-mail addresses of contacts in the electronic address book, with instant messaging account identifiers, etc. This enables the user device 100 to identify a number of contacts who match the partial identifier.

[0048] In some embodiments, unified messaging app 145 can determine whether a match with the user input exists by comparing the partial identifier with one or more instant messaging user identifiers in a service-specific contacts list. In some embodiments, a user can have a service-specific contacts list for some or all of the electronic communication services with which the user is registered. Each service-specific contacts list (e.g., a "buddy list" on some IM services) can include a number of user identifiers for other users on the same service with whom the user communicates (e.g., a "buddy list" on some instant-messaging services). While in some embodiments, the service-specific contacts list can be stored locally on user device 100, the service-specific contacts list in some embodiments can be stored in a remote server managed by a provider of the associated communication service. Some embodiments perform this comparison against instant messaging identifiers only when a match was not identified when the partial identifier was compared against the first names and/or last names of contacts in the user's electronic address book. Some embodiments perform this comparison regardless of whether a match was found in the address book.

[0049] At block 206, unified messaging app 145 can identify a set of candidate account addresses for a set of candidate recipients. Each candidate account address can include a user identifier and an identifier of the electronic communication service where the user identifier is valid. At block 208, unified messaging app 145 can present a list of candidate account addresses to the sender. In some embodiments, the list can be displayed on a screen image displayed on a display screen of user device 100. Some embodiments can present the list to the sender by generating audio signals that delivers the list to the sender.

[0050] In screen image 310 of FIG. 3, the sender has input the letters "Ma" into search box 330. In response to this user input, unified messaging app 145 has identified candidate

recipients and has presented a list 350 to the user. List 350 can include accounts on any electronic communication service.

[0051] In this example, unified messaging app 145 has identified a contact Mann Johns as one of the candidate recipient accounts based on the contact's first name. Unified messaging app 145 further shows Mann Johns' telephone number (310-555-1212) and indicates that he is reachable via SMS. Unified messaging app 145 has identified a contact Paul Marks as another one of the candidate recipient accounts based on the contact's last name. Unified messaging app 145 shows Paul Marks's e-mail address (goose@server7.com) and indicates that he is reachable via e-mail. Unified messaging app 145 has identified a contact Johnny Appleseed as another one of the candidate recipient accounts based on the contact's user identifier "martian123" on a particular instant messaging service. Unified messaging app 145 shows Johnny Appleseed's messaging user identifier "martian123" and indicates that he is reachable via instant messaging service 1 ("IM #1"). Unified messaging app 145 has also identified a contact Martin Go as a candidate recipient account based on the contact's e-mail address. Unified messaging app 145 has also identified a contact Ted Chen as one of the candidate recipient accounts based on the contact's messaging user identifier. Unified messaging app 145 has further identified a contact Max Carson as one of the candidate recipient accounts based on the contact's messaging user identifier.

[0052] List 350 includes the set of candidate account addresses and can also include related information (e.g., a name corresponding to a candidate account address, an associated electronic communication service, etc.) that would help the sender identify the intended recipient.

[0053] In some cases, there can be several available options for communicating with a single recipient (e.g., IM #1, IM #2, SMS, VoIP, etc.). For example, the user input may match the first name of a contact for whom the user's address book has a phone number, an e-mail address, and two different instant messaging account addresses that may belong to the same recipient or different recipients. In some embodiments where multiple services are available for a single recipient, unified messaging app 145 can select and display a most preferred communication service that is available for communicating with the candidate recipient. The preferences in communication service can be pre-configured by the manufacturer or configured by the user in a preferences setting on unified messaging app

145. In some embodiments, the preferred service can be determined dynamically, e.g., based on the sender's past communication behavior.

[0054] In some embodiments, instead of displaying only the most preferred communication service available for communicating with the candidate recipient, unified messaging app 145 can display all the accounts for the candidate recipient. In some embodiments, unified messaging app 145 can display the different accounts for the recipient in an order based on the user's preference. For example, if the user typically prefers to use SMS, then if SMS is available as a means of communicating between the user and the candidate recipient, then this option would be displayed at the top of the list for the user's convenience. As another example, the order can be based on how often the sender has used each of the accounts.

[0055] Returning to FIG.2, at block 210, unified messaging app 145 can receive a user selection of one of the candidate account addresses for the intended recipient. Alternatively, the sender can input more information (e.g., continuing to enter additional characters) to further filter the list of candidate recipient accounts. In screen image 315 of FIG. 3, the sender has selected one of the candidate account addresses for the intended recipient, and the selected candidate account address 355 is highlighted. In some embodiments, the sender can select more than one candidate account address from the same list.

[0056] Returning to FIG. 2, at block 212, unified messaging app 145 can receive a user input specifying a message to be sent. In some embodiments, the user can type a message into text entry box 340 of FIG. 3. Unified messaging app 145 can also allow the user to create message content by identifying a file that contains message content (e.g., a photo), by launching a video or audio chat (if the selected service supports this) and providing user input via a microphone and/or camera, etc.

[0057] At block 214, unified messaging app 145 can send the specified message to the selected account address. In some embodiments, sending the message can include selecting the appropriate sender account to use. The sender can have multiple sender account addresses that each include a user identifier and an identifier of the electronic communication service where the user identifier is valid. In some embodiments, unified messaging app 145 can allow the sender to specify which sender account address the sender would like to use prior to sending the message. Unified messaging app 145 of some embodiments can automatically determine a sender account address without human intervention, based on a number of decision criteria, examples of which are described below. Upon determining the

sender account address, a communication session can be established between the sender and the intended recipient.

[0058] As shown in screen image 320 of FIG. 3, a communication session, in this case, a chat session, has been established and the sender is able to send instant messages to the recipient. Message 360 has been sent, a reply 362 has been received, and the sender is currently typing message 365. In some embodiments, unified messaging app 145 animates the manner in which the messages are displayed on the screen images. For instance, as the sender instructs unified messaging app 145 to send the message to the recipient (e.g., by selecting a "send" button), the message can move from message entry box 340 to communication exchange display area 335 in an animated bubble movement, appearing as if the text were in a bubble traveling upward. Various animation schemes and styles can be incorporated into displaying the messages of the sender and recipient. Although the sender is using instant messages to communicate with the recipient in this instance, in some instances, the sender can send other types of messages including text messages, audio messages, video messages, e-mail messages, etc. to the recipient. Like all other input, the messages can be created using a keyboard input, voice command input, gesture input, etc.

[0059] As described above, unified messaging app 145 can search various sources to identify candidate account addresses and candidate recipients. FIG. 4 is a flow diagram of a process 400 for identifying a set of candidate account addresses for a set of candidate recipients according to an embodiment of the present invention. Process 400 can be implemented, e.g., in user device 100 of FIG. 1 executing unified messaging app 145. Process 400 will be described with reference to FIG. 5, which illustrates an example of a contact entry 500 in a database of user contacts (e.g., user contacts database 150 of FIG. 1) in accordance with some embodiments of the invention.

[0060] At block 402, unified messaging app 145 can receive user input including a partial identifier. The partial identifier can be any information that would enable unified messaging app 145 to narrow down contacts in the database of user contacts and identify a set of candidate account addresses. In some embodiments, the partial identifier can be a sequence of characters that can identify a portion of a name, an e-mail address, an instant messaging user identifier, etc.

[0061] At block 404, unified messaging app 145 can identify one or more matches with first names of contacts in user contacts database 150. For example, unified messaging app

145 can match the partial identifier with first names in user contacts database 150 to identify matching first names. In some embodiments, unified messaging app 145 can identify a first name as a match with the partial identifier if any portion of the first name is the same as the partial identifier. For example, unified messaging app 145 can determine that "Madonna" is a match for partial identifier "Don." In some embodiments, unified messaging app 145 can identify a first name as match with the partial identifier only when the initial characters of the first name matches the partial identifier. For example, unified messaging app 145 can determine that "Larry" is a match for partial identifier "La" while "Mandela" is not. The settings for how a match is determined can be preconfigured or can be configurable by an administrator or a user of the communication application.

[0062] FIG. 5 illustrates an example of a contact entry 500 in the database of user contacts and its associated information. As shown, contact entry 500 can include the contact's name (at 502) and a list of addresses at which the contact can be reached. These addresses can include physical addresses (e.g., home address 504) as well as account addresses on various electronic communication services. In this example, Johnny Appleseed's account addresses include two e-mail addresses 506 and 508, an SMS address 510 (in the case of SMS, a phone number can function as an account identifier), three addresses for instant-messaging services 512, 514, and 516, and a VoIP address 508. Contact entry 500 can also include other information about the contact (shown in area 520), such as one or more user-assigned group affiliations of the contact. In response to receiving the user input, unified messaging app 145 can compare the partial identifier to the first names of contacts in user contacts database 150. If the user input is "John," unified messaging app 145 of some embodiments can determine that a match has been found and flag contact entry 500.

[0063] Returning to FIG. 4 at block 406, unified messaging app 145 can identify one or more matches with last names of contacts in user contacts database 150. For example, unified messaging app 145 matches the partial identifier with a set of last names in user contacts database 150 to identify matching last names. In some embodiments, unified messaging app 145 can identify a last name as a match with the partial identifier if any portion of the last name is the same as the partial identifier. In some embodiments, unified messaging app 145 can find a match only when the first portion of the last name matches the partial identifier.

[0064] At block 408, unified messaging app 145 can identify one or more matches with account addresses of contacts in user contacts database 150. In some embodiments, unified messaging app 145 can match the partial identifier with any of the account addresses of a contact.

[0065] In FIG. 5, unified messaging app 145 can compare the account addresses (including the e-mail addresses "j2a@company.com" and "johnnya@home.com"; the SMS address "408-555-1234"; and the instant-messaging addresses "jappleseed01," "ja1990," johnny@co.com," and "j-appleseed") against the partial identifier to determine whether a match is found. Upon identifying a match, unified messaging app 145 can flag the account address. In some embodiments, some or all of a contact's phone numbers can be treated as SMS addresses, and a user can find a contact by entering part of the contact's phone number.

[0066] Returning to FIG. 4 at block 410, unified messaging app 145 can determine whether a match has been found. Unified messaging app 145 determines whether there is at least one match between the partial identifier and a first name, a last name, or an account address in user contacts database 150. If at least one match exists, a list of candidate account addresses including the matching first names, last names, e-mail addresses, and/or messaging identifiers can be presented to the sender. The sender can then select one of the account addresses from the list and send a message to the selected recipient via the electronic communication service associated with the selected account address.

[0067] If unified messaging app 145 determines that a match has not been found, at block 412, unified messaging app 145 of some embodiments can determine a set of electronic communication services that the sender is currently logged into. In some embodiments, unified messaging app 145 can also determine the electronic communication services that unified messaging app 145 is capable of logging the sender into (e.g., when the username and password of the sender is already stored on user device 100 and is accessible to unified messaging app 145).

[0068] At block 414, unified messaging app 145 can identify one or more matches with account addresses (or account identifiers) in a service-specific contacts list for each of the electronic communication services identified at block 412. In some embodiments, unified messaging app 145 can match the partial identifier against account addresses of contacts by retrieving the sender's service-specific contacts list for each of the electronic communication services and determining whether any of the account identifiers on the service-specific

contacts list matches the partial identifier input by the user. The sender's service-specific contacts list for each electronic communication service can be stored locally at user device 100 or at a remote server (e.g., managed by a provider of a communication service). The identified matches can then also be included in the set of candidate account addresses to be presented to the sender.

[0069] After identifying a set of candidate account addresses for a set of candidate recipients using the received user input, unified messaging app 145 presents a list including the set of candidate account addresses to the sender. In some embodiments, unified messaging app 145 can present the candidate account addresses in the list in a particular order based on a set of preferences (e.g., the user's preferences for particular communication services, the people with whom the user more frequently communicates). Other criteria that can be used to sort the list include whether the sender is currently connected to a particular electronic communication service; the current status of the candidate recipient account (e.g., whether the account is known to be currently online or offline); which electronic communication service or services the sender uses most often, either in general or for a particular recipient; which candidate recipient account the sender has communicated with most recently; which candidate recipient account the sender has communication with most often; and so on. In some embodiments, these decision criteria can also be used to filter the list, e.g., excluding any candidate recipient accounts that are on services the sender is not connected to or excluding candidate recipient accounts that are known to be currently offline.

[0070] In some embodiments, unified messaging app 145 can present the set of candidate account addresses to the sender by displaying, for each of the set of candidate account addresses, the associated contact's name (if known), the account identifier (username, phone number, or the like), and the electronic communication service for the account. List 350 in FIG. 3 illustrates one arrangement of information; other embodiments can display the information associated with each of the set of candidate account addresses differently. From the set of candidate account addresses, the sender can select the account address representing the intended recipient.

[0071] In some embodiments, a sender account (i.e., the account from which the message is to be sent) is automatically selected by unified messaging app 145 without human intervention. As mentioned, a sender can have several accounts that can be associated with different electronic communication services, and a sender can have multiple accounts on a

single electronic communication service. Based on the electronic communication service of the selected recipient account identifier, unified messaging app 145 can determine the appropriate sender account from which to send the message. FIG. 6 is a flow diagram of process 600 for determining a sender account from which a message is to be sent in response to a user selection of a particular candidate account address according to an embodiment of the invention. Process 600 can be implemented, e.g., in user device 100 of FIG. 1 executing unified messaging app 145.

[0072] At block 602, unified messaging app 145 can determine an electronic communication service associated with the selected recipient account address. Unified messaging app 145 can determine the electronic communication service associated with the recipient account address in order to determine which sender account to use.

[0073] At block 604, unified messaging app 145 can identify a set of sender account addresses associated with the recipient's electronic communication service determined at block 602. The sender can have multiple user identifiers or accounts with a single electronic communication service. For example, on a particular instant messaging service, the sender can use one user identifier for communicating with coworkers and another user identifier for communicating with family and friends. All such accounts can be identified at block 604.

[0074] At block 606, unified messaging app 145 can determine whether the number of identified sender account addresses is greater than one. If the number of identified sender account addresses is not greater than one (i.e., if only one sender account address is identified as being associated with the recipient's electronic communication service), then at block 616, unified messaging app 145 can select this account address as the sender account and can send the message using this account address.

[0075] If, at block 606, the number of identified sender account addresses is greater than one, then at block 608, unified messaging app 145 can select a sender account address. Various selection criteria can be used. In some embodiments, unified messaging app 145 can retrieve historical information that identifies the sender account address used most frequently to communicate with the candidate account address in the past. In some instances, the sender might use a particular sender account address more often than the other sender account addresses to communicate with the recipient account address (e.g., because the sender uses the particular sender account address to communicate with coworkers or business contacts and the recipient is a business contact). Unified messaging app 145 can then determine the

sender account address most frequently used to communicate with the candidate account address as the one to use in sending the message.

[0076] While some embodiments select the sender account address that is used most frequently to communicate with the selected recipient account address, some embodiments can select the sender account address using different criteria. For example, some embodiments can select the sender account address from the set of sender account addresses by determining the sender account address most recently used for any communication on the recipient's electronic communication service, the sender account address most recently used to communicate with the selected recipient account address, or the sender account address most frequently used to send any communications on the recipient's electronic communication service.

[0077] At block 610, unified messaging app 145 can present the selected sender account address to the sender to provide the sender an opportunity to select a different sender account address from which to send the message. In some embodiments, unified messaging app 145 can present the sender account address to the sender by displaying the sender account address in a "From:" field on the screen image. Prior to sending the message, unified messaging app 145can allow the sender to select a different account address from the set of sender account addresses associated with the determined electronic communication service.

[0078] At block 612, unified messaging app 145 can determine whether the sender selected a different account address. If the sender selected a different account address, then at block 614, unified messaging app 145 can send the message using the sender account address selected by the sender. If the sender does not select a different account address, at block 616, unified messaging app 145 sends the message using the determined sender account address.

[0079] As described above, a sender can select a recipient account for a message by providing a partial identifier of the intended recipient and selecting from a list of candidate recipient accounts that match the partial identifier. In embodiments described above, the partial identifier can be a sequence of characters. In some embodiments, the partial identifier can be a characteristic of the intended recipient. For example, the partial identifier can indicate that the intended recipient is a family member, a business contact, a doctor, a person within a particular age group, a coworker, a tennis buddy, a study group member, a person with a physical address within a particular region, etc. Such characteristics can be defined based on any information about the contact that the user has stored. For example, in contact

entry 500 of FIG. 5, it can be determined from physical address 504 that Johnny Appleseed lives in Cupertino, California. It can be determined from group information in area 520 that Johnny Appleseed is a coworker. In response to receiving a characteristic of an intended recipient (e.g., in search box 330 of FIG. 3), unified messaging app 145 can filter the contacts using the received characteristic to identify the set of candidate account addresses.

[0080] In some embodiments, a user of unified messaging app 145 can invite multiple participants to join a communication session. In some instances, a user can select a group of contacts and request to initiate a communication session with the group of contacts. In such instances, unified messaging app 145 can determine an electronic communication service that is accessible to all of the contact in the group (e.g., everyone in the group is logged into or has an account on the electronic communication service) as the electronic communication service to use for the communication session. If there is more than one electronic communication service that is available across all the selected contacts, unified messaging app 145 can determine a most frequently used channel of communication amongst the selected contacts and select that as the electronic communication service to use for the communication session. In some embodiments, if no electronic communication service is determined to be accessible across all the selected contacts, a communication session cannot be established. Some embodiments, however, allow the communication session to be established even when only a majority of the selected contacts are logged into the same electronic communication service.

[0081] In other instances, the user can successively select recipients for a message or decide to add another party to a communication session in progress. Once a sender selects a first recipient for a particular message or a first participant for the communication session, further additions can be limited to those who are also registered and/or logged into to the same electronic communication service that was selected for the first recipient. FIG. 7 illustrates an example sequence of screen images for user device 100 in sending a message to multiple recipients using unified messaging app 145 according to an embodiment of the invention.

[0082] FIG. 7 can be described as a sequence of screen images following the sequence of screen images 305-320 in FIG. 3. The initial screen 705 in FIG. 7 is similar to screen image 320, where the sender has selected Johnny Appleseed on service IM #1 as a recipient for the

new message. In this screen image 705, the sender can select add-recipient button 725 to add another recipient to the message to Johnny Appleseed.

[0083] In response to the user's selection of the add-recipient button 725, another "To:" line appears in screen image 710 to allow the user to identify another recipient. In screen image 710, the sender has input the letters "An" into search box 730 as a partial identifier for the additional recipient. Upon receiving the user input of the partial identifier, unified messaging app 145 of some embodiments can identify a set of account addresses (also referred to as "candidate recipient accounts") that match the user input.

[0084] Similar to the embodiment described above, unified messaging app 145 can identify the set of account addresses by matching the received partial identifier against first names, last names, e-mail addresses, and messaging user identifiers of contacts in the database of user contacts. In some embodiments, unified messaging app 145 can also determine whether the partial identifier matches messaging user identifiers of contacts in service-specific contacts lists of the sender. However, since the sender has already selected a particular electronic communication service to be used for Johnny Appleseed (service IM #1), unified messaging app 145 can filter the matches to include only account addresses for electronic communication service IM #1. As shown in screen image 710, a list of candidate account addresses 750 have been identified and displayed to the sender. The list only displays account addresses that use electronic communication service IM #1.

[0085] In screen image 715, the sender has selected one of the set of candidate account addresses for the intended recipient. As shown, the selected candidate account address 755 is highlighted, indicating that the sender has made a selection. In screen image 720, the second recipient is added to the "To:" line. The sender can select add recipient button 725 again to add another recipient or create a message to be sent, e.g., by typing in box 765. A similar process can be used to add participants to an established communication session, provided that the electronic communication service supports communication sessions with more than two participants.

[0086] In some embodiments, a communication application such as unified messaging app 145 can provide the functionality to facilitate a communication session between two or more participants. Unified messaging app 145 can allow a sender to conveniently identify an intended recipient account address across multiple electronic communication services to send a message. Unified messaging app 145 of some embodiments can determine a sender

account from which to send the message based on the electronic communication service associated with the selected recipient account addresses. Further, unified messaging app 145 can facilitate a communication session for a group of three or more participants and determine an appropriate electronic communication service for the communication session. The user can enjoy a seamless communication experience with any of her contacts on any electronic communication service they happen to be connected to, without having to switch applications or adapt to different user interfaces.

[0087] The communication application in some embodiments can provide other functionality including the ability to display a communication history between a first user and a second user to the first user. In response to a user request for communication history between a user and another user, unified messaging app 145 of some embodiments can aggregate and present a communication history between two users, including communication that took place across multiple electronic communication services.

[0088] Electronic communication services can be hosted by different providers and/or on different servers, and some electronic communication services can maintain records of past communication, e.g., e-mail archives or chat history files. FIG. 8 is a system diagram 800 that illustrates local and remote storage of electronic communication session files that can be located and aggregated to generate a communication history between users. In some embodiments, user device 100 can communicate via a wide area network 805 (e.g., the Internet) with various servers. As shown, the servers can include instant messaging service #1 server 810, SMS service server 815, and instant messaging service #2 server 820. Other servers (not shown) hosted by other providers of electronic communication services can also be connected to network 805. In this embodiment, each of servers 810, 815, and 820 stores communication history files in an associated data repository 825, 830, 835.

[0089] A representative communication file is shown as chat session file 840. File 840 can be a transcript of a chat session between two (or more) users and can be retrievable from data repository 825 by reference to various parameters such as the date, time, and/or participants' user names (or other account identifiers). In some embodiments, the date and time associated with the file can include a range of times over which communications occurred (e.g., all communications from the same day can be stored in one file, or if the communication service defines a session, the range of times can correspond to the duration of a session). File 840 can store a record of each message that was sent by either party during the relevant time

range, and each message can have a timestamp indicating when it was actually sent. In some embodiments, file 840 can include text data, audio data, video data, image data, or any other data representing the communication that took place. A communication file can include any number of messages; in some instances, each message may be in a separate file, or a single file may contain many messages.

[0090] Upon receiving a user request for a communication history between the first user and the second user, unified messaging app 145 can communicate with servers 810, 815, 820 in order to identify and obtain access to the communication session files associated with the two users. In some embodiments, unified messaging app 145 can request all session history files associated with accounts belonging to the two users.

[0091] It will be appreciated that the system of FIG. 8 is illustrative and that variations and modifications are possible. In some embodiments, communication files can be stored locally (e.g., in local information store 855 of FIG. 8) in addition to or instead of being stored on remote servers.

[0092] FIG. 9 is an example of creating a communication history page 900 by aggregating multiple communication session files according to an embodiment of the present invention. In this example, a user has requested the communication history with another user (Johnny Appleseed). In response to receiving the user's request, user device 100 can obtain communication session files between the user and the other user. The files can be obtained for any electronic communication service that the requesting user has used to communicate with the other person. Different files can be obtained for different services, and one or more files can be obtained from the same service. In the example of FIG. 9, the communication history includes three communication session files: a chat session file from an instant message service 910, an instant message/VOIP service 915, and a text message (SMS) service 920. While only three communication session files are retrieved for this particular example, there could be many more session files included in two users' communication history across various electronic communication services. Session files can be stored locally at user device 100 and/or remotely (e.g., at servers 810, 815, 820 as shown in FIG. 8). Remotely stored files can be retrieved in response to a user request.

[0093] In some embodiments, unified messaging app 145 can arrange individual communications from the communication session files in an order (e.g., a chronological order) such that the generated page displays the communication history in the order in which

the communications between the two users took place. As shown in FIG. 9, each communication line (corresponding to a message) in a communication session file can have a timestamp indicating when that message was sent. Based on the timestamps, unified messaging app 145 can sort the communication lines from all the communication session files across the different communication services and present a single page with the entire communication history arranged in chronological order. (In some embodiments, the communication lines can be sorted in a reverse chronological order or any other order, as desired.)

[0094] Page 900 in FIG. 9, which is generated by aggregating communication session files from instant message service 910, VOIP service 915, and text message service 920, shows the aggregated communication history between the user and Johnny Appleseed. The aggregated communication history shows all chat lines and text exchanges between the user and Johnny Appleseed, sorted by timestamps, without regard for which service was used. Because "Hey Mandy" from VOIP service 915 has a timestamp of 10:56:33 and is the first communication between the user and Johnny Appleseed, it is displayed as the first chat line in the aggregated communication history. The next communication occurred when Johnny Appleseed sent "Hello!" to the user via instant message service 910 at 13:20:05. Hence, it is displayed as the second chat line in the aggregated communication history. In this way, all the chat lines from instant message service 910 and VOIP service 915 are sorted by each of their associated timestamp. Communication lines from the different communication session files can be interleaved depending on each communication line's timestamp. Moreover, page 900 also includes the communication history between the user and Johnny Appleseed from SMS service 920. As indicated by their associated timestamps, the text messages were exchanged later in the day. Consequently, the text message exchanges are displayed at the bottom of page 900, below the communication history from instant message service 910 and VOIP service 915.

[0095] It will be appreciated that page 900 is illustrative and that variations and modifications are possible. In some embodiments, messages sent using different services can be visually distinguished from each other, e.g., by font, background color, service-identifying annotations (as shown in FIG. 9), and so on. In some embodiments, a communication history can include other message formats in addition to or instead of text. For example, if a record of an audio conversation is available, the record can be inserted at an appropriate point in the communication history page (e.g., based on a timestamp associated with the beginning or end

of the record). This can be indicated, e.g., by providing a visual cue at the appropriate location in the page and/or playback control elements to allow the user to play the audio. Video can be handled similarly, and a frame from the video can be included as an indicator that video is available.

[0096] As described, some embodiments can also sort the communication history in an order based on each file's timestamp or timestamps associated with various communication units defined by the service. A "communication unit" can include, e.g., a single message, a group of messages, all messages within a certain time interval, a block of conversation without a pause longer than twenty seconds, etc. This allows the user who requested the communication history to be able to readily view the entire communication history between the two users in a single page, regardless of the account addresses or the communication service used by either party when each communication took place. Further, the user can perform searches within the page to identify a dialogue the user is looking for, instead of having to open each communication session file and search the content of each file individually. In some instances, the communication history can be quite long and might not fit in the available display space. Page 900 can be scrollable to allow the user to view different portions of the history.

[0097] FIG. 10 is a flow diagram of a process 1000 for aggregating a communication history that stores communications between two users according to an embodiment of the present invention. Process 1000 can be implemented, e.g., in user device 100 of FIG. 1 executing unified messaging app 145.

[0098] At block 1002, unified messaging app 145 can receive a request for a communication history between a user and another person. The user can be a user of user device 100 requesting to view a communication history between herself and the other person. In some embodiments, the user can request to view the communication history by selecting a button in unified messaging app 145, making a selection from a pull down menu, etc. The user can specify one or more people with whom she has communicated in the past and request the communication history (e.g., video chat data, instant message exchanges, voice chat recordings, etc.) between them.

[0099] At block 1004, unified messaging app 145 can receive a user identifier for the other person. In some embodiments, the user identifier for the other person can be received as part of the received request for the communication history. Any of the recipient identification

techniques described above can be used to assist the user in providing the other person's user identifier.

[0100] At block 1006, unified messaging app 145 can identify a set of account addresses for the requesting user. In some embodiments, unified messaging app 145 can identify a set of account addresses for the user by accessing program files on user device 100 that store this information for unified messaging app 145. In some embodiments, the user's account address information is stored in a program file when the user creates and registers a new account with any one of an electronic communication service. Some embodiments allow the user to input this information into unified messaging app 145, which can store the information along with other user-specific settings. Further, some embodiments track the user's account address information in a remote server, and this server can be accessed when unified messaging app 145 requests the information.

[0101] At block 1008, unified messaging app 145 can determine a set of communication services associated with the first set of account addresses. This set can include any communication service that is associated with at least one of the requesting user's account addresses. In some embodiments, some services can be excluded from the set, e.g., if the service does not maintain communication session records or if the user has indicated that certain services (e.g., e-mail) should be excluded.

[0102] At block 1010, unified messaging app 145 can identify a second set of account addresses for the other person. In some embodiments, unified messaging app 145 can determine the second set of account addresses for the other person by searching user contacts database 150 (also referred to as an address book). For example, the user can identify the other person by providing a name or an account address or by selecting a record from the user's address book, and unified messaging app 145 can retrieve all of the contact's account addresses from the address book. Referring to FIG. 5, if the received user identifier at block 1004 is "Johnny Appleseed" (actual name) or one of his accounts, e.g., johnny@co.com, then unified messaging app 145 can search the address book to find matching entry 500 and extract all of the account addresses, including account addresses 510, 506, 508, 512, 518, 514, and 516. Some embodiments can filter the extracted account addresses to include only accounts or services that are in the set defined at block 1006.

[0103] At block 1012, unified messaging app 145 can retrieve a set of communication session files associated with the first and second sets of account addresses, either from the

servers or local storage. In some embodiments, unified messaging app 145 can identify all instances where the user and the other person both have accounts on the same electronic communication service. For each such pair of accounts, unified messaging app 145 can request, from the server of that electronic communication service, all the session files for that pair of account identifiers and retrieve any session files containing communications between those two accounts. In instances where the user or the other person (or both) has multiple accounts on a single service, multiple pairs of account identifiers can be used to obtain session files for that service. In instances where session files are stored locally, unified messaging app 145 can obtain the session files from local storage rather than requesting them from a server.

[0104] At block 1014, unified messaging app 145 can arrange the conversation units or lines from all of the retrieved communication session files in an order based on the associated timestamps. As described above with reference to FIG. 9, unified messaging app 145 can arrange the conversation line in a chronological order such that all of the conversation lines in all the communication session files are displayed in a single page and ordered based on their respective timestamps. This allows the user to view the communication history with the other person chronologically across all the communication services.

[0105] At block 1016, unified messaging app 145 can present at least a portion of the arranged conversation lines to the user. The arranged conversation lines can be presented in a single page or window where the user can view the entire communication history between the first user and the second user by simply scrolling through the page.

[0106] Systems and methods in accordance with various embodiments can present a communication history between two or more users using a page in a window, in response to receiving a user request for a communication history. In some embodiments, unified messaging app 145 can load communication history retrieved from various servers (e.g., servers 810, 815, and 820) into system memory and display the communication history to the user. Unified messaging app 145 of some embodiments can provide a seamless scrolling experience for the user if the communication lines currently visible to the user along with some adjacent lines are already loaded into system memory when the user is scrolling through the page. However, in some embodiments, the memory constraints can prevent unified messaging app 145 from loading the entire communication history into system memory. Some embodiments implement intelligent memory caching by dynamically loading

and unloading portions of the communication history page into and out of system memory, based at least in part on the portion within the page that the user is viewing at any given time.

[0107] An example of dynamic loading and unloading of portions of a communication history page is illustrated in FIGs. 11A and 11B, which are representations of a communication history page 1105 at two different times. In FIGs. 11A and 11B, page 1105 represents the entire communication history between two users. In some embodiments, page 1105 can be generated using techniques described above. For convenience of description, page 1105 is shown as being divided into a number of cells 1102, each corresponding to a portion of the communication history. A cell 1102 can be, e.g., a fixed number of conversation lines (e.g., one hundred lines) or a fixed amount of data (such as a page of system memory).

[0108] In FIGs. 11A and 11B, an empty cell (e.g., cell 1102(1) of FIG. 11A) indicates that the corresponding portion of page 1105 is not currently loaded in memory. A cell containing lines (e.g., cell 1102(15) of FIG. 11A) indicates that corresponding portion is currently loaded in memory. A cell with the notation "Now loading …" (e.g., cell 1102(8) in FIG. 11A) indicates that the corresponding portion is in the process of being loaded into memory. A cell with the notation "Now unloading …" (e.g., cell 1102(10) in FIG. 11B) indicates that the corresponding portion is in the process of being unloaded from memory. Windows 1115 and 1120 indicate which portion of page 1105 is currently being displayed in FIGs. 11A and 11B respectively.

[0109] In some embodiments, the number of cells 1102 that are in memory at any given time can be constant (except for possible transient fluctuations due to loading and unloading) while the user is viewing communication history page 1105. The number can be large enough to provide enough information to fill the display area where the history is presented (five cells 1102 in the example of FIG. 11), and in some embodiments the number can be larger, e.g., to allow additional portions of page 1105 to be pre-loaded in advance of the user scrolling the page. As the user scrolls through page 1105 page, new cells 1102 are loaded into memory and other cells 1102 are unloaded from memory to keep the total memory usage essentially constant.

[0110] For example, FIG. 11A can correspond to the time when page 1105 is first displayed in response to a user request. In this embodiment, page 1105 can include conversation lines arranged in chronological order, and the initial display shows the most

recent lines (which are at the bottom of page 1105). Cells 1102(10)-1102(15), which correspond to portions of page 1105 that are being displayed, are in memory. In addition, cell 1102(9), which corresponds to a portion of page 1105 just outside the visible portion, is also in memory, and the next two cells 1102(7) and 1102(8) are loading. If the user begins to scroll up, the next several portions of page 1105 are (or will soon be) ready to display.

[0111] FIG. 11B can correspond to a later time, after the user has begun to scroll up. Now the portion of page 1105 within window 1120 is visible. The corresponding cells 1102(4)-1102(9) have been loaded. Cell 1102(10), which has scrolled out of view, remains loaded; if the user starts scrolling back down, this portion of page 1105 will be ready to display. Cells 1102(11) and 1102(12), which are farther out of view, are being unloaded, and cells 1102(13)-1102(15) are now empty. Cells 1102(2) and 1102(3) are now loading, and their content will be ready to display if the user continues to scroll up. As can be seen by comparing FIGs. 11A and 11B, the total amount of memory in use is essentially the same at both times. (In this example, unloading cells is a fast process.)

[0112] Dynamic loading and unloading behavior can be optimized in an implementation-dependent manner. For example, the size of a cell can be selected as desired, and the maximum number of cells to load can also be selected as desired. In some embodiments, the cell size can be defined as a fixed number of messages or a fixed amount of content. Choices of cell size and maximum number of cells to load can depend on considerations such as loading speed, rendering speed, the amount of memory available, and limitations on the acceptable delay in displaying different portions of the communication history in response to user scrolling. In some embodiments, considerations of such as font size, display resolution, and window size, which determine how much of the content will be simultaneously visible, can also be considered when selecting a cell size and maximum number of cells to load.

[0113] In some embodiments, certain portions of the communication history (e.g., one or more cells corresponding to the most recent communications) can be kept in memory at all times while other portions of the history are dynamically loaded and unloaded.

[0114] In addition, the type of data that is stored in memory for a loaded cell can be varied. In some embodiments, loading includes storing just the message data in system memory, with rendering and formatting processes to generate a viewable image from the message data being performed in real time. In other embodiments, loading can include performing the

rendering and formatting processes so that the cell is stored in memory as an image block or other data that is directly displayable. In some embodiments, loading can also include dynamically building portions of an aggregated communication history from session files (e.g., as described above). In some embodiments, an aggregated communication history can be built once and stored (e.g., in a cache or local data file), and loading can include transferring portions of this stored history data to system memory to enable faster access. Dynamic loading and unloading is optional; in some embodiments, the entire communication history can be loaded into system memory at once.

[0115] A communication application of some embodiments can present a communication history between two or more users where the communication history includes communications between the two or more users across all the electronic communication services they have used for communication in the past. The communication application can provide the user scrolling through a window displaying the communication history a seamless user experience by performing intelligent memory management. Due to the memory limitations, the communication application dynamically loads and unloads aggregated communication history as the user scrolls to different portions of the window.

[0116] While the invention has been described with respect to specific embodiments, one skilled in the art will recognize that numerous modifications are possible. For example, embodiments described above can provide unified messaging (or unified communication) across a broad range of electronic communication services including e-mail, instant messaging, text messaging, SMS, VOIP, and so on, and the communication can incorporate text, audio, video, images, or any other form of communication. It is to be understood that not all electronic communication services need be supported, and different embodiments can support different combinations of services mentioned herein and/or other electronic communication services.

[0117] A user can have any number of contacts and can communicate with a particular contact via any combination of the available services. In some instances, a user can use a unified messaging application to communicate with parties for whom no record exists in the user's address book.

[0118] Further, presentation of aggregated communication history can be limited to services that provide records of past communications, and the completeness of an aggregated communication history can be limited by the availability or unavailability of usable records.

Communication history can also be aggregated across a subset of the available records, e.g., based on a date range or a user-selected subset of the electronic communication services.

[0119] Embodiments of the present invention can be realized using any combination of dedicated components and/or programmable processors and/or other programmable devices. The various processes described herein can be implemented on the same processor or different processors in any combination. Where components are described as being configured to perform certain operations, such configuration can be accomplished, e.g., by designing electronic circuits to perform the operation, by programming programmable electronic circuits (such as microprocessors) to perform the operation, or any combination thereof. Processes can communicate using a variety of techniques including but not limited to conventional techniques for interprocess communication, and different pairs of processes may use different techniques, or the same pair of processes may use different techniques at different times. Further, while the embodiments described above may make reference to specific hardware and software components, those skilled in the art will appreciate that different combinations of hardware and/or software components may also be used and that particular operations described as being implemented in hardware might also be implemented in software or vice versa.

[0120] Computer programs incorporating various features of the present invention may be encoded and stored on various computer readable storage media; suitable media include magnetic disk or tape, optical storage media such as compact disk (CD) or DVD (digital versatile disk), flash memory, and other non-transitory media. Computer readable media encoded with the program code may be packaged with a compatible electronic device, or the program code may be provided separately from electronic devices (e.g., via Internet download or as a separately packaged computer-readable storage medium).

[0121] Thus, although the invention has been described with respect to specific embodiments, it will be appreciated that the invention is intended to cover all modifications and equivalents within the scope of the following claims.

WHAT IS CLAIMED IS:

1. A method comprising:

receiving, at a computer, user input including a partial identifier for an intended recipient of a message to be sent by a sender;

determining, by the computer, based at least in part on the partial identifier, a list including a set of candidate account addresses;

presenting, by the computer, a list including the set of candidate account addresses;

receiving, by the computer, a user selection of one of the candidate account addresses as the identifier of the intended recipient for the message;

determining, by the computer, in response to the selection, a sender account address associated with the sender to be used for sending the message to the intended recipient; and

sending the message to the selected candidate account address from the sender account address.

2. The method of claim 1, wherein the set of candidate account addresses includes a set of user identifiers associated with a plurality of electronic communication services.

3. The method of claim 2, wherein the plurality of electronic communication services includes at least one of e-mail, instant messaging (IM), Short Message Service (SMS), or Voice over Internet Protocol (VoIP).

4. The method of claim 2, wherein determining the sender account address includes:

determining that the selected candidate account address is associated with a first one of the plurality of electronic communication services; and

selecting, as the sender account address, an account associated with the sender and the first one of the plurality of electronic communication services.

5. The method of claim 2, further comprising:

identifying, by the computer, a first one of the plurality of electronic communication services as being associated with the selected candidate account address;

receiving another user input including another partial identifier for another intended recipient of the message;

searching, by the computer, the database of user contacts to identify another set of candidate account addresses; and

determining a subset of the set of the other set of candidate account addresses, each candidate account address in the subset being associated with the first electronic communication service; and

presenting, by the computer, the subset of candidate account addresses from which the sender can select another intended recipient for the message.

6. The method of claim 1, wherein determining the list including the set of candidate account addresses includes:

determining whether the partial identifier matches at least one of a first name, a last name, or an account address of one or more contacts in a database of user contacts,

wherein the list is presented in response to determining that the partial identifier matches at least one of the first name, the last name, or the account address, and

wherein the list includes the determined matches.

7. A method comprising:

receiving, at a computer, user input including a sequence of characters;

searching, by the computer and based at least in part on the sequence of characters, a database of user contacts to identify a first set of candidate recipient accounts;

identifying, by the computer, a set of electronic communication services to which a sender is connected;

searching, by the computer and based at least in part on the sequence of characters, one or more service-specific contacts lists of the sender, each service-specific contacts list being associated with one of the electronic communication services in the set of electronic communication services to identify a second set of candidate recipient accounts;

presenting, by the computer, the first and second sets of candidate recipient accounts to the sender; and

receiving, by the computer, user selection of a particular candidate recipient account from the first and second sets of candidate recipient accounts to send a communication.

8. The method of claim 7, wherein searching the database of user contacts includes searching for a match between the sequence of characters and at least a portion of a first name, a last name, or an account address for each contact in the database of user contacts.

9. The method of claim 7, wherein the set of electronic communication services includes an instant messaging service.

10. The method of claim 7 further comprising:

determining an associated electronic communication service for the particular candidate recipient account; and

selecting, based on the associated electronic communication service, a sender account to send the communication.

11. A computer readable storage medium encoded with program instructions that, when executed, cause a processor in a computing device to execute a method for facilitating a chat session, the method comprising:

receiving user input including a partial identifier for an intended recipient of an instant message to be sent by a sender;

searching, based at least in part on the partial identifier, a database of user contacts to identify a set of candidate account addresses for a set of candidate recipients, the set of candidate account addresses including a set of user identifiers associated with a plurality of electronic communication services;

presenting a list including the set of candidate account addresses;

receiving a user selection of one of the candidate account addresses as the identifier of the intended recipient for the instant message; and

determining, based at least in part on the selected candidate account address, a sender account address associated with the sender to be used for sending the instant message to the intended recipient.

12. The computer readable storage medium of claim 11, wherein at least one of the user identifiers is associated with two different electronic communication services.

13. The computer readable storage medium of claim 11, wherein the instant message includes at least one of textual data, video data, audio data, or image data.

14. The computer readable storage medium of claim 11, wherein determining the sender account address associated with the sender includes:

determining a particular electronic communication service associated with the selected candidate account address;

determining a set of sender account addresses associated with the particular electronic communication service; and

selecting the sender account address from the set of sender account addresses by identifying a particular sender account address in the set of sender account addresses that communicates most frequently with the candidate account address.

15. The computer readable storage medium of claim 11, wherein searching the database of user contacts includes:

matching the partial identifier with a set of first names in the database of user contacts to identify a subset of matching first names;

matching the partial identifier with a set of last names in the database of user contacts to identify a subset of matching last names; and

matching the partial identifier with a set of account addresses in the database of user contacts to identify a subset of matching account addresses,

wherein the set of candidate account addresses includes the subset of matching first names, the subset of matching last names, and the subset of matching account addresses.

16. An electronic device, comprising:

a processor;

a memory device coupled to the processor, the memory device including instructions to be executed for facilitating communication, wherein the instructions, when executed by the processor, cause the processor to:

receive user input including a partial identifier for an intended recipient of a message to be sent by a sender;

search, based at least in part on the partial identifier, a database of user contacts to identify a set of candidate account addresses for a set of candidate

recipients, wherein the set of candidate account addresses includes user identifiers associated with a plurality of electronic communication services;

present a list including the set of candidate account addresses;

receive a user selection of one of the candidate account addresses as the identifier of the intended recipient for the message; and

determine, in response to the selection, a sender account address associated with the sender to be used for sending the message to the intended recipient.

17. The electronic device of claim 16, wherein the user input is received through keyboard input, gesture input, gaze input, or voice command input.

18. The electronic device of claim 16, wherein the partial identifier is at least one of a string of characters, a characteristic of a candidate recipient, or a characteristic of an electronic device of the candidate recipient.

19. The electronic device of claim 16, wherein the instructions that cause the processor to search the database of user contacts further includes instructions that, when executed by the processor, cause the processor to:

determine whether the partial identifier matches at least one of a first name, a last name, or an account address of contacts in the database of user contacts;

subsequent to determining whether the partial identifier matches at least one of the first name, the last name, or the account address of the contacts, identify a set of electronic communication services to which the sender is connected; and

determine, for each of the set of electronic communication services, whether the partial identifier matches a message identifier of contacts in the database of user contacts, the message identifier being associated with one of the set of electronic communication services,

wherein the list presented includes matches to the partial identifier.

20. The electronic device of claim 16, wherein the instructions that cause the processor to search the database of user contacts further includes instructions that, when executed by the processor, cause the processor to:

determine whether the partial identifier matches at least one of a first name, a last name, or an account address of contacts in the database of user contacts;

in response to determining that the partial identifier does not match at least one of the first name, the last name, or the account address of users, determine whether the partial identifier matches at least one of a communication identifier in a service-specific contacts list,

wherein the communication identifier is associated with at least one of the set of electronic communication services.

21. A computer readable storage medium encoded with program instructions that, when executed, cause a processor in a computing device to execute a method for setting up a communication session, the method comprising:

receiving user input including a sequence of characters;

searching, based at least in part on the sequence of characters, a database of user contacts to identify a first set of candidate recipient accounts;

identifying a set of electronic communication services to which the user is connected;

searching, based at least in part on the sequence of characters, one or more service-specific contacts lists of the sender, each service-specific contacts list being associated with one of the electronic communication services in the set of electronic communication services to identify a second set of candidate recipient accounts;

presenting the first and second sets of candidate recipient accounts to the sender; and

receiving user selection of a particular candidate recipient account from the first and second sets of candidate recipient accounts to send a communication.

22. The computer readable storage medium of claim 21, wherein one of the service-specific contacts list of the sender is stored locally on the computer readable storage medium, wherein another one of the service-specific contacts list of the sender is stored at a remote server accessible through an application programming interface (API).

23. The computer readable storage medium of claim 21, wherein the set of communication services includes a set of communication services which the sender is currently logged into.

24. The computer readable storage medium of claim 21, wherein presenting the first and second sets of candidate recipient accounts includes presenting an

ordered list in which the candidate recipient accounts in the first set precede the candidate recipient accounts in the second set.

25. The computer readable storage medium of claim 21, wherein the first and second sets of candidate recipient accounts are presented to the user by displaying their associated user identifiers and electronic communication service, wherein the first and second sets of candidate recipient accounts are displayed in alphabetical order based at least in part on their associated user identifiers.

26. The computer readable storage medium of claim 21, where determining the set of candidate recipient accounts includes performing a match against a portion of at least one of a first name, a last name, or an account address of each contact stored in the database of user contacts.

27. The computer readable storage medium of claim 21, wherein the method further comprises:

in response to receiving the user selection of the particular candidate recipient account, determining a particular electronic communication service associated with the particular candidate recipient account;

determining a sender account that is associated with the particular electronic communication service; and

sending the communication to the particular candidate recipient account using the sender account.

28. A method comprising:

receiving, at a computer, a request for a communication history between a first user and a second user;

obtaining, by the computer, a set of communication session files that store communications between the first user and the second user, each of the set of communication session files including a set of conversation lines, each of the set of conversation lines being associated with a timestamp, wherein the conversation lines in different ones of the set of communication session files were transmitted using different ones of a plurality of electronic communication services;

arranging, by the computer, the conversation lines from all of the set of communication session files in an order based on the associated timestamps; and

presenting, by the computer, at least a portion of the arranged conversation lines.

29. The method of claim 28 wherein the request is received from the first user and includes a first identifier for the second user, the method further comprising:

determining, by the computer, one or more other identifiers for the second user,

wherein obtaining the set of communication session files includes obtaining a communication session file associated with one of the one or more other identifiers of the second user.

30. The method of claim 29, wherein the one or more other identifiers for the second user is determined by searching a database of user contacts and identifying a set of identifiers associated with the first identifier for the second user, the one or more other identifiers being associated with different ones of the plurality of electronic communication services.

31. The method of claim 28, wherein the order is a chronological order.

32. The method of claim 28 wherein obtaining the set of communication session files between the first user and the second user includes:

identifying a first set of account identifiers associated with the first user, each of the first set of account identifiers being associated with one of a set of electronic communication services; and

for the set of electronic communication services, identifying a second set of account identifiers associated with the second user, wherein the set of chat session files is obtained by retrieving communication session files associated with at least one account identifier in the first set of account identifiers and at least one account identifier in the second set of account identifiers.

33. A method comprising:

receiving, at a computer, a request for a communication history between a first user and a second user;

identifying, by the computer, a first set of account identifiers of the first user, wherein the first set of account identifiers is associated with a plurality of electronic communication services, and, based at least in part on the plurality of electronic

communication services, further identifying a second set of account identifiers of the second user;

obtaining access to a set of communication session files that store communications between the first user and the second user based at least in part on the first set of account identifiers and the second set of account identifiers; and

displaying, to the first user, content of a portion of the set of communication session files.

34. The method of claim 33, wherein each of the set of communication session files includes a set of conversation units that are each associated with a timestamp, the method further comprising:

ordering, based on the associated timestamps, the conversation units from all of the communication session files, wherein the portion of the set of communication session files displayed to the first user includes at least a portion of the ordered conversation units.

35. The method of claim 33, wherein the communication history includes at least one of textual data, audio data, video data, image data, or a combination thereof.

36. The method of claim 33, wherein the set of communication session files includes a first subset of the communication session files that are obtained locally and a second subset of the communication session files that are obtained from a remote server accessible through an application programming interface (API).

37. The method of claim 33, wherein the plurality of electronic communication services includes at least one of e-mail, instant messaging, Short Message Service (SMS), or Voice over Internet Protocol (VoIP).

38. A computer readable storage medium encoded with program instructions that, when executed, cause a processor in a computing device to execute a method, the method comprising:

receiving a request for a message exchange history between a first user and a second user;

obtaining access, across a plurality of electronic communication services, to a plurality of exchange records between the first user and the second user, each of the plurality

of exchange records having a set of communication units that are each associated with a timestamp;

arranging, based at least in part on the associated timestamp, the set of communication units from the plurality of exchange records in an order; and

presenting at least a portion of the arranged set of communication units.

39. The computer readable storage medium of claim 38, wherein the request is received through at least one of a keyboard input, a gesture input, or a voice command.

40. The computer readable storage medium of claim 38, wherein the different ones of the plurality of electronic communication services includes different electronic communication services that are provided by different service providers.

41. The computer readable storage medium of claim 38, wherein receiving the request for the message exchange history between the first user and the second user includes receiving a selection of an account identifier of the second user in any one of the plurality of electronic communication services.

42. The computer readable storage medium of claim 38, wherein receiving the request for the communication history between the first user and the second user includes receiving a selection of the second user in a database of user contacts associated with the first user.

43. An electronic device, comprising:

a processor;

a memory device coupled to the processor, the memory device including instructions to be executed for facilitating communication, wherein the instructions, when executed by the processor, cause the processor to:

receive a request for a communication history between a first user and a second user;

obtain access to a set of communication session files that store communications between the first user and the second user, each of the set of communication session files including a set of conversation lines, each of the set of conversation lines being associated with a timestamp, wherein the conversation lines

in different ones of the set of communication session files were transmitted using different ones of a plurality of electronic communication services;

arrange, based on the associated timestamps, the conversation lines from all of the set of communication session files in an order; and

present at least a portion of the arranged conversation lines.

44. The electronic device of claim 43, wherein the arranged conversation lines are displayed on a page in a user interface of the electronic device, wherein the portion of the arranged conversation lines presented corresponds to the portion of the page currently being viewed by the first user.

45. The electronic device of claim 44, wherein at least the portion of the arranged conversation lines is loaded, wherein the instructions that cause the processor to search the database of user contacts further include instructions that, when executed by the processor, cause the processor to:

receive an indication that the portion of the page currently being viewed by the user has changed to another portion of the page; and

in response to receiving the indication, loading another portion of the arranged conversation lines corresponding to the other portion of the page currently being viewed by the first user.

46. The electronic device of claim 43, wherein the order is a reverse chronological order.

47. The electronic device of claim 43, wherein access to the set of communication session files is obtained by requesting access to subsets of the communication session files at their corresponding electronic communication services through one or more application programming interfaces (APIs).

48. A computer readable storage medium encoded with program instructions that, when executed, cause a processor in a computing device to execute a method, the method comprising:

receiving a request for a communication history between a first user and a second user;

identifying a first set of account identifiers of the first user, wherein the first set of account identifiers is associated with a plurality of electronic communication services, and, based at least in part on the plurality of electronic communication services, further identifying a second set of account identifiers of the second user;

obtaining access to a set of communication session files between the first user and the second user based at least in part on the first set of account identifiers and the second set of account identifiers; and

displaying a portion of the set of communication session files to the first user.

49. The computer readable storage medium of claim 48, wherein each communication session file in the set of communication session files includes a set of communication units that are each associated with a timestamp, wherein the method further comprises:

sorting the set of communication units across the set of communication session files, wherein the portion of the set of communication session files displayed to the first user includes interleaving communication units from different communication session files.

50. The computer readable storage medium of claim 48, wherein obtaining access to the set of communication session files comprises:

determining communication session files that include at least one of an account identifier in the first set of account identifiers and at least one of an account identifier in the second set of account identifiers.

FIG. 1

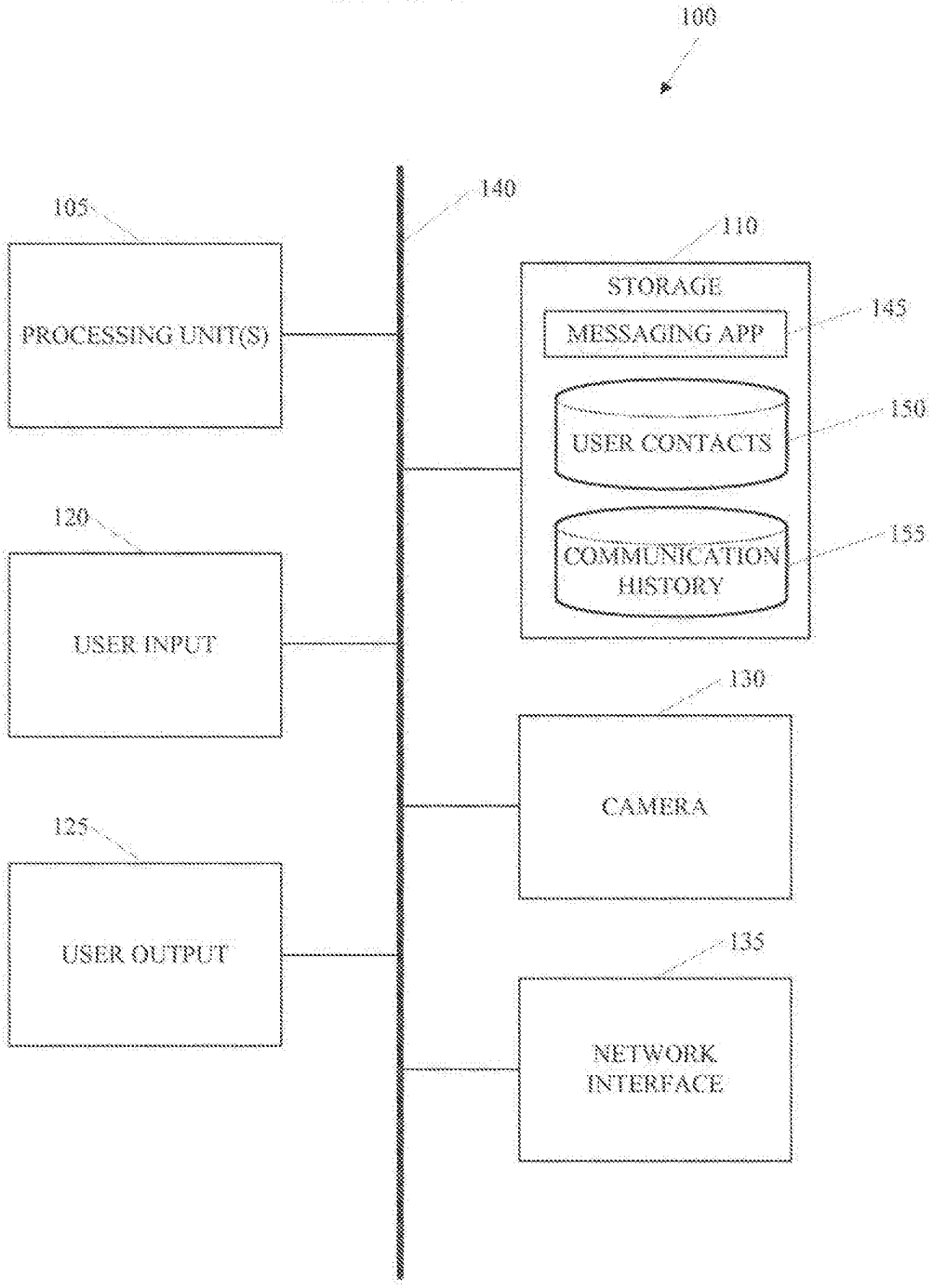

100
105
PROCESSING UNIT(S)
140
110
STORAGE
MESSAGING APP
145
USER CONTACTS
150
COMMUNICATION HISTORY
155
120
USER INPUT
130
CAMERA
125
USER OUTPUT
135
NETWORK INTERFACE

FIG. 2

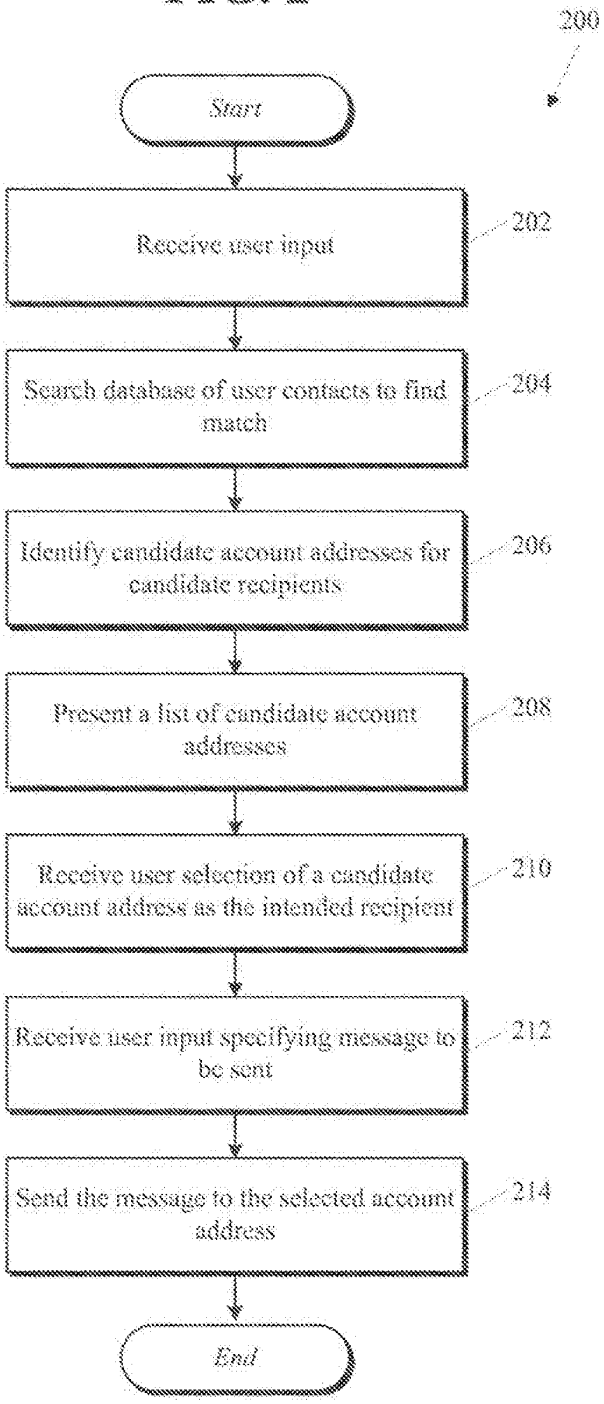

200
Start
Receive user input
202
Search database of user contacts to find match
204
Identify candidate account addresses for candidate recipients
206
Present a list of candidate account addresses
208
Receive user selection of a candidate account address as the intended recipient
210
Receive user input specifying message to be sent
212
Send the message to the selected account address
214
End

FIG. 3

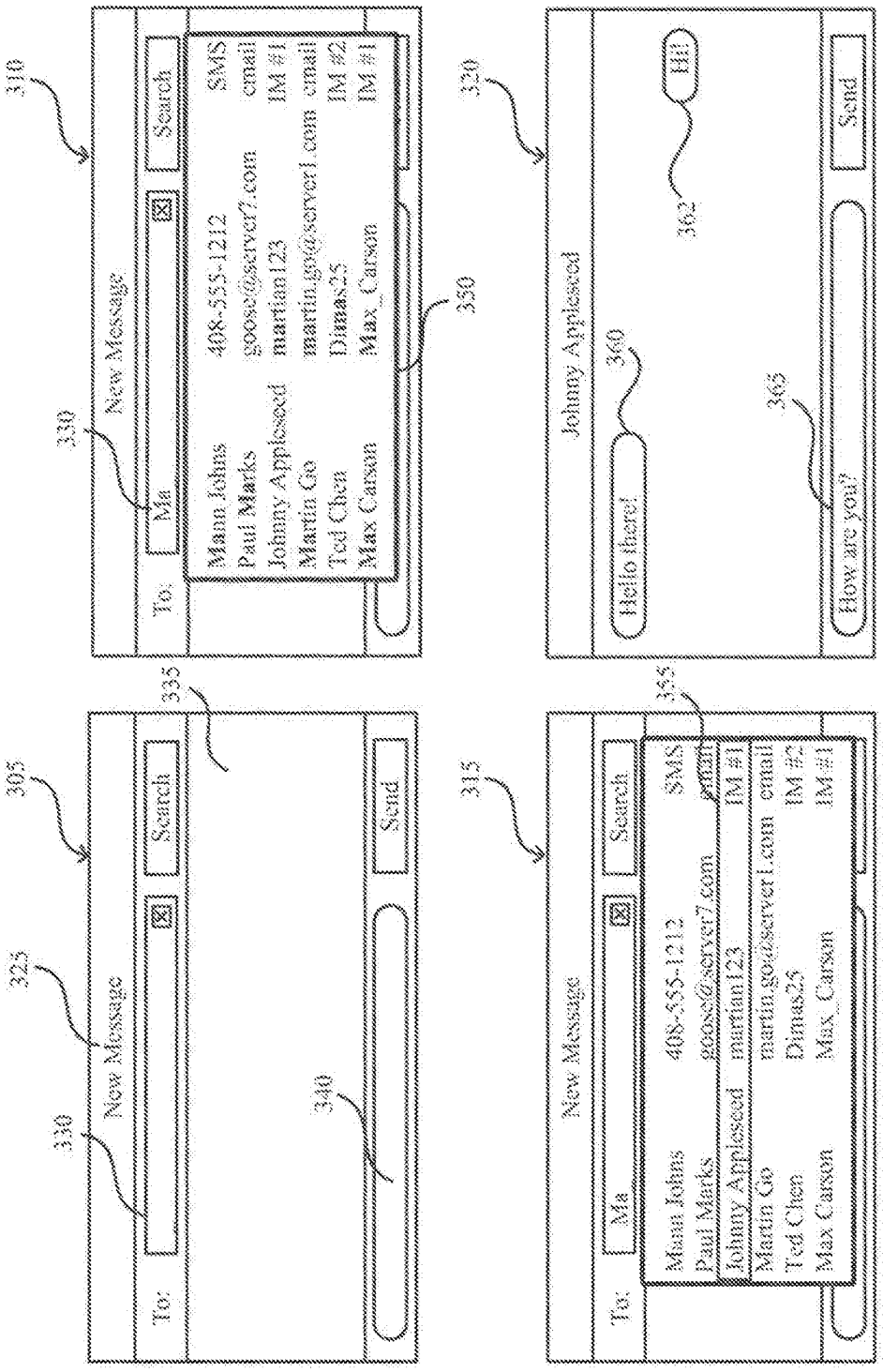

305
New Message
To:
Search
323
330
335
340
Send
310
New Message
To:
Me
Search
330
Mann Johns 408-555-1212 SMS
Paul Marks goose@server7.com email
Johnny Appleseed martian123 IM #1
Martin Go martin.go@server1.com email
Ted Chen Dimas25 IM #2
Max_Carson Max_Carson IM #1
350
315
New Message
To:
Me
Search
335
Mann Johns 408-555-1212 SMS
Paul Marks goose@server7.com email
Johnny Appleseed martian123 IM #1
Martin Go martin.go@server1.com email
Ted Chen Dimas25 IM #2
Max_Carson Max_Carson IM #1
320
Johnny Appleseed
360
Hello there!
362
Hi!
365
How are you?
Send

FIG. 4

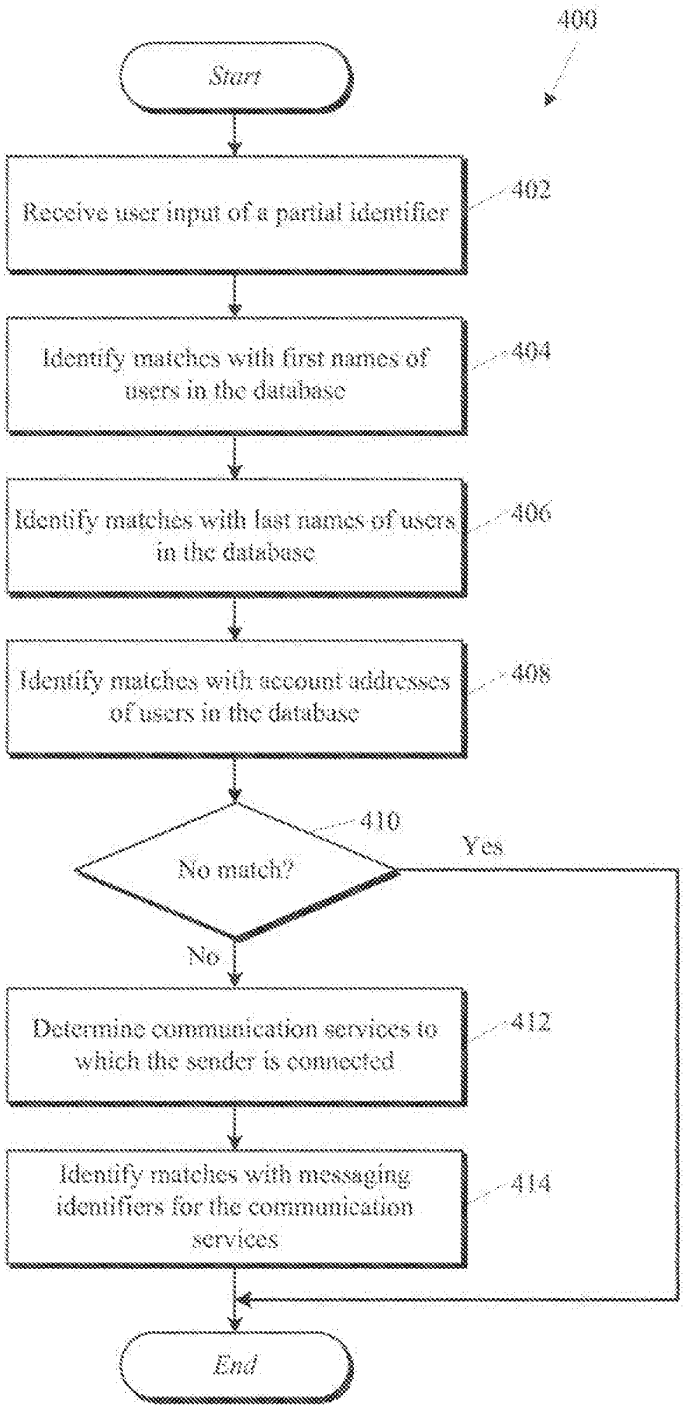
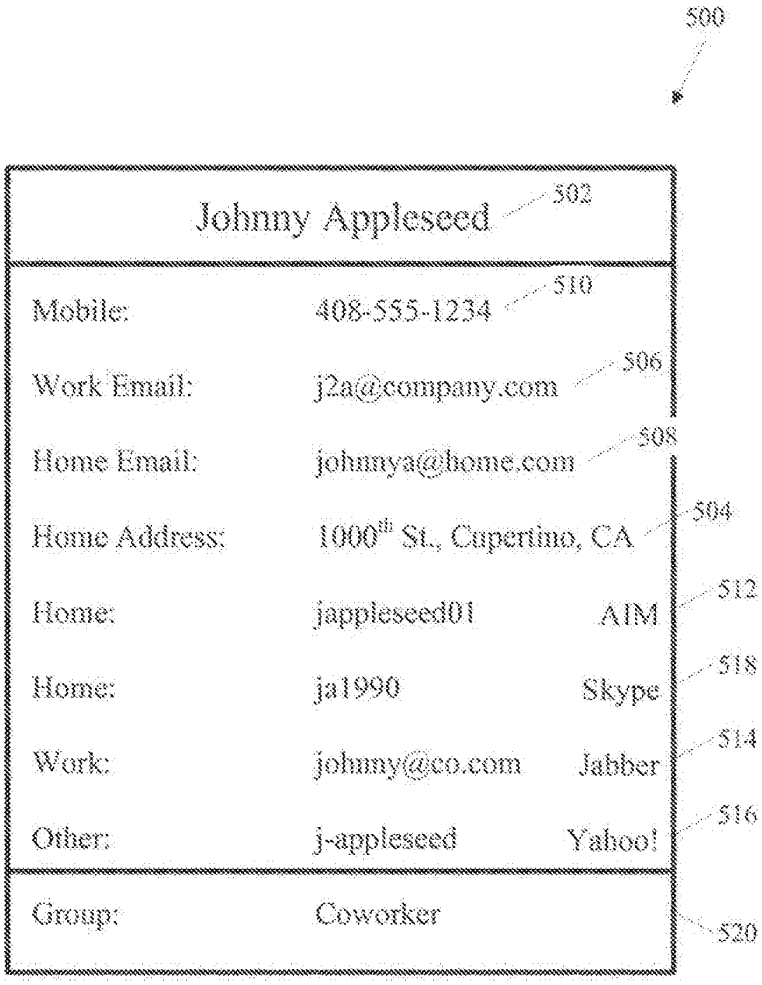

400
Start
Receive user input of a partial identifier
402
Identify matches with first names of users in the database
404
Identify matches with last names of users in the database
406
Identify matches with account addresses of users in the database
408
No match?
410
Yes
No
Determine communication services to which the sender is connected
412
Identify matches with messaging identifiers for the communication services
414
End

FIG. 5


500
Johnny Appleseed
502
Mobile:
408-555-1234
510
Work Email:
j2a@company.com
506
Home Email:
johnnya@home.com
508
Home Address:
1000th St., Cupertino, CA
504
Home:
jappleseed01
AIM
512
Home:
ja1990
Skype
518
Work:
johnny@co.com
Jabber
514
Other:
j-appleseed
Yahoo!
516
Group:
Coworker
520

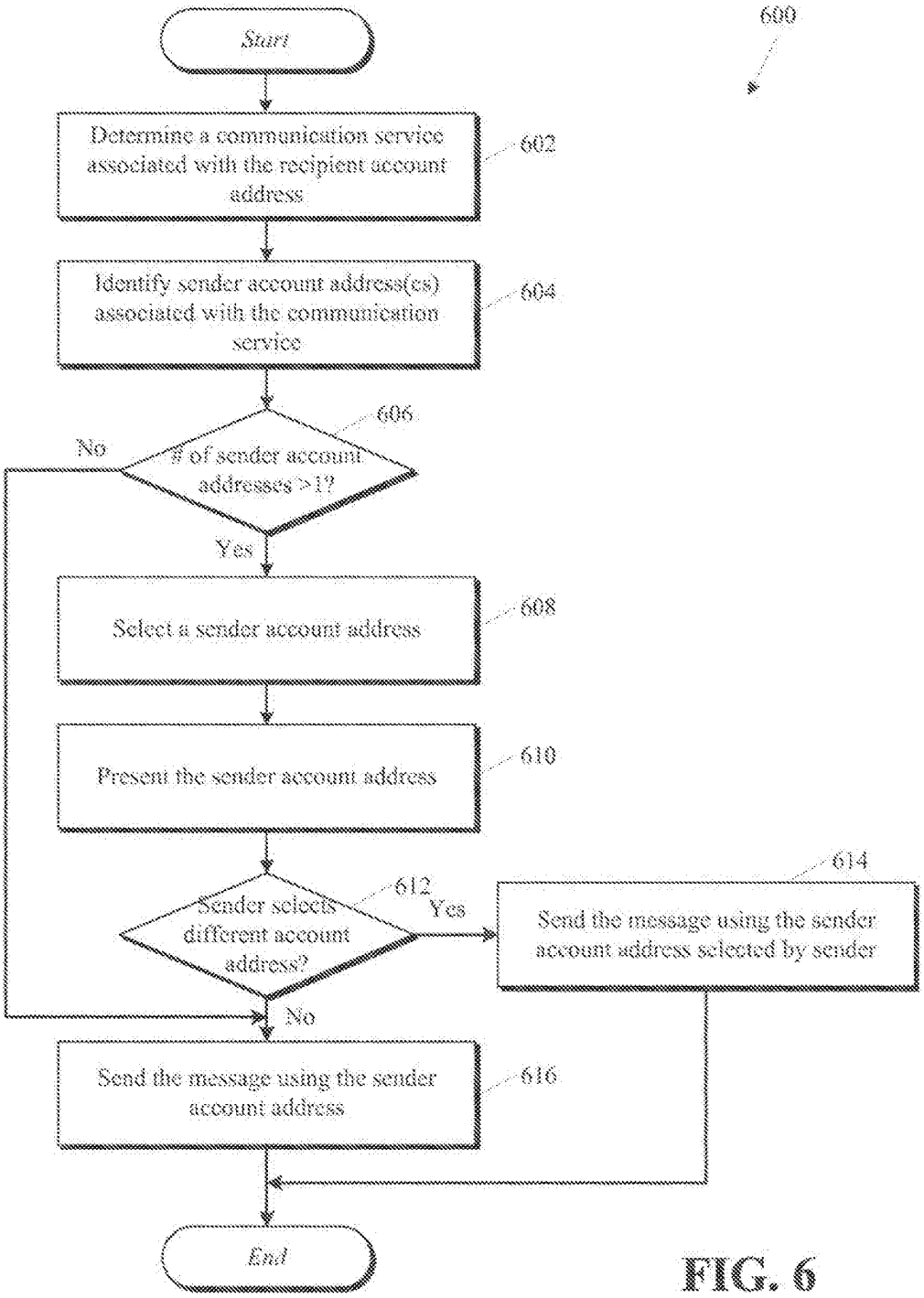
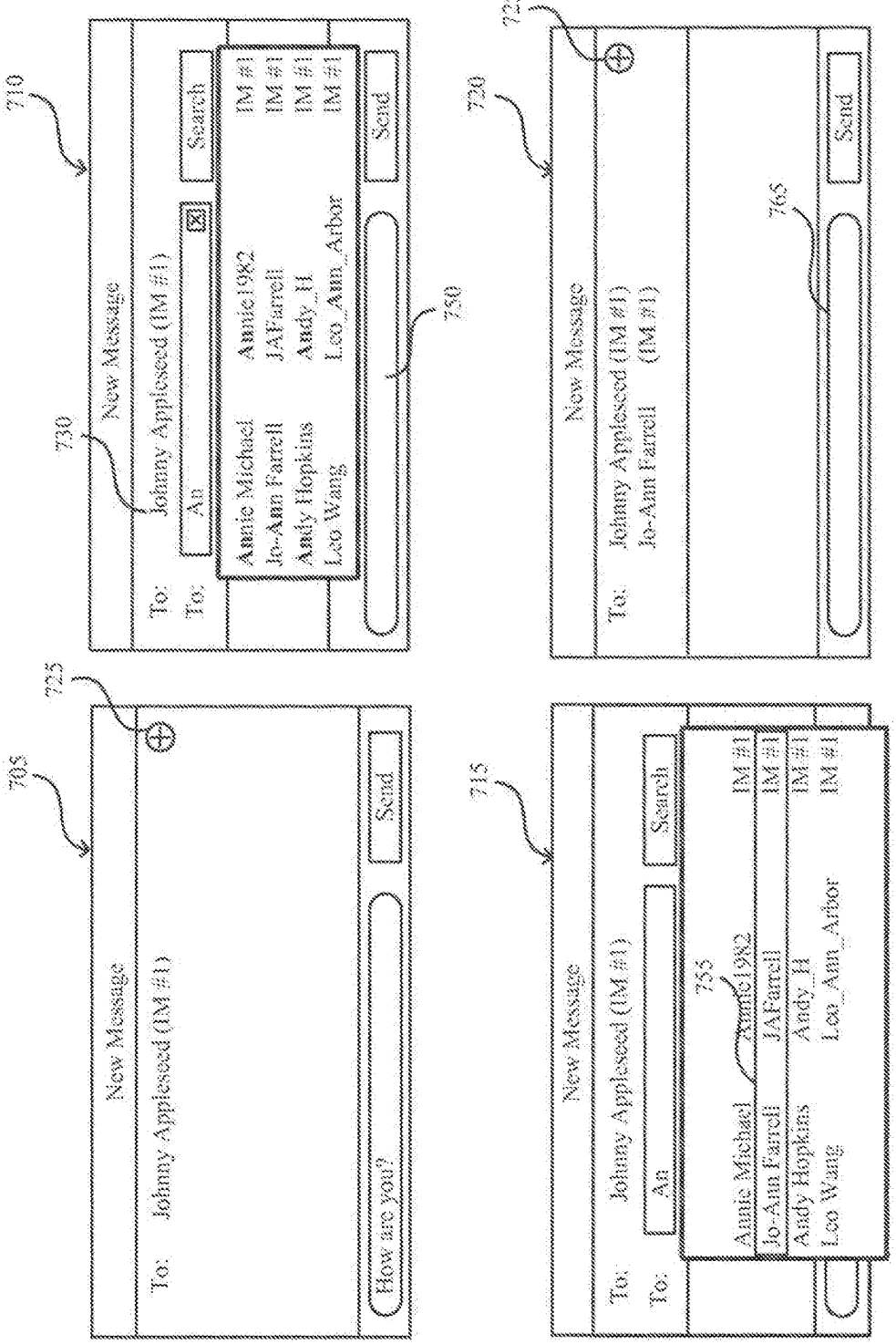

600
Start
Determine a communication service associated with the recipient account address
602
Identify sender account address(es) associated with the communication service
604
606
of sender account addresses >1?
No
Yes
Select a sender account address
608
Present the sender account address
610
612
Sender selects different account address?
Yes
614
Send the message using the sender account address selected by sender
No
Send the message using the sender account address
616
End

FIG. 6

FIG. 7


705
710
715
720
725
730
735
740
745
750
755
760
765
New Message
To: Johnny Appleseed (IM #1)
An
Search
Annie Michael Annie1982 IM #1
Jo-Ann Farrell JAFarrell IM #1
Andy Hopkins Andy_H IM #1
Leo Wang Leo_Ann_Arbor IM #1
How are you?
Send

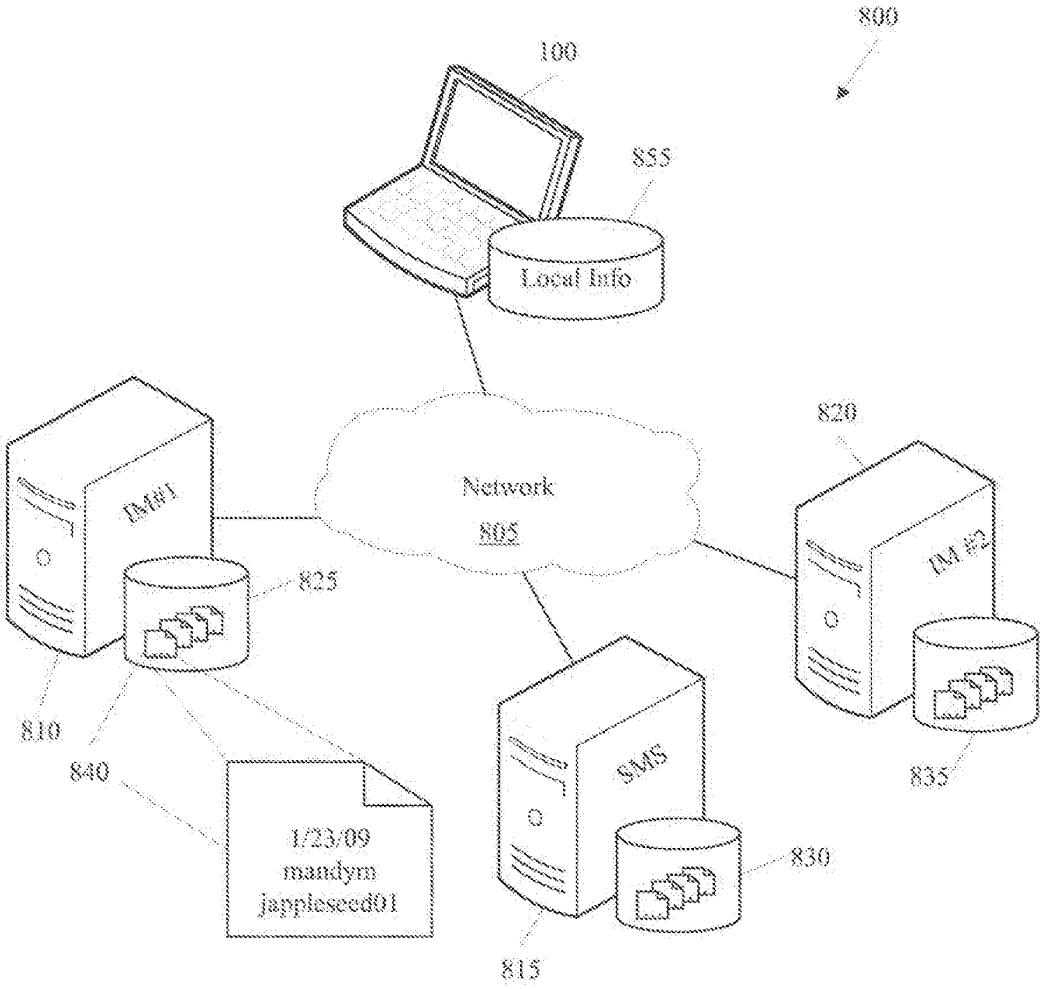
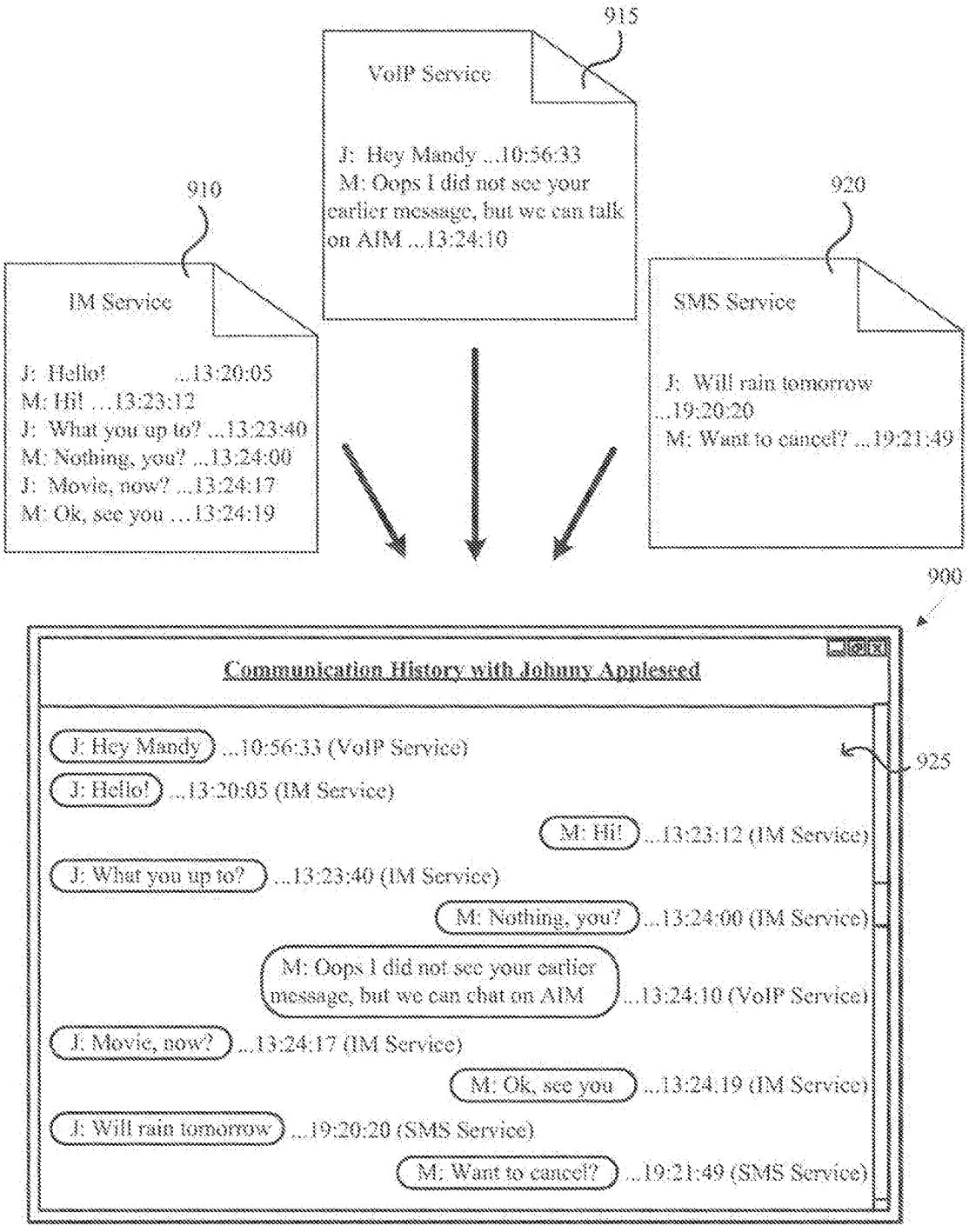

800
100
855
Local Info
Network
805
820
IM #1
IM #2
825
810
840
1/23/09
mandym
jappleseed01
SMS
830
815
835

FIG. 8

FIG. 9


915
VoIP Service
J: Hey Mandy ...10:56:33
M: Oops I did not see your earlier message, but we can talk on AIM ...13:24:10
910
IM Service
J: Hello! ...13:20:05
M: Hi! ...13:23:12
J: What you up to? ...13:23:40
M: Nothing, you? ...13:24:00
J: Movie, now? ...13:24:17
M: Ok, see you ...13:24:19
920
SMS Service
J: Will rain tomorrow ...19:20:20
M: Want to cancel? ...19:21:49
900
Communication History with Johnny Applessed
925
J: Hey Mandy ...10:56:33 (VoIP Service)
J: Hello! ...13:20:05 (IM Service)
M: Hi! ...13:23:12 (IM Service)
J: What you up to? ...13:23:40 (IM Service)
M: Nothing, you? ...13:24:00 (IM Service)
M: Oops I did not see your earlier message, but we can chat on AIM ...13:24:10 (VoIP Service)
J: Movie, now? ...13:24:17 (IM Service)
M: Ok, see you ...13:24:19 (IM Service)
J: Will rain tomorrow ...19:20:20 (SMS Service)
M: Want to cancel? ...19:21:49 (SMS Service)

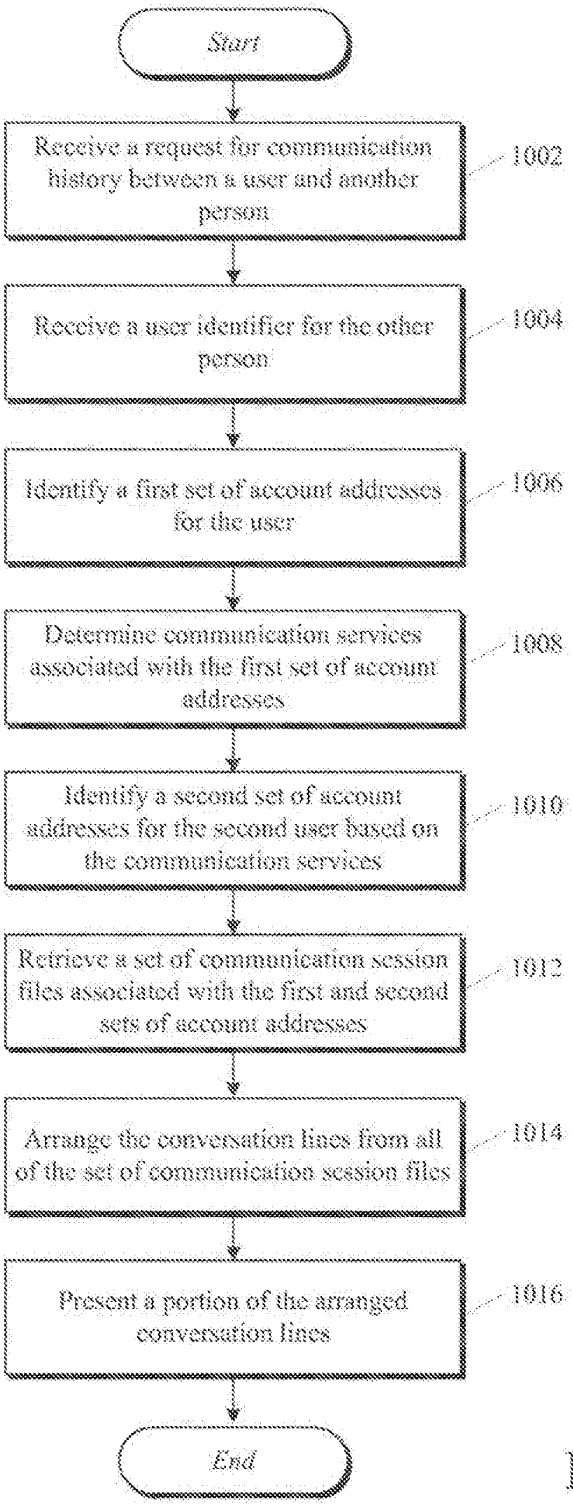

1000
Start
Receive a request for communication history between a user and another person
1002
Receive a user identifier for the other person
1004
Identify a first set of account addresses for the user
1006
Determine communication services associated with the first set of account addresses
1008
Identify a second set of account addresses for the second user based on the communication services
1010
Retrieve a set of communication session files associated with the first and second sets of account addresses
1012
Arrange the conversation lines from all of the set of communication session files
1014
Present a portion of the arranged conversation lines
1016
End

FIG. 10

FIG. 11A

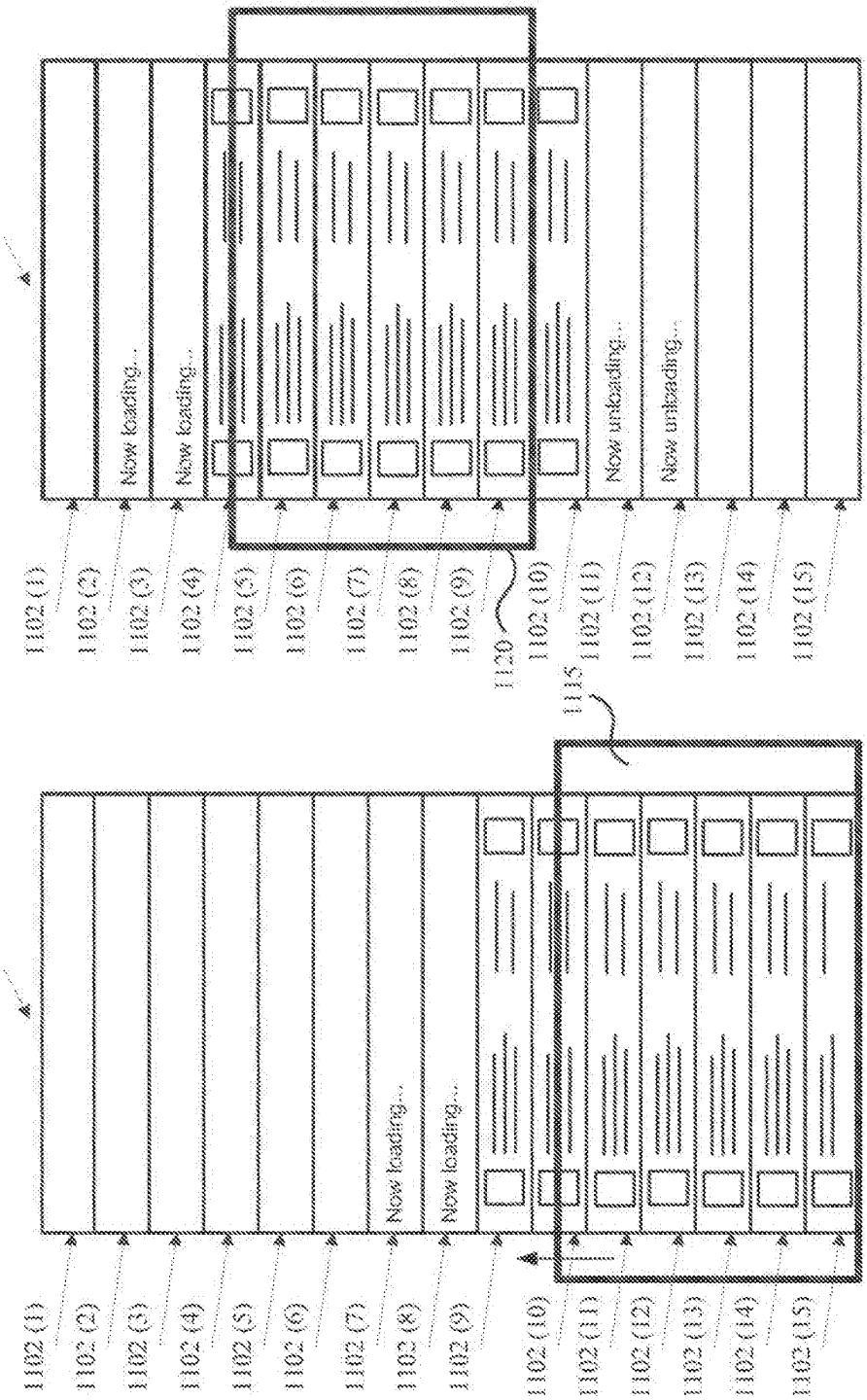


FIG. 11B

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CLDF5064WO	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 2014/072149	International filing date *(day/month/year)* 23 December 2014 (23.12.2014)	(Earliest) Priority Date *(day/month/year)* 23 December 2013 (23.12.2013)
Applicant CTEXT TECHNOLOGY LLC		

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

This international search report consists of a total of 2 sheets.

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

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**

a. the figure of the drawings to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 2014/072149

A. CLASSIFICATION OF SUBJECT MATTER

H04L 29/02 *(2006.01)*
G06F 3/147 *(2006.01)*
H04N 21/4786 *(2011.01)*

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)

H04L 29/00, 29/02-29/08, 12/00, 12/02, 12/24, 12/28, 12/40, G06F 3/00, 3/01, 3/03, 3/041, 3/14, 3/147, 9/00, 9/06, 15/00, 15/16, H04N 21/00, 21/40, 21/47-21/488

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)

PatSearch (RUPTO internal), USPTO, PAJ, K-PION, Esp@cenet, Information Retrieval System of FIPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013/113093 A1 (GLOBAL RELAY COMMUNICATIONS INC.) 08.08.2013, paragraphs [0001], [0024], [0031], [0033], [0037], [0101], [0105]-[0107], [0110], [0112]-[0114], [0137]-[0139], fig. 7, 8, 9	1, 3-6, 10, 11, 13, 16, 18
Y		2, 7-9, 12, 14, 15, 17, 19, 20
Y	WO 2011/005641 A2 (T-MOBILE USA, INC.) 13.01.2011, paragraph [0058]	2, 17
Y	WO 2013/116848 A2 (APPLE INC.) 08.08.2013, abstract, paragraphs [0095], [0100]	7-9, 12, 14, 19, 20
Y	US 2010/0115426 A1 (YAHOO! INC.) 06.05.2010, paragraphs [0021], [0069]	15

☐ 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 document but published on or after the international filing date

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 May 2015 (11.05.2015)	21 May 2015 (21.05.2015)

Name and mailing address of the ISA/RU:	Authorized officer
Federal Institute of Industrial Property, Berezhkovskaya nab., 30-1, Moscow, G-59, GSP-3, Russia, 125993 Facsimile No: (8-495) 531-63-18, (8-499) 243-33-37	T. Kiseleva Telephone No. (499) 240-25-91

Form PCT/ISA/210 (second sheet) (January 2015)

APPLE EXHIBIT 1002

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To:
WOLIN, Harris A.
100 Headquarters Plaza
Morristown, New Jersey 07960
United States of America

Date of mailing *(day/month/year)*	
21 May 2015 (21.05.2015)	
Applicant's or agent's file reference	**FOR FURTHER ACTION**
CLDF5064WO	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 2014/072149	23 December 2014 (23.12.2014)	23 December 2013 (23.12.2013)

International Patent Classification (IPC) or both national classification and IPC
H04L 29/02 *(2006.01)*
G06F 3/147 *(2006.01)*
H04N 21/4786 *(2011.01)*

Applicant
CTEXT TECHNOLOGY LLC

1. This opinion contains indications relating to the following items:

- [X] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [X] Box No. V Reasoned statement under Rule 43*bis* 1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/RU:	Date of completion of this opinion	Authorized officer
Federal Institute of Industrial Property, Berezhkovskaya nab., 30-1, Moscow, G-59, GSP-3, Russia, 125993 Facsimile No: (8-495) 531-63-18, (8-499) 243-33-37	11 May 2015 (11.05.2015)	T. Kiseleva Telephone No. (499) 240-25-91

Form PCT/ISA/237 (cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 2014/072149

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
   - [X] the international application in the language in which it was filed.
   - [ ] a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. [ ] This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
   - a. [ ] forming part of the international application as filed:
     - [ ] in the form of an Annex C/ST.25 text file.
     - [ ] on paper or in the form of an image file.
   - b. [ ] furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
   - c. [ ] furnished subsequent to the international filing date for the purposes of international search only:
     - [ ] in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
     - [ ] on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. [ ] In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2, 7-9, 12, 14, 15, 17, 19, 20	YES
	Claims	1, 3-6, 10, 11, 13, 16, 18	NO
Inventive step (IS)	Claims		YES
	Claims	2, 7-9, 12, 14, 15, 17, 19, 20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims		NO

2. Citations and explanations:

D1 – WO 2013/113093 A1
D2 – WO 2011/005641 A2
D3 – WO 2013/116848 A2
D4 – US 2010/0115426 A1

Claim 1: D1 discloses a computer based method for correlating conversations in a messaging environment (D1, paragraphs [0001], [0031]).

The known method comprising: providing a discussion interface at a first interface device, wherein the discussion interface displays a first message and a second message (D1, paragraphs [00101], [00112], [00113], Fig. 7, 9); receiving, at the first interface device, a first indication that the first message is part of an active conversation (D1 paragraphs [00112], [00113], Fig. 9); providing a message entry location for inputting new messages, the message entry location associated with the discussion interface, receiving a first new message at the message entry location; and displaying the first new message within the discussion interface at the first interface device (D1, paragraphs [00112], [00114], Fig. 9), wherein the displaying of the first new message incorporates a first visual cue shared by messages associated with the active conversation (D1, paragraph [00107]).

D1 discloses all features of the computer based method for correlating conversations in a messaging environment under claim 1.

Consequently, the invention under independent claim 1 does not meet the novelty criterion.

Claim 16: D1 discloses a system for correlating conversations (D1, paragraphs [0001], [0031]). The known system comprising an interface device in communication with a computerized network (D1 paragraph [00110]), the interface device comprising: a processor for implementing a software application on the interface device, a memory for storing the software application and for storing a plurality of messages in accordance with the software application, a transmission unit for transmitting messages to the computerized network, a display (D1 paragraphs [0024], [0033], [00110], [00137], [00138]), wherein the software application comprises instructions (D1 paragraph [00139]) for:providing a discussion interface at the display of the user interface device for displaying messages stored in the memory (D1, paragraphs [0033], [0037]); recording an indication that one of several conversations, each comprising one or more of the messages stored in memory, is an active conversation (D1, paragraphs [0037], [00105]); providing a message entry location for entering new messages, the message entry location associated with the discussion interface (D1,

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of V:

paragraphs [00112], [00114], Fig. 9); receiving at least one new message entered at the message entry location (D1, paragraphs [00105], [00106], [00112], [00114], Fig. 8, 9); transmitting, using the transmission unit, the at least one new message to the computerized network incorporating an indication of which of the several conversations was the active conversation at the time of entry of the new messages (D1, paragraphs [0024], [00105], [00112], Fig. 9); and displaying, at the display, the at least one new message alongside the several conversations and incorporating visual cues shared with any messages that are part of the conversation that was the active conversation upon entry of the at least one new message (D1, paragraphs [00105], [00107], [00112]-[00114], Fig. 8, 9).

D1 discloses all features of the system for correlating conversations under claim 16.

Consequently, the invention under independent claim 16 does not meet the novelty criterion.

Claim 2: the method where the first indication is generated by a tapping input at a touch sensitive display of the first interface device is known from D2 (paragraph [0058]).

Claim 3: the method wherein the visual cue is a first color assigned to the first conversation, and wherein the second message is displayed in a second color is known from D1 (paragraph [00107]).

Claim 4: the method further comprising: displaying the first new message in the discussion interface without incorporating the first visual cue prior to receiving the first indication, and displaying the first new message in the discussion interface with the first visual cue incorporated after receiving the first indication is known from D1 (paragraph [00107]).

Claim 5: the method wherein wherein the first message is part of a first conversation and the second message is part of a second conversation, the method further comprising: defining, upon receiving the first indication, the first conversation as the active conversation, and defining the first new message as part of the first conversation, wherein the first visual cue is incorporated into any previously displayed messages that are part of the first conversation is known from D1 (paragraphs [0024], [00105]-[00107], Fig.8).

Claim 6: the method further comprising: receiving, at the first interface device, after displaying the first new message, a second indication that the second message is part of an active conversation; defining, upon receiving the second indication, the active conversation as the second conversation exclusively; receiving a second new message at the message entry location; and displaying the second new message in the discussion interface at the first interface device; wherein the displaying of the second new message incorporates a second visual cue shared by messages associated with the second conversation is known from D1 (paragraphs [00112]-[00115], Fig. 9).

Claim 7: the method wherein the first and second new messages are displayed in the discussion interface in the chronological order in which they were received is known from D3 (abstract).

Claim 8: the method further comprising changing a visual element of the message entry location upon receipt of the first indication to match the first visual cue, and upon receipt of the second indication, changing the visual element of the message entry location match the second visual cue, such that the visual element of the message entry location matches the defined active conversation is known from D1 (paragraphs [0024], [00105]-[00107], [00112]-[00115], Fig. 8, 9).

Claims 9, 14, 19: the method and the system wherein the visual element is a background color are known from D3 (paragraph [0095]).

Claim 10: the method further comprising: providing the discussion interface at a second interface device, wherein the discussion interface includes the first message and a second message; receiving, at the second interface device, the first indication; displaying the first new message at the second interface device, wherein the displaying of the first new message incorporates a third visual

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of V:

cue shared solely by messages associated with the active conversation of the first indication is known from D1 (paragraphs [0024], [00105]-[00107], Fig. 8).

Claim 11: the method wherein the first indication is generated at the first interface device and is received at the second interface device from one of a server or the first interface device is known from D1 (paragraph [0024]).

Claim 12: the method wherein the first visual cue and the third visual cue differ and are based on user preferences at each of the first user interface device and the second user interface device is known from D3 (paragraphs [0095], [0100]).

Claim 13: the method further comprising changing a visual element of the message entry location upon receipt of the first indication to match the first visual cue is known from D1 (paragraph [00107]).

Claim 15: the method wherein the first visual cue is in the form of proximity such that the first new message is displayed at a location within the discussion interface in closer proximity to the first message relative to proximity of the second message to the first message is known from D4 (paragraphs [0021], [0069]).

Claim 17: the system wherein the display is a touch screen, and wherein the indication recorded that one of the several conversations is the active conversation is a tapping input at the display is known from D2 (paragraph [0058]).

Claim 18: the system wherein the software application further comprising instructions for modifying a visual element of the message entry location based on which of the conversations is the active conversation is known from D1 (paragraphs [00107], [00113]).

Claim 20: the system wherein the memory further stores user preferences, and wherein the visual cues are defined in the user preferences is known from D3 (paragraphs [0095], [0100]).

The inventions under dependent claims 3-6, 10, 11, 13, 18 do not meet the novelty criterion.

The inventions under dependent claims 2, 7-9, 12, 14, 15, 17, 19, 20 do not meet the inventive step criterion.

The inventions under all claims meet the industrial applicability criterion.

Electronic Patent Application Fee Transmittal	
Application Number:	
Filing Date:	
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Filer:	Harris Wolin/robert hugel
Attorney Docket Number:	CLDF 5064A
Filed as Small Entity	
Filing Fees for Utility under 35 USC 111(a)	

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**730**

Electronic Acknowledgement Receipt	
EFS ID:	24391516
Application Number:	14972919
International Application Number:	
Confirmation Number:	7438
Title of Invention:	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Adam Moisa
Customer Number:	61650
Filer:	Harris Wolin/robert hugel
Filer Authorized By:	Harris Wolin
Attorney Docket Number:	CLDF 5064A
Receipt Date:	17-DEC-2015
Filing Date:	
Time Stamp:	15:43:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$730
RAM confirmation Number	2036
Deposit Account	503894
Authorized User	WOLIN, HARRIS A.
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	cldf_5064a_20151217_ads.pdf	1823373 5cafd70c1792a84fb8ef67b7204ec8054dcdeb1b	no	8
Warnings:					
Information:					
2	Drawings-only black and white line drawings	cldf_5064a_20151217_dwg.pdf	284945 96970d664b8459439a34a447e4c07d115a0efbcf	no	20
Warnings:					
Information:					
3		cldf_5064a_20151217_spec.pdf	149713 7bd84e0d66fd389c66372168bf343ed82d6d8f3f	yes	28

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	23
Claims	24	27
Abstract	28	28

Warnings:					
Information:					
4	Oath or Declaration filed	cldf_5064a_20151217_dec_assign.pdf	91499 1c06fded2ca359e7a7fe6217842a2951b7687bad	no	2
Warnings:					
Information:					
5	Power of Attorney	cldf_5064a_20151217_poa.pdf	52129 a29695bccd6d1d51f4aed6a309a345562f165eeb	no	2
Warnings:					
Information:					
6	Assignee showing of ownership per 37 CFR 3.73	cldf_5064a_20151217_stmt_373c.pdf	117141 1fc15968b9e1b7b2c6257406673c4ea9ce3e2f06	no	3

Warnings:					
Information:					
7	Transmittal of New Application	cldf_5064a_20151217_trans.pdf	275829 d377606e798f7fdccda5894445b9a607669f8238	no	2
Warnings:					
Information:					
8	Information Disclosure Statement (IDS) Form (SB08)	cldf_5064a_20151217_ids.pdf	1036275 b670d8b081398000ce1b6986cafb9de37124ee28	no	6
Warnings:					
Information:					
9	Foreign Reference	cldf_5064a_20151217_ids_fr1.pdf	10764438 9e48b89902e55eae105acd292c8304be4cfbd158	no	70
Warnings:					
Information:					
10	Foreign Reference	cldf_5064a_20151217_ids_fr2.pdf	5100730 b55435e9c12ac179dcdea10b3309213672b87699	no	42
Warnings:					
Information:					
11	Foreign Reference	cldf_5064a_20151217_ids_fr3.pdf	9354056 d6f3cc6eb48e09759cf8dbd14d437b966d081b6e	no	58
Warnings:					
Information:					
12	Non Patent Literature	cldf_5064a_20151217_ids_npl1.pdf	2289529 dd17fc5821283280cdc4f87f6e0d1ea1da64b09a	no	7
Warnings:					
Information:					
13	Fee Worksheet (SB06)	fee-info.pdf	35007 ffd1506cc3f0802f344e5d06a38b77fbad787043	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	31374664		

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.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

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.
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.

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 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Adam		Moisa	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	New York	State/Province	NY	Country of Residence	US

Mailing Address of Inventor:

Address 1	c/o CTEXT TECHNOLOGY LLC
Address 2	228 Park Avenue S., No. 90348

City	New York	State/Province	NY
Postal Code	10003	**Country** i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

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	61650		
Email Address	patent@myerswolin.com	Add Email	Remove Email

Application Information:

Title of the Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT		
Attorney Docket Number	CLDF 5064A	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	20	**Suggested Figure for Publication (if any)**	

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

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	61650		

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	14581178	2014-12-23

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14581178	Claims benefit of provisional	61920177	2013-12-23
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14581178	Claims benefit of provisional	62000220	2014-05-19
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14581178	Claims benefit of provisional	62061308	2014-10-08
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.			Add

Foreign Priority Information:

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)[i] 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).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.			Add

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	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

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.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

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 Remove

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.

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:

If the Applicant is an Organization check here. ☒

Organization Name	CTEXT TECHNOLOGY LLC		
Mailing Address Information For Applicant:			
Address 1	228 Park Avenue S.		
Address 2	No. 90348		
City	New York	**State/Province**	NY
Country	US	Postal Code	10003
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

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.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

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	/Harris A. Wolin/			Date (YYYY-MM-DD)	2015-12-17
First Name	Harris	Last Name	Wolin	Registration Number	39432

Additional Signature may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CLDF 5064A
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN MESSAGING ENVIRONMENT	

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

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 the Freedom of Information Act requires disclosure of these records.

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 CooperationTreaty.

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 inspections 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.

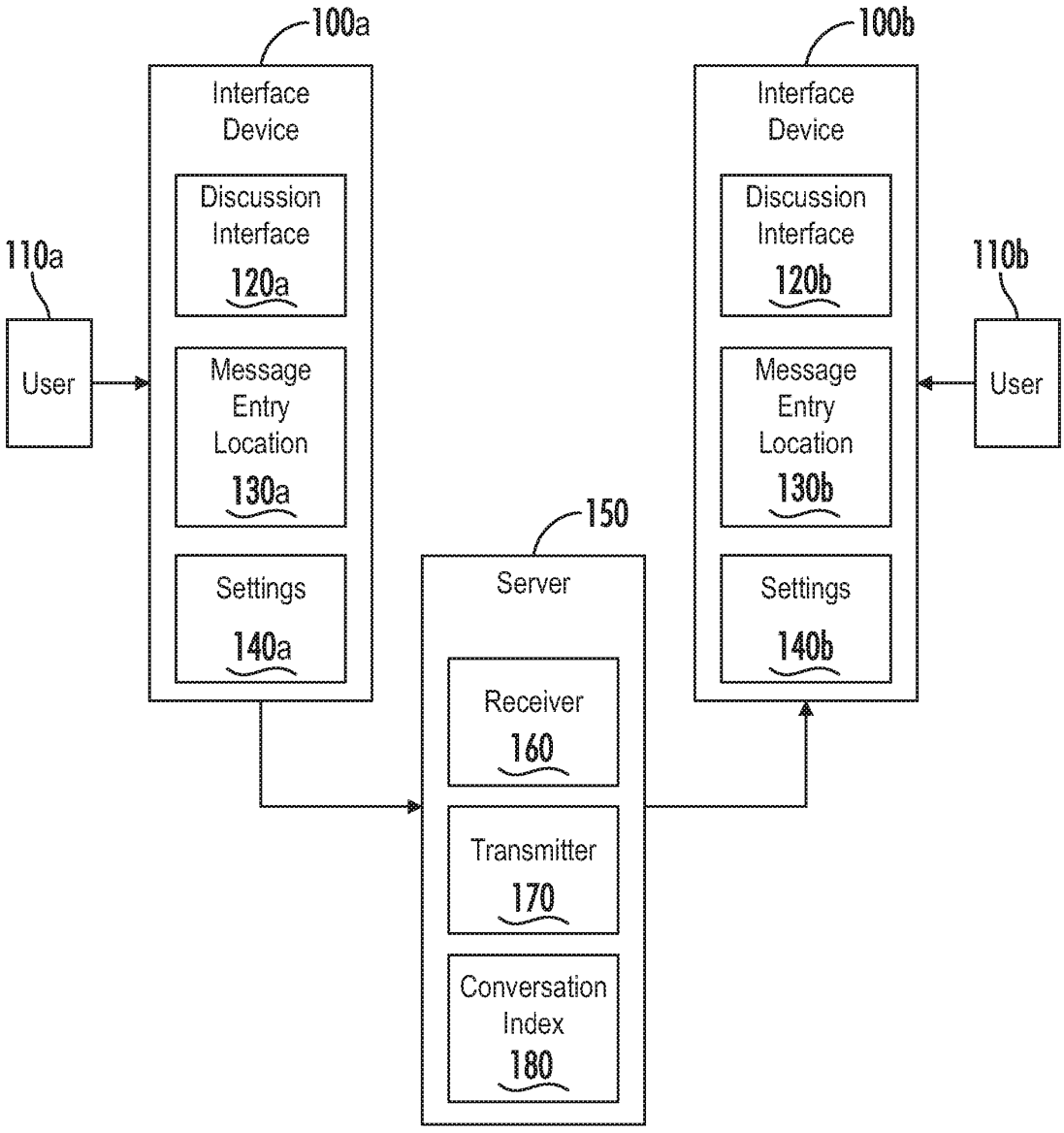

100a
Interface Device
Discussion Interface
120a
Message Entry Location
130a
Settings
140a
110a
User
100b
Interface Device
Discussion Interface
120b
Message Entry Location
130b
Settings
140b
110b
User
150
Server
Receiver
160
Transmitter
170
Conversation Index
180

FIG. 1

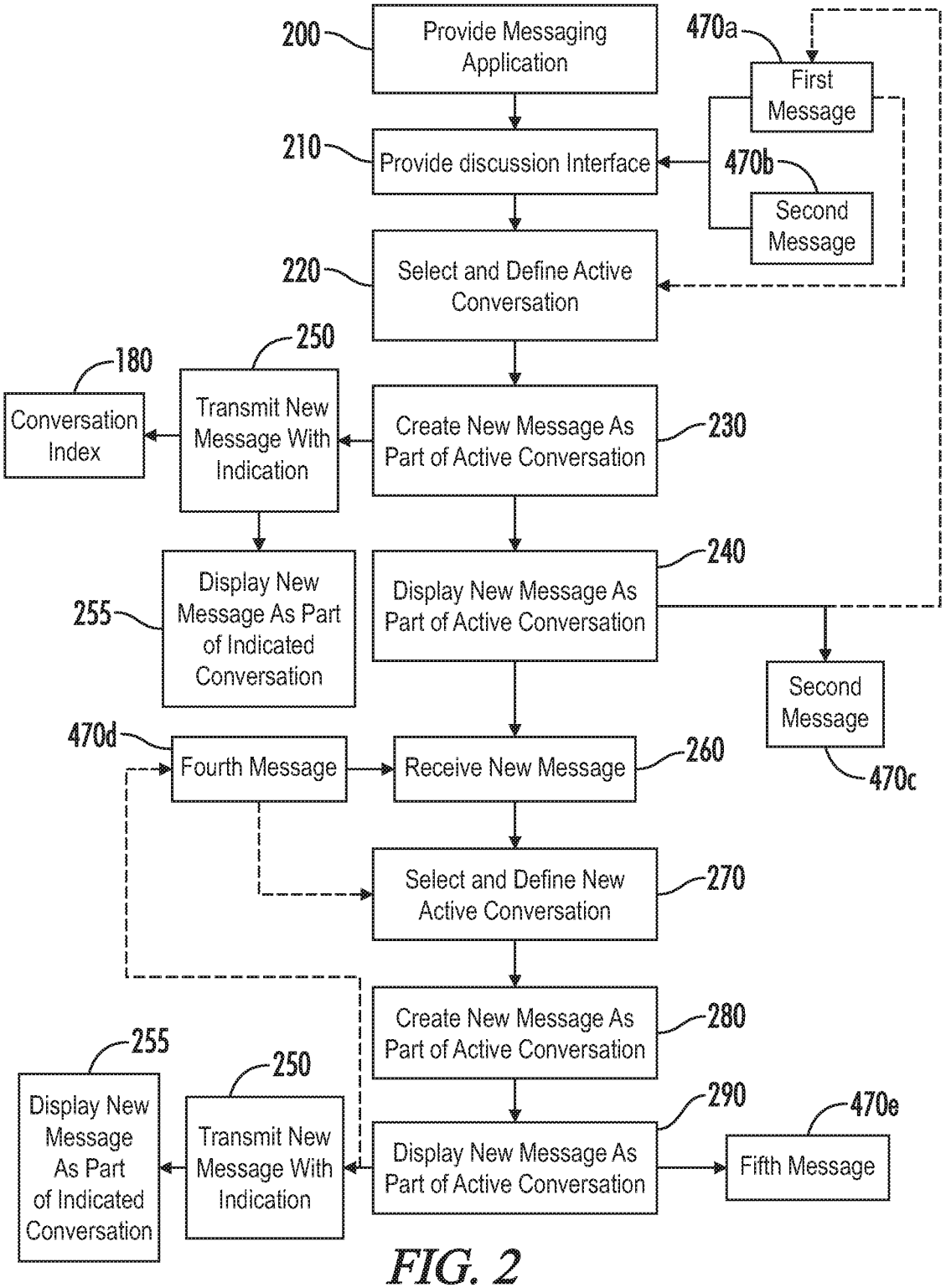

200
Provide Messaging Application
210
Provide discussion Interface
220
Select and Define Active Conversation
230
Create New Message As Part of Active Conversation
240
Display New Message As Part of Active Conversation
250
Transmit New Message With Indication
180
Conversation Index
255
Display New Message As Part of Indicated Conversation
470a
First Message
470b
Second Message
470c
Second Message
470d
Fourth Message
260
Receive New Message
270
Select and Define New Active Conversation
280
Create New Message As Part of Active Conversation
290
Display New Message As Part of Active Conversation
470e
Fifth Message
250
Transmit New Message With Indication
255
Display New Message As Part of Indicated Conversation

FIG. 2

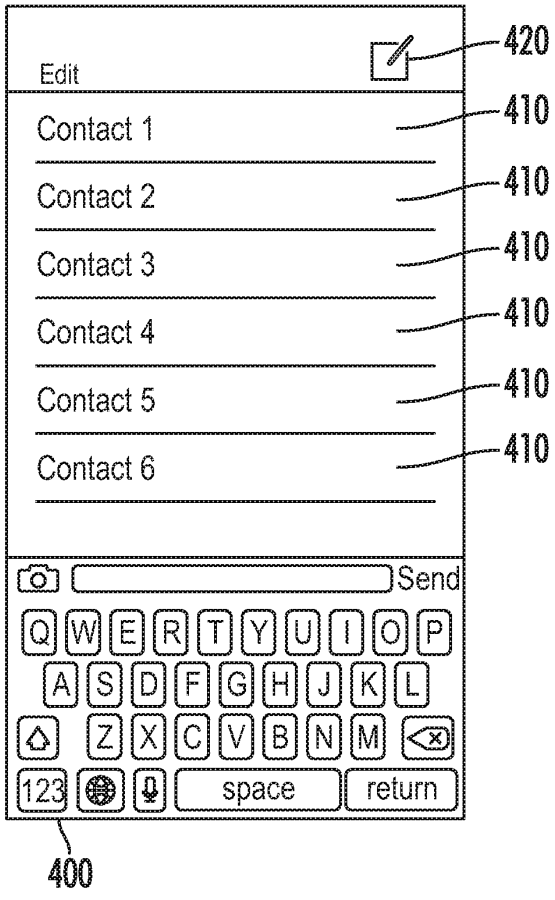

Edit
420
Contact 1
410
Contact 2
410
Contact 3
410
Contact 4
410
Contact 5
410
Contact 6
410
Send
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return
400

FIG. 3A

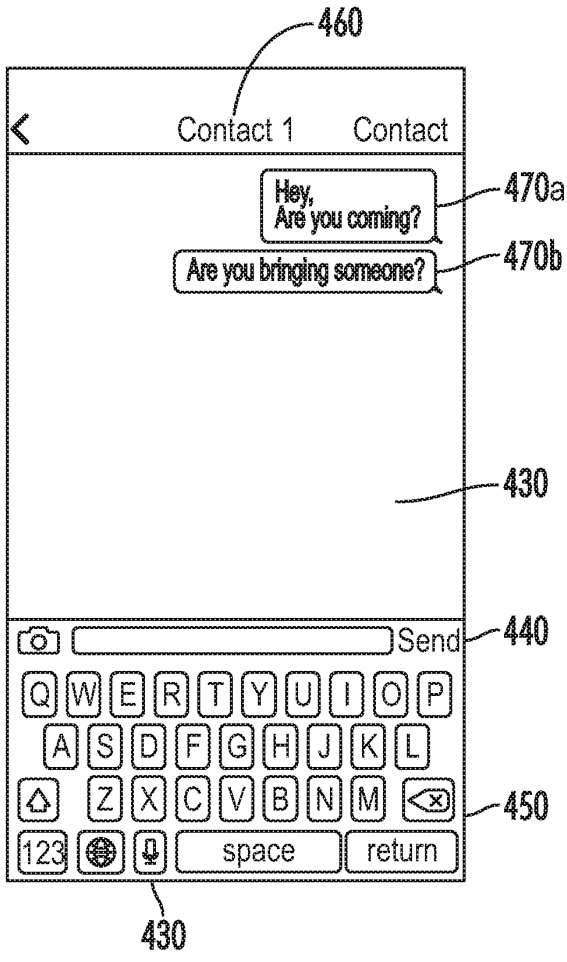

460
Contact 1
Contact
Hey,
Are you coming?
470a
Are you bringing someone?
470b
430
Send
440
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return
450
430

FIG. 3B

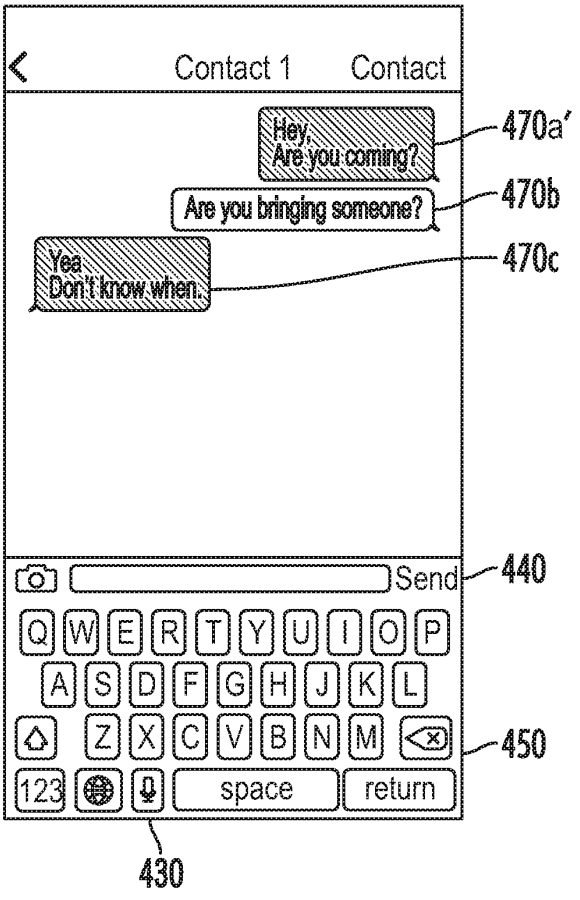

Contact 1
Contact
Hey,
Are you coming?
470a'
Are you bringing someone?
470b
Yea
Don't know when.
470c
Send
440
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
450
123
space
return
430

FIG. 3C

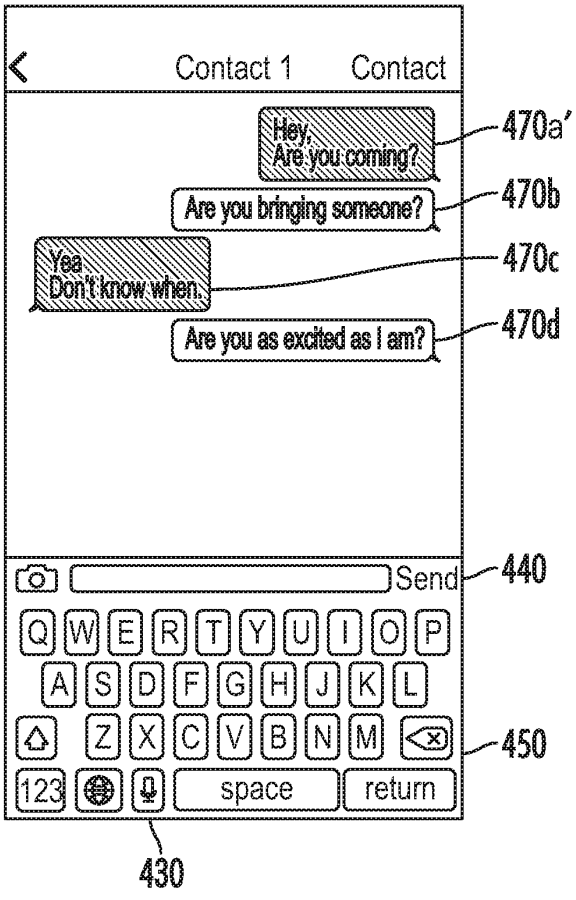

Contact 1
Contact
Hey,
Are you coming?
470a'
Are you bringing someone?
470b
Yea
Don't know when.
470c
Are you as excited as I am?
470d
Send
440
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
450
123
space
return
430

FIG. 3D

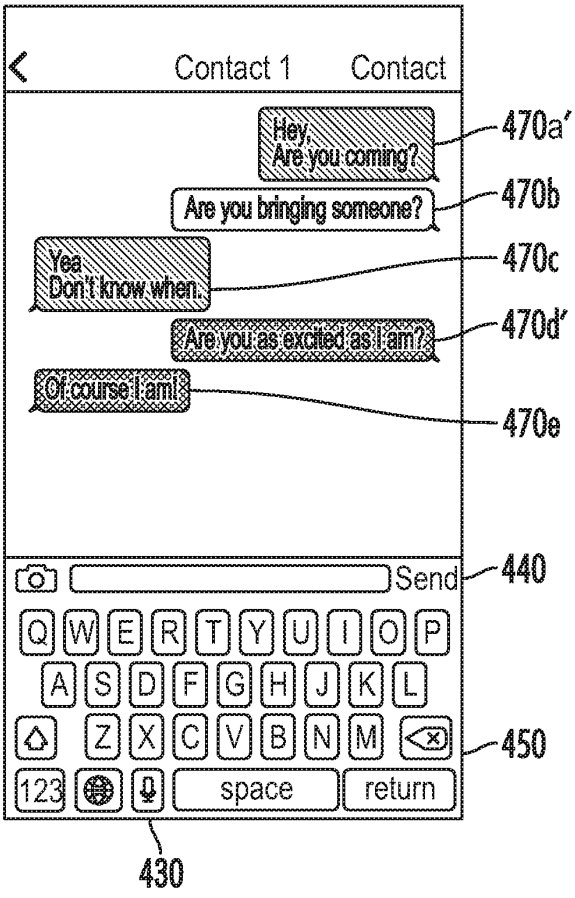

Contact 1
Contact
Hey,
Are you coming?
Are you bringing someone?
Yea
Don't know when.
Are you as excited as I am?
Of course I am!
Send
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return
470a'
470b
470c
470d'
470e
440
450
430

FIG. 3E

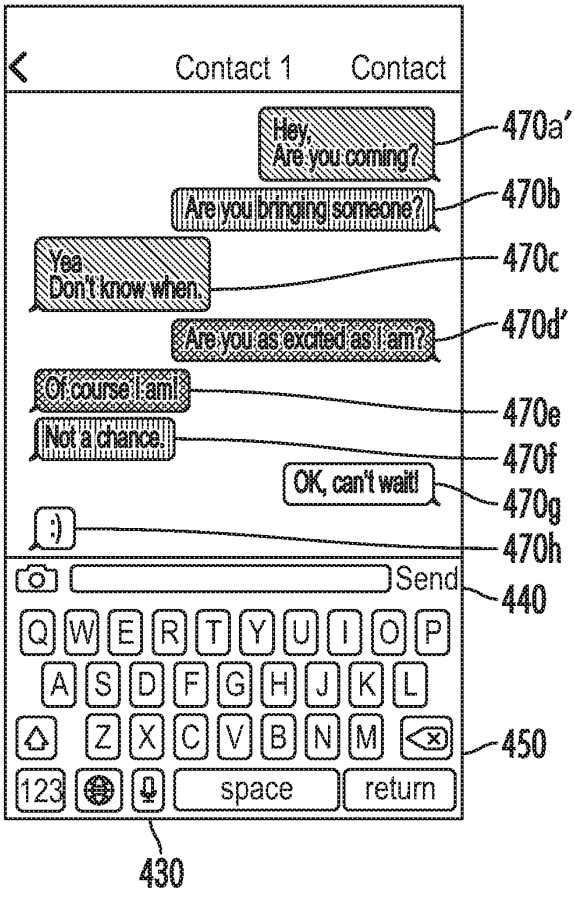

Contact 1
Contact
Hey,
Are you coming?
Are you bringing someone?
Yea
Don't know when.
Are you as excited as I am?
Of course I am!
Not a chance.
OK, can't wait!
:)
Send
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return
470a'
470b
470c
470d'
470e
470f
470g
470h
440
450
430

FIG. 3F

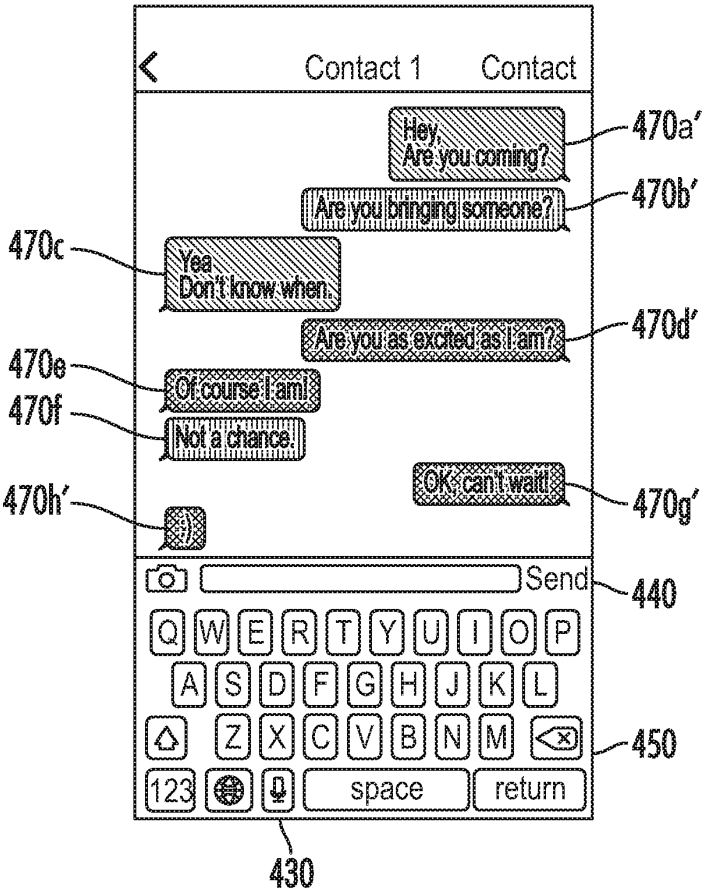

Contact 1
Contact
Hey,
Are you coming?
470a′
Are you bringing someone?
470b′
470c
Yea
Don't know when.
Are you as excited as I am?
470d′
470e
Of course I am!
470f
Not a chance.
OK, can't wait!
470g′
470h′
Send
440
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
450
123
space
return
430

FIG. 3G

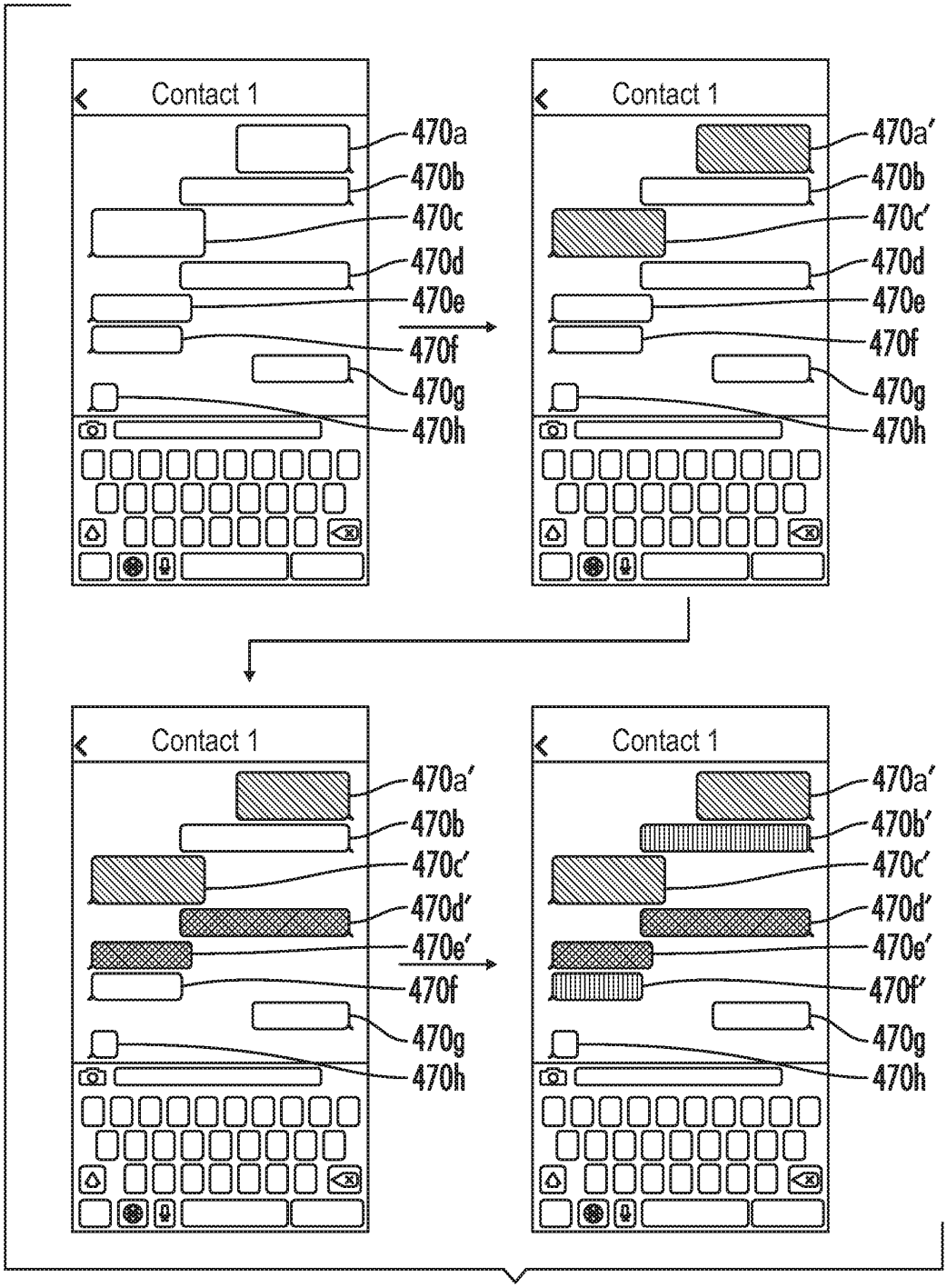

Contact 1
470a
470b
470c
470d
470e
470f
470g
470h
Contact 1
470a′
470b
470c′
470d
470e
470f
470g
470h
Contact 1
470a′
470b
470c′
470d′
470e′
470f
470g
470h
Contact 1
470a′
470b′
470c′
470d′
470e′
470f′
470g
470h

FIG. 4

8/20

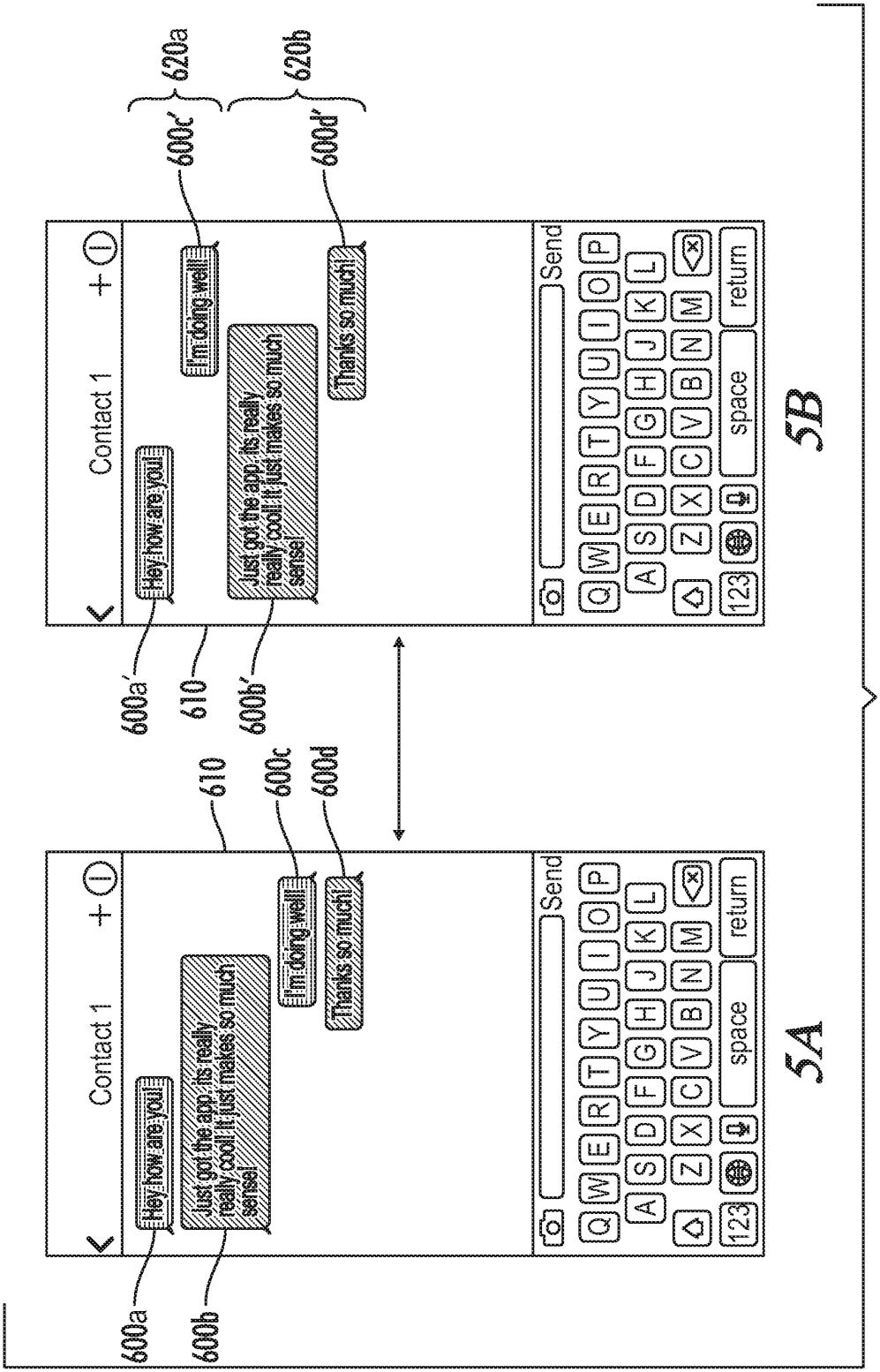

620a
620b
600c'
600d'
Contact 1
Hey, how are you!
I'm doing well!
Just got the app, its really really cool! It just makes so much sense!
Thanks so much!
Send
600a'
610
600b'
610
600c
600d
600a
600b
5B
5A

FIG. 5

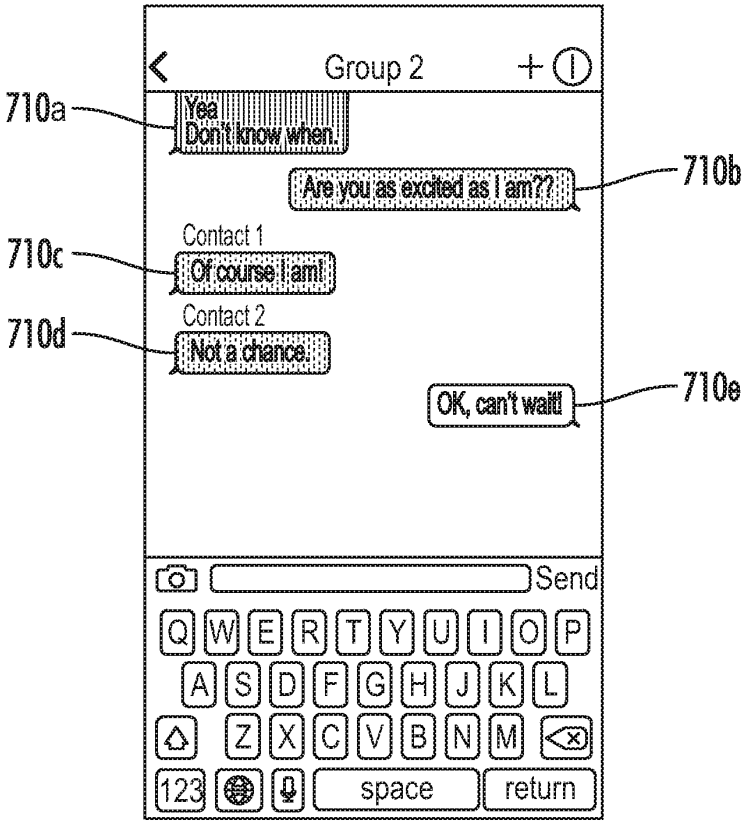

Group 2
710a
Yea
Don't know when.
Are you as excited as I am??
710b
Contact 1
710c
Of course I am!
Contact 2
710d
Not a chance.
OK, can't wait!
710e
Send
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return

FIG. 6

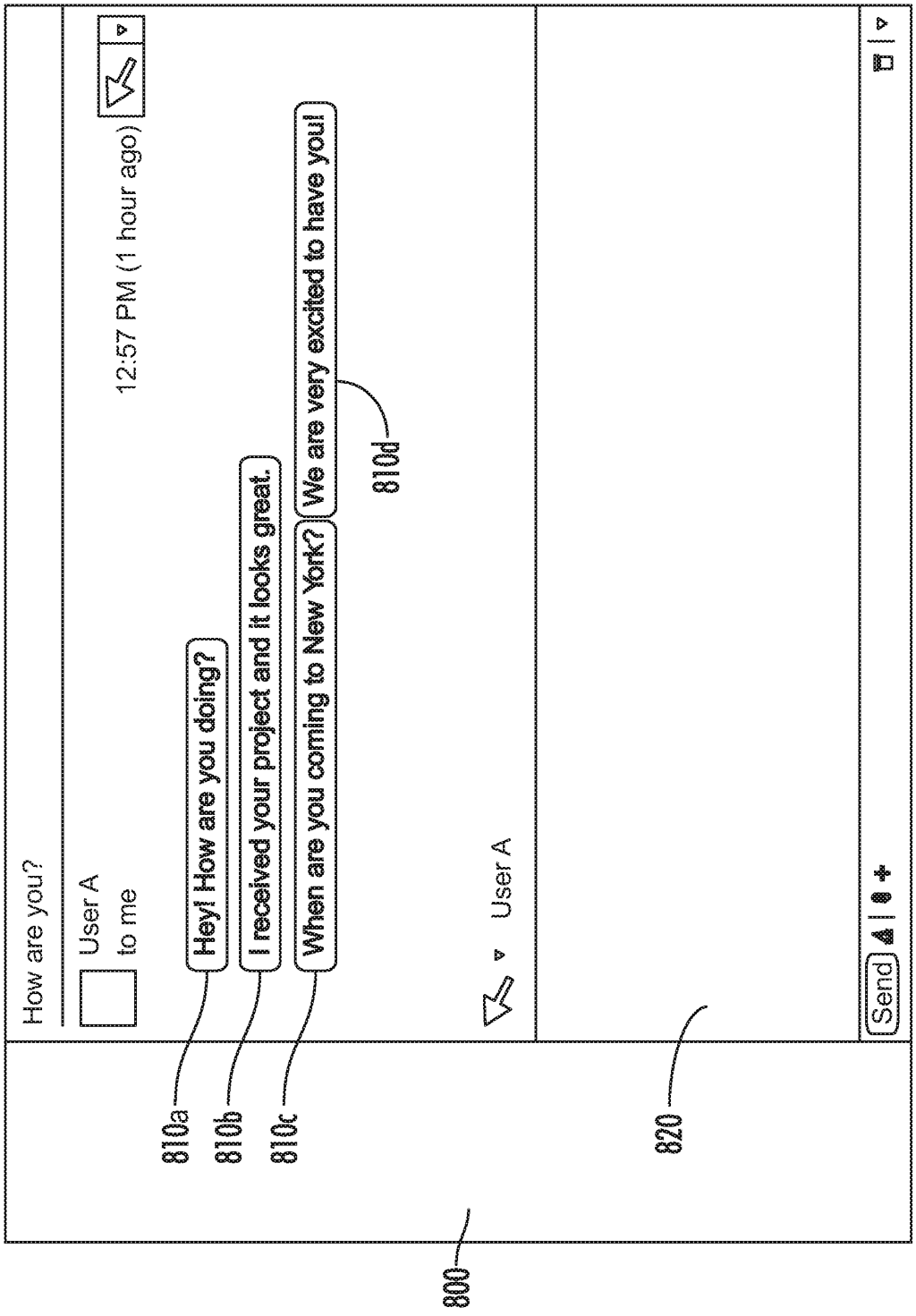

How are you?
User A
to me
12:57 PM (1 hour ago)
Hey! How are you doing?
I received your project and it looks great.
When are you coming to New York?
We are very excited to have you!
User A
Send
810a
810b
810c
810d
820
800

FIG. 7A

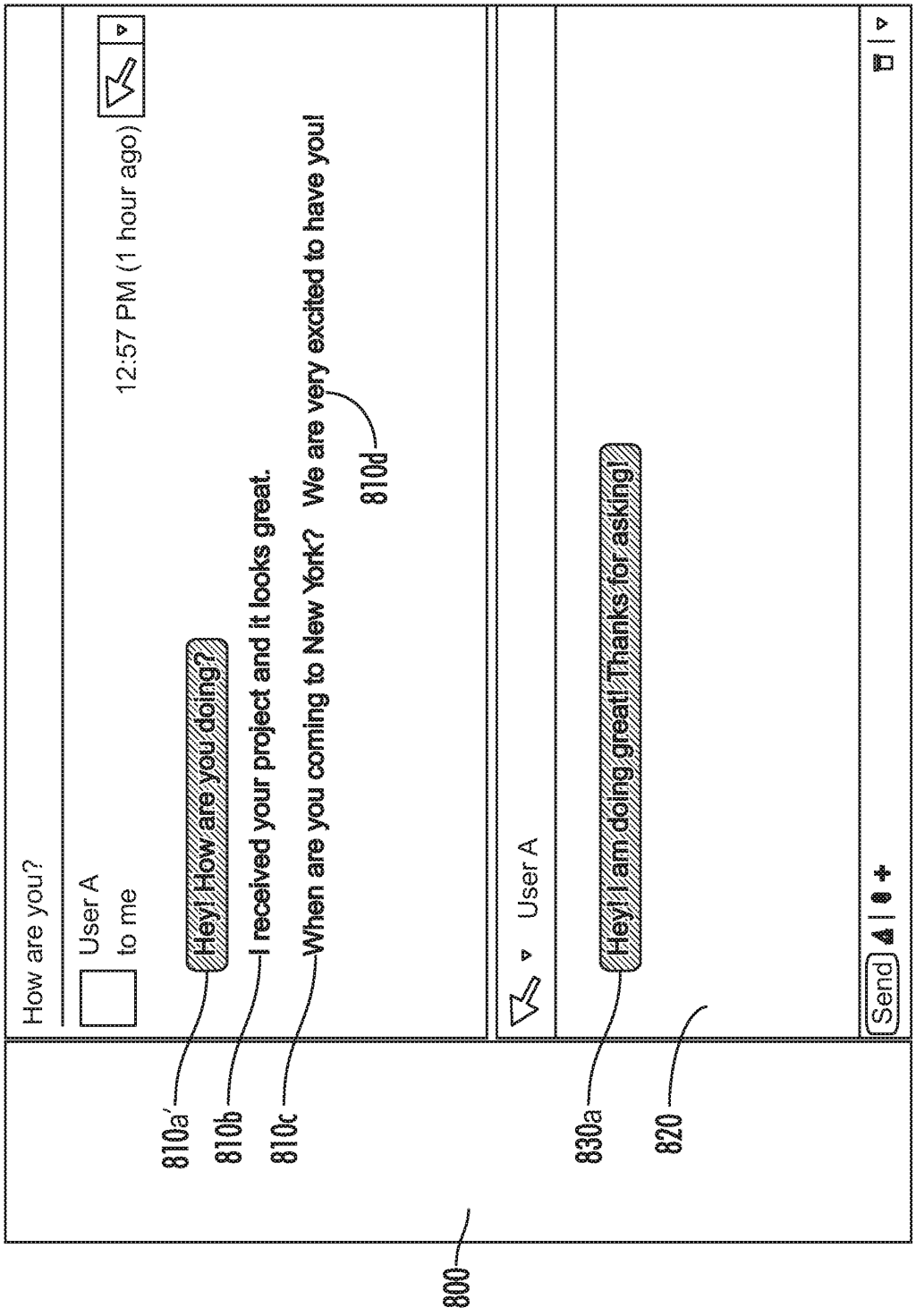

How are you?
User A
to me
12:57 PM (1 hour ago)
Hey! How are you doing?
I received your project and it looks great.
When are you coming to New York?
We are very excited to have you!
User A
Hey! I am doing great! Thanks for asking!
Send
810a'
810b
810c
810d
830a
820
800

FIG. 7B

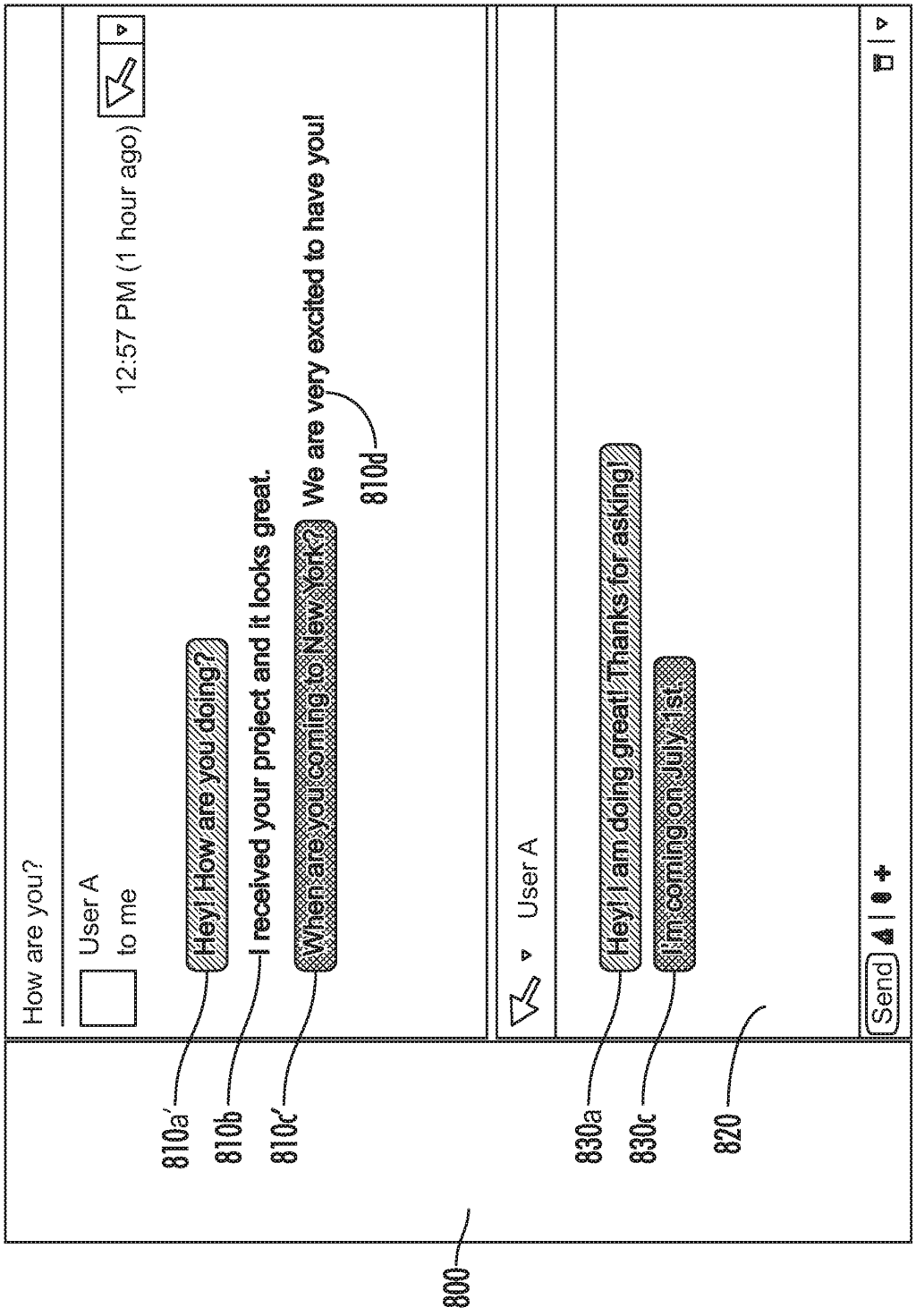

How are you?
User A
to me
12:57 PM (1 hour ago)
Hey! How are you doing?
I received your project and it looks great.
When are you coming to New York?
We are very excited to have you!
User A
Hey! I am doing great! Thanks for asking!
I'm coming on July 1st.
Send
800
810a'
810b
810c'
810d
830a
830c
820

FIG. 7C

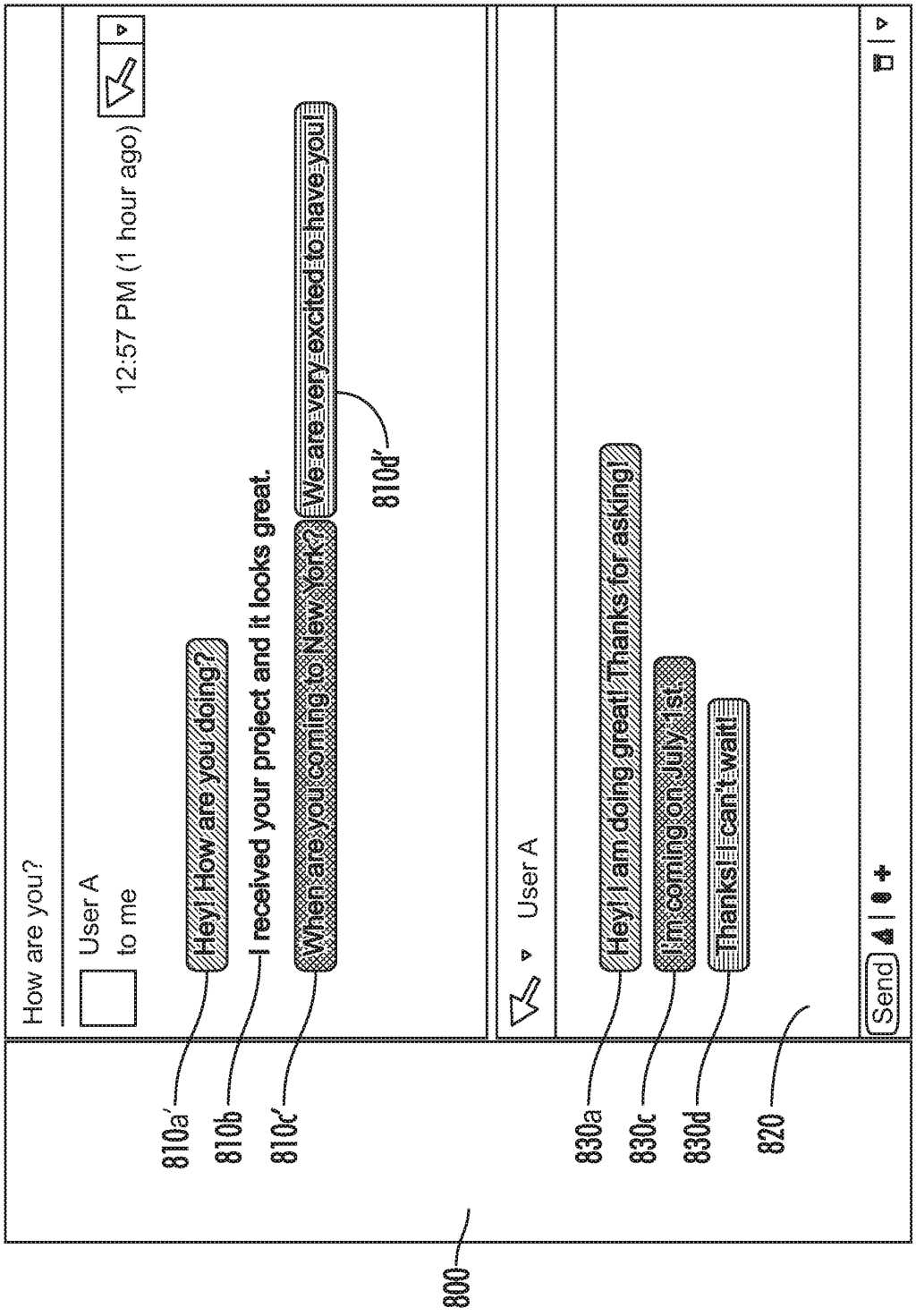

How are you?
User A
to me
12:57 PM (1 hour ago)
Hey! How are you doing?
I received your project and it looks great.
When are you coming to New York?
We are very excited to have you!
User A
Hey! I am doing great! Thanks for asking!
I'm coming on July 1st.
Thanks! I can't wait!
Send
810a'
810b
810c'
810d'
830a
830c
830d
820
800

FIG. 7D

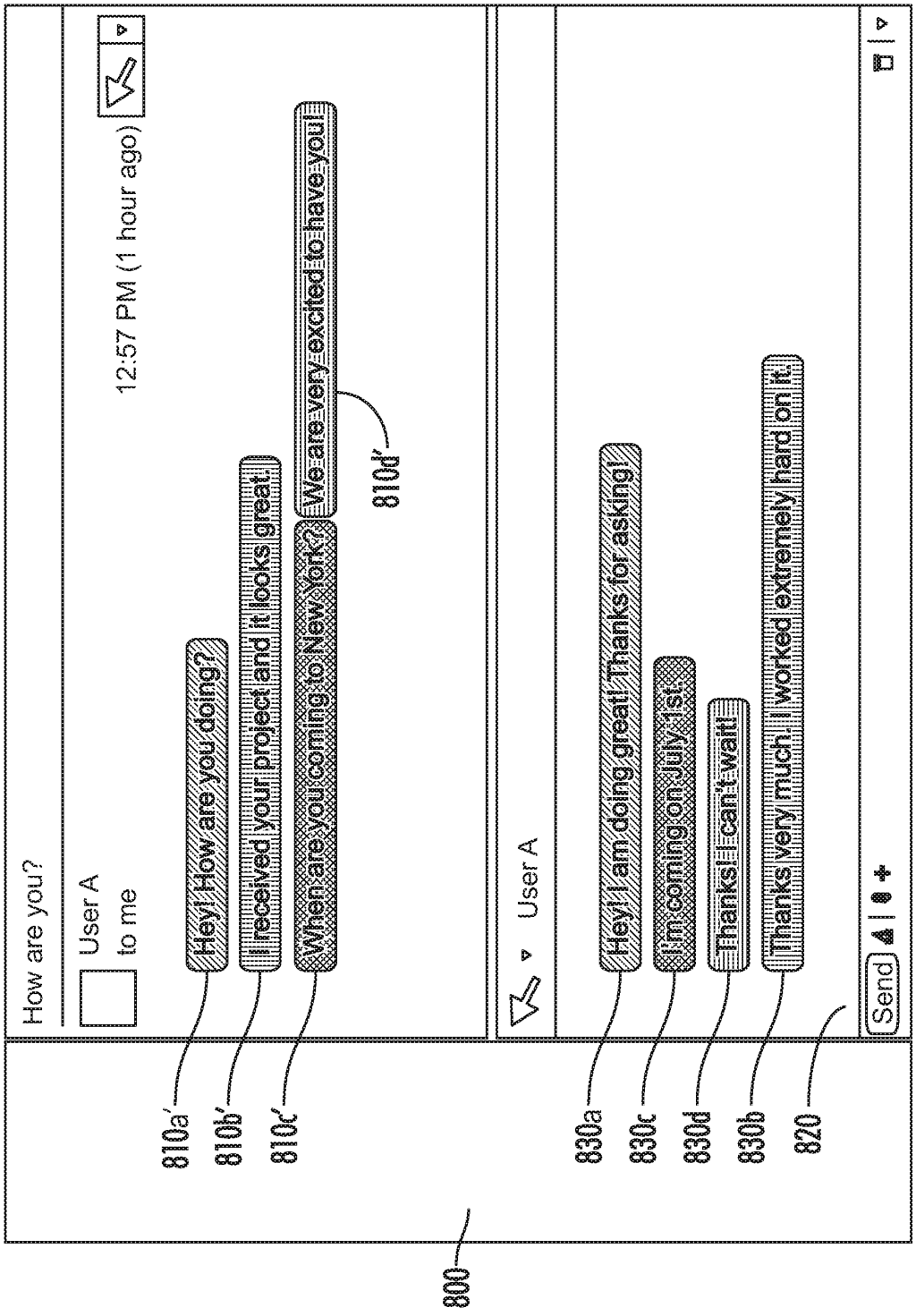

How are you?
User A
to me
12:57 PM (1 hour ago)
Hey! How are you doing?
I received your project and it looks great.
When are you coming to New York?
We are very excited to have you!
User A
Hey! I am doing great! Thanks for asking!
I'm coming on July 1st.
Thanks! I can't wait!
Thanks very much. I worked extremely hard on it.
Send
810a'
810b'
810c'
810d'
830a
830c
830d
830b
820
800

FIG. 7E

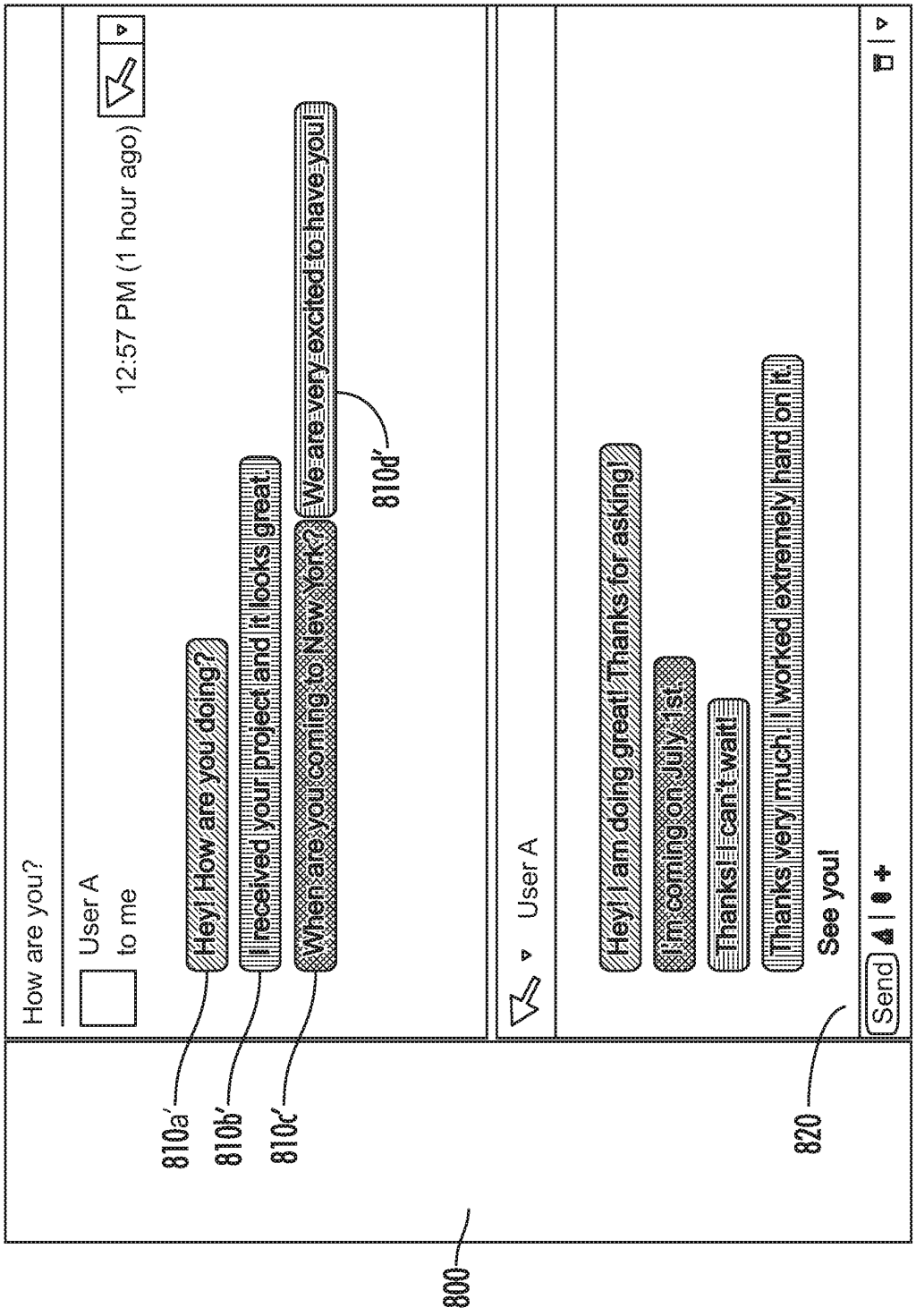

How are you?
User A
to me
12:57 PM (1 hour ago)
Hey! How are you doing?
I received your project and it looks great.
When are you coming to New York?
We are very excited to have you!
User A
Hey! I am doing great! Thanks for asking!
I'm coming on July 1st.
Thanks! I can't wait!
Thanks very much. I worked extremely hard on it.
See you!
Send
810a'
810b'
810c'
810d'
820
800

FIG. 7F

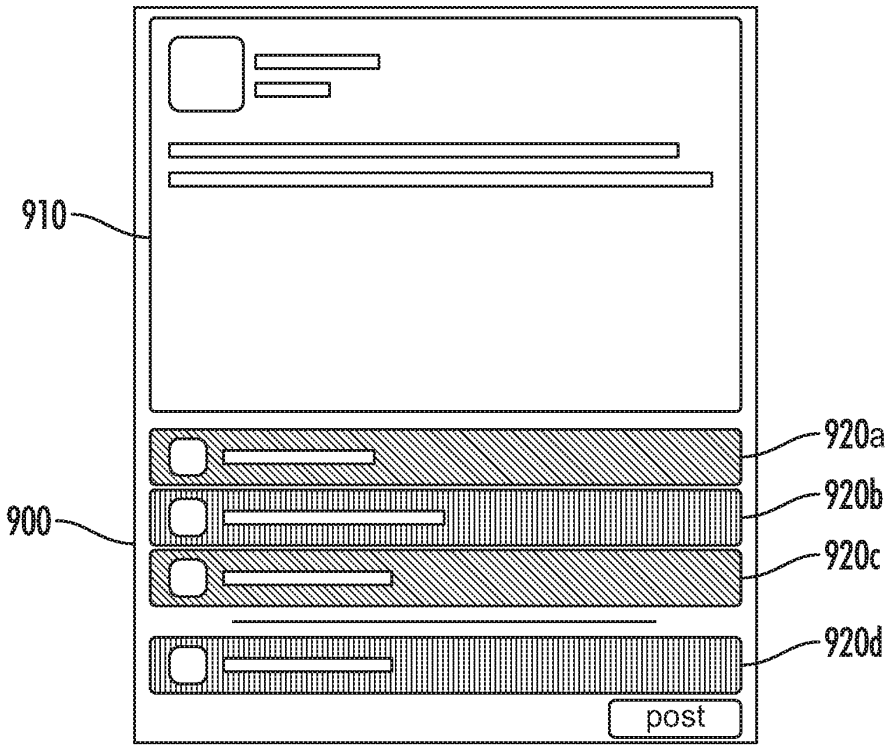


FIG. 8

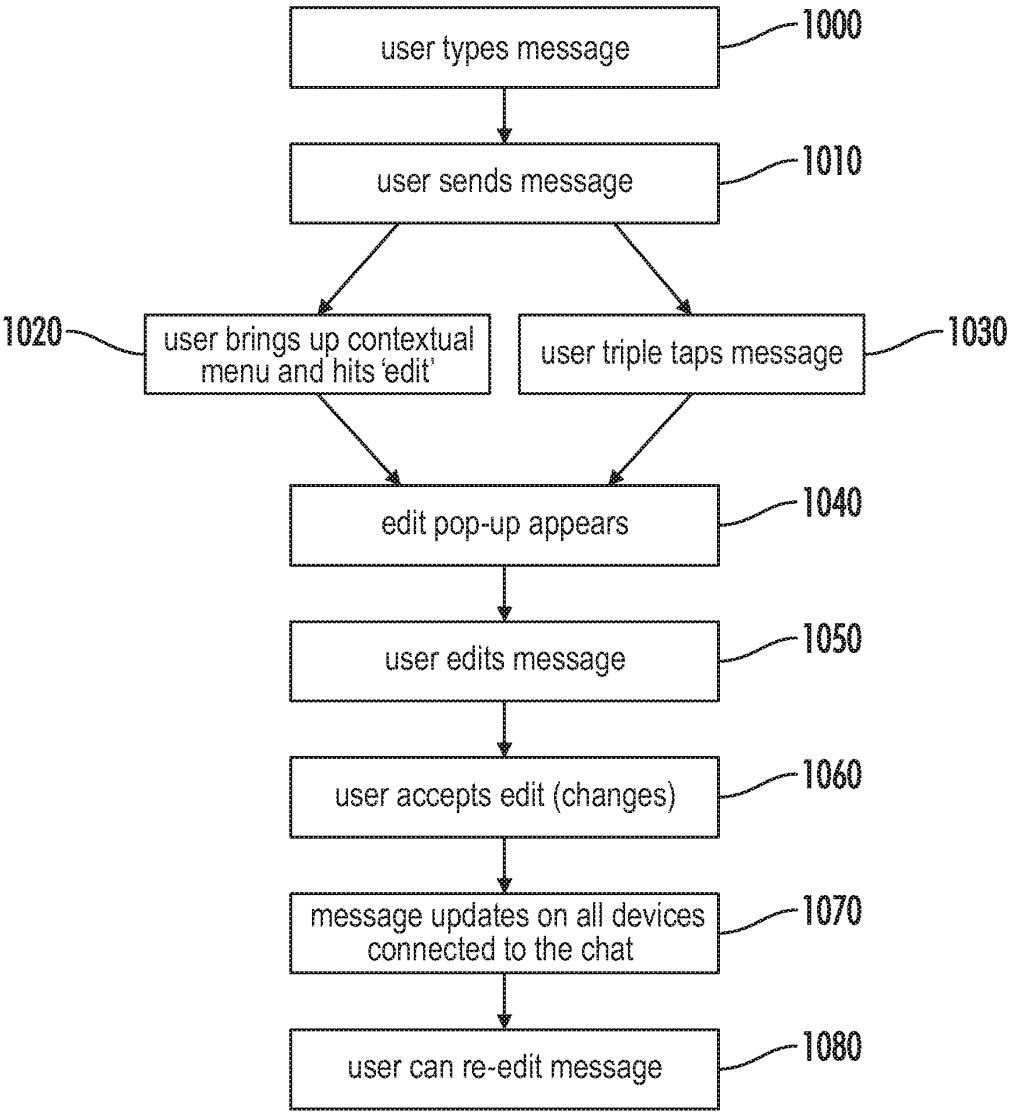

user types message
1000
user sends message
1010
1020
user brings up contextual menu and hits 'edit'
user triple taps message
1030
edit pop-up appears
1040
user edits message
1050
user accepts edit (changes)
1060
message updates on all devices connected to the chat
1070
user can re-edit message
1080

FIG. 9

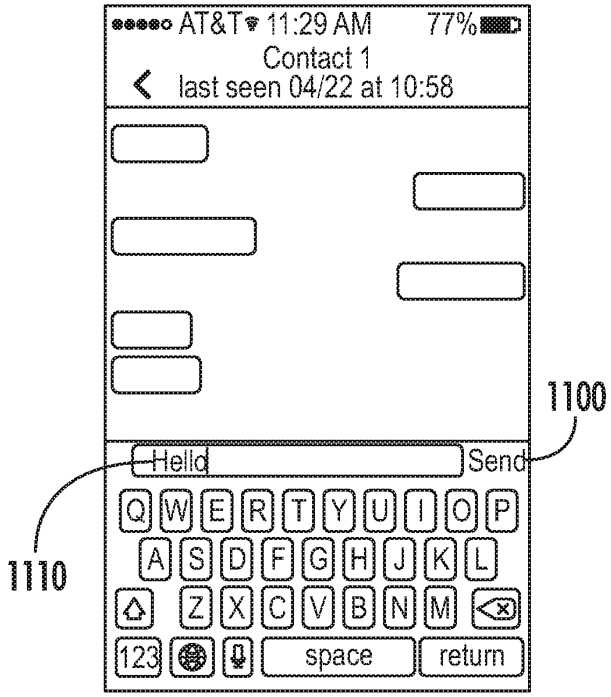


FIG. 10A

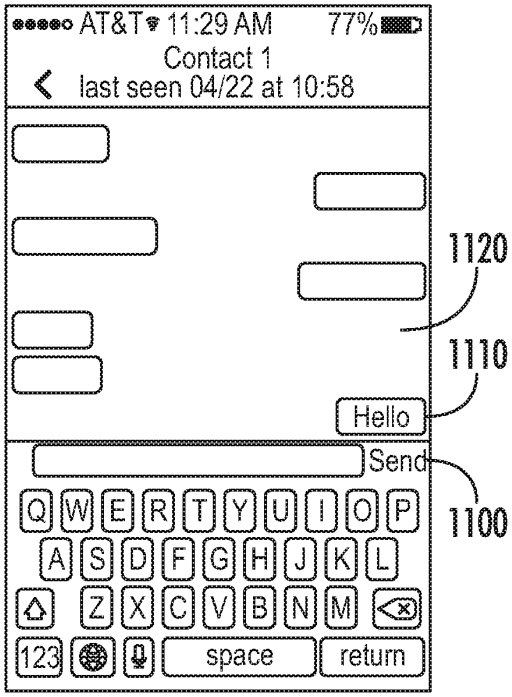


FIG. 10B

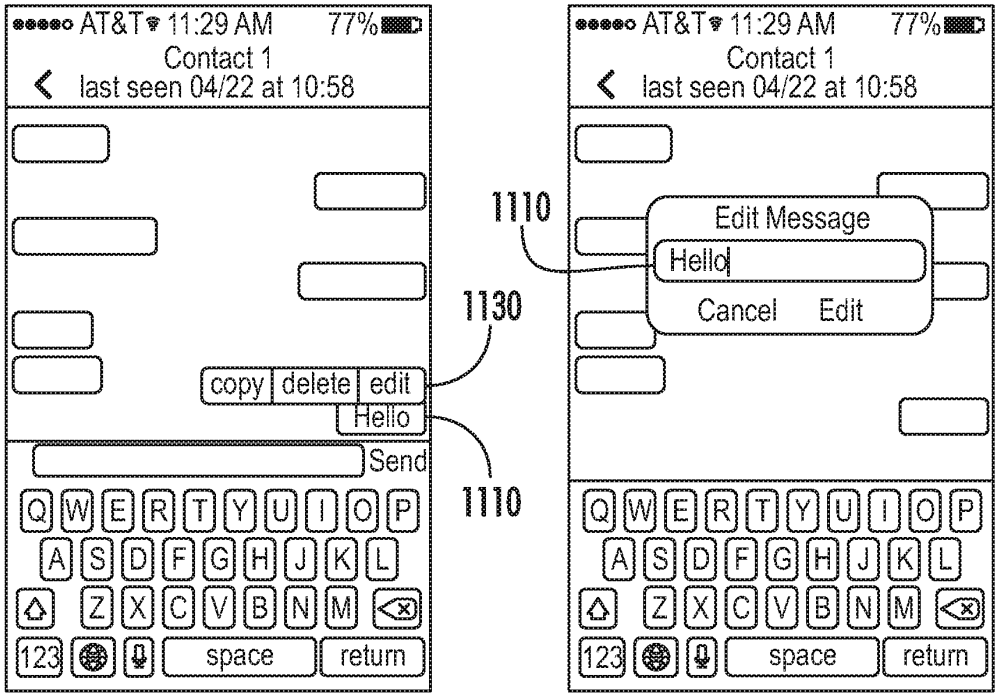


FIG. 10C

FIG. 10D

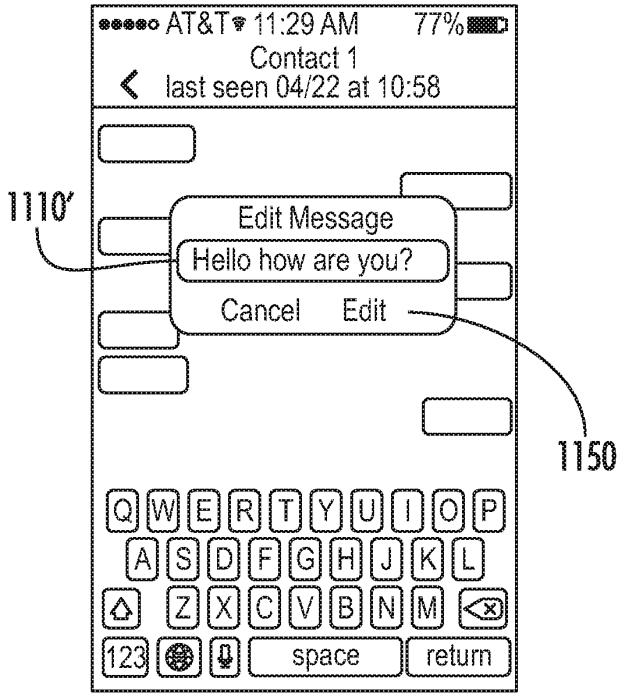


FIG. 10E

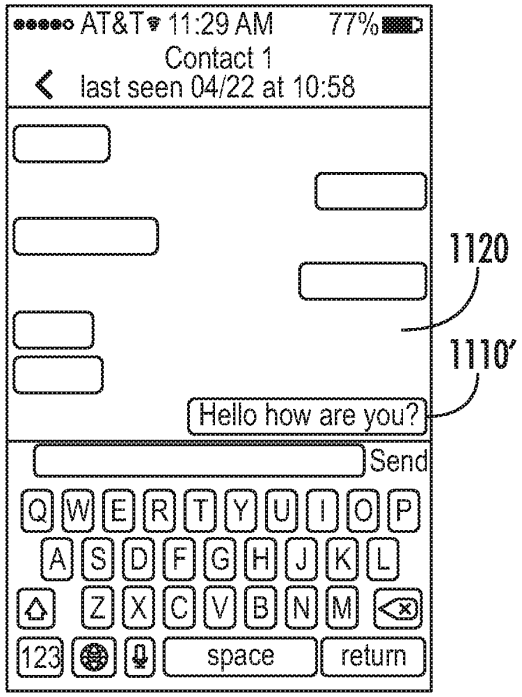


FIG. 10F

METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN A MESSAGING ENVIRONMENT

CROSS REFERENCE TO RELATED APPLICATIONS:

[0001] This application is a continuation of U.S. Patent Application 14/581,178, filed December 23, 2014, which claims the benefit of U.S. Provisional Patent Applications, No. 61/920,177, filed December 23, 2013, No. 62/000,220, filed May 19, 2014, and No. 62/061,308, filed October 8, 2014, the contents of each of which are incorporated by reference herein in their entirety.

FIELD OF THE INVENTION

[0002] The present disclosure relates to methods and systems for correlating conversations in a messaging environment, such as in a chat application for a mobile phone.

BACKGROUND

[0003] Various forms of electronic communications have become ubiquitous in recent years, with internet technologies allowing for new and rapid forms of communications. These forms of communications, such as instant messaging, often rely on a "chat" interface, for transmitting short messages, referred to as "chats," rapidly between users. These chats often form an extended dialogue between multiple parties, stretching across multiple conversation topics and extended periods of time. Accordingly, while a participant in such a dialogue may continue to submit chats responsive to earlier received chats, it is often unclear what earlier question or prompt the participant is answering or responding to.

[0004] Accordingly, a first chat participant may send two questions, and a second chat participant may respond to the second question prior to responding to the first question. This may occur for a variety of reasons. For example, the second chat participant may not wish to respond to all questions, or the questions may have been delivered to him out of order. Alternatively, the response order may have simply made

sense to the second user at the time, or the response order may differ for any number of other reasons.

[0005] Extended chat sessions therefore often comprise different types of messages, such as questions, prompts, offhand comments, and answers, and typically involve multiple conversations continuing in parallel, with messages, or chats, presented to users in chronological order. This simple chronological ordering can lead to confusion, since it may not be clear what the participant is responding to in any particular chat, particularly where the participants switch between topics rapidly.

[0006] For a variety of reasons, in various other communication formats, it is not always clear what earlier comment a particular comment is responsive to. For example, an email may include questions on multiple topics, while a response may respond to those questions out of order. The same issues occur in online commenting systems, and the issues are enhanced when more than two participants are involved in a chat.

[0007] There is a need for a messaging method that allows parties conversing to follow multiple conversations exactly, even where those multiple conversations are intertwined and include questions, prompts, and answers that cross each other chronologically.

SUMMARY

[0008] A computer based method for correlating conversations in a messaging environment is provided, wherein a user is provided with a discussion interface at a first interface device, and messages are displayed at the discussion interface. The messages displayed can include a first and second message. An indication, such as a tapping input, is then received, at the interface device, that a previously displayed message is part of an active conversation. The active conversation may be, for example, one of several previously existing conversations. Alternatively, the message selected may have no previous conversational associations, and may therefore be defined as a new conversation, which is then defined as "active."

[0009] The method then provides a message entry location for inputting new messages, the message entry location associated with the discussion interface. New messages received at the message entry location are associated with the conversation defined as active, and when displayed, the new message is then displayed incorporating a visual cue shared by all messages of the active conversation. The visual cue may be, for example, the color coding of messages.

[0010] The conversational affiliations may be applied after messages are entered as well, such that messages in the discussion interface are first displayed without incorporating a visual cue, and are later modified to incorporate a visual cue.

[0011] The method may then receive an indication that a different message or a second conversation is to be defined as the active conversation, cancelling or replacing the earlier definition of the active conversation, and new messages then received at the message entry location are defined as part of the then current active conversation. Accordingly, the display of such new messages incorporates a second visual cue shared by messages associated with the second conversation, the second visual cue different than the first visual cue. For example, each of the first visual cue and the second visual cue may be a different background color for the messages.

[0012] The visual cues may be applied while the messages remain listed in the chronological order in which they were received, or they may be reorganized to reflect groupings of conversation. In some embodiments, visual elements are applied to the discussion interface or the message entry location to highlight the identity of the active conversation. In such embodiments, the visual cue may be reflected in the visual elements, or the visual elements may be a tint in the same color as the visual cue.

[0013] The visual cue may be a proximity from message to message, such that a new message is displayed at a location within the discussion interface in closer proximity to the first message relative to the proximity of the second message to the first message.

[0014] Typically, the platform described may allow the method to be applied across multiple interface devices. In such embodiments, changes made at the first

interface device, such as identification of active conversations and the affiliation of comments with different conversations, are reflected at a second interface device using visual cues. This may be coordinated by a server having a conversation index, and each user may have different visual cues defined in user settings.

[0015] For implementing the methods described, a system for correlating conversations is provided, the system comprising an interface device in communication with a computerized network. The interface device then comprises a processor for implementing a software application, memory for storing the software application and for storing a plurality of messages in accordance with the software application, a transmission unit for transmitting messages to the computerized network, and a display. The software application comprises instructions for providing a discussion interface at the display of the user interface device for displaying messages stored in the memory, recording an indication that one of several conversations, each comprising one or more of the messages stored in memory, is an active conversation, and providing a message entry location for entering new messages, the message entry location associated with the discussion interface, receiving at least one new message entered at the message entry location, transmitting, using the transmission unit, the at least one new message to the computerized network incorporating an indication of which of the several conversations was the active conversation at the time of entry of the new messages, and displaying, at the display, the at least one new message alongside the several conversations and incorporating visual cues shared with any messages that are part of the conversation that was the active conversation upon entry of the at least one new message.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] Figure 1 shows an exemplary system for implementing the method for correlating conversations.

[0017] Figure 2 is a flowchart of the method for correlating conversations.

[0018] Figures 3A-G illustrates an exemplary user interface for implementing the method of Figure 2.

[0019] Figure 4 illustrates an additional aspect of the user interface of FIG. 3A-G.

[0020] Figures 5A-B illustrate an alternative visual cue for use with the user interface of FIG. 3A-G.

[0021] Figure 6 shows an alternative implementation of the method of FIG. 2 incorporating a group chat interface.

[0022] Figures 7A-F shows the method of FIG. 2 implemented in an email interface.

[0023] Figure 8 shows the method of FIG. 2 implemented in a commenting system.

[0024] Figure 9 is a flowchart illustrating a method for retroactively editing messages.

[0025] Figures 10A-10F show a user interface, such as that of FIGS. 3A-G, implementing the retroactive editing features of FIG. 9.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0026] The description of illustrative embodiments according to principles of the present invention is intended to be read in connection with the accompanying drawings, which are to be considered part of the entire written description. In the description of embodiments of the invention disclosed herein, any reference to direction or orientation is merely intended for convenience of description and is not intended in any way to limit the scope of the present invention. Relative terms such as "lower," "upper," "horizontal," "vertical," "above," "below," "up," "down," "top" and "bottom" as well as derivative thereof (e.g., "horizontally," "downwardly," "upwardly," etc.) should be construed to refer to the orientation as then described or as shown in the drawing under discussion. These relative terms are for convenience of description only and do not require that the apparatus be constructed or operated in a particular orientation unless explicitly indicated as such. Terms such as "attached," "affixed," "connected," "coupled," "interconnected," and similar refer to a relationship wherein structures are secured or attached to one another either directly or indirectly through intervening structures, as well as both

movable or rigid attachments or relationships, unless expressly described otherwise. Moreover, the features and benefits of the invention are illustrated by reference to the exemplified embodiments. Accordingly, the invention expressly should not be limited to such exemplary embodiments illustrating some possible non-limiting combination of features that may exist alone or in other combinations of features; the scope of the invention being defined by the claims appended hereto.

[0027] This disclosure describes the best mode or modes of practicing the invention as presently contemplated. This description is not intended to be understood in a limiting sense, but provides an example of the invention presented solely for illustrative purposes by reference to the accompanying drawings to advise one of ordinary skill in the art of the advantages and construction of the invention. In the various views of the drawings, like reference characters designate like or similar parts.

[0028] Described below are various methods and systems for correlating conversations in a messaging environment, such as in situations where multiple conversations, or conversation threads, are occurring within a single chat window or other messaging environment. The method and system are described with reference to a computer system utilizing user interface devices, such as those shown in Figure 1. Typically, the method is performed on and between a first interface device 100a, used by a first user 110a, and a second interface device 100b, used by a second user 110b. Each user 110 uses their respective user interface device to create and transmit messages as part of various conversations. A first user may then select a conversation from a discussion interface and create a message to transmit to the second user 110b as part of the conversation selected. To effectuate such a message transmission, as described in more detail below, each interface device 100 is then provided with a discussion interface 120a, b, a message entry location 130a, b associated with the discussion interface, and several settings 140a, b associated with the discussion interface and the message entry location. The interface devices may be, for example, portable computing devices, such as smart phones, tablets, laptops, or other types of computer terminals. The interface

devices typically interface with a computerized network, such as a server 150 as described below, and they may contain any hardware necessary to do so, such as transmitter and receiver components.

[0029] The interface devices 100a, b typically connect to each other through a server 150. The server then maintains a receiver 160 and a transmitter 170, and a conversation index 180. When the first user 110a, for example, selects a conversation to and transmits a message to the second user 110b, the first interface device 100a transmits the message to the server 150, which receives the message at the receiver 160, determines if the message is part of a conversation in the conversation index 180 and sends it, via the transmitter 170 to the second interface device 110b. In the discussion below, to be considered alongside the flowcharts and the figures, when the first interface device 110a transmits a message to a second interface device 110b, or vice versa, such transmission may be by way of server 150. In such a scenario, it will be understood that the server will utilize the receiver 160, transmitter 170, and conversation index 180 as necessary.

[0030] Figure 2 is a flowchart illustrating an implementation of the method of correlating conversations and figures 3A – G show an exemplary user interface implementing the method of correlating conversations.

[0031] Initially, the first user 110a is provided with a messaging application (200) having a user interface 400. The user interface may provide a list of contacts 410 with whom the user has active chat sessions. The user interface 400 may then provide an option to create a new chat session 420, or a user 110 may instead choose to continue a previously active chat session with one of the contacts listed 410, as shown in FIG. 3A.

[0032] Upon selecting an active chat session 410, as in FIG. 3B, the user is provided (210) with a discussion interface 430. The discussion interface 430 has a message entry location 440 associated therewith, and may further incorporate a virtual keyboard 450 or other data input tools. The name of a party 460, such as the second user 110b with whom the first user 110a is chatting, may be identified within, or in association with, the discussion interface 430.

[0033] Upon providing the discussion interface 430 at (210) for an active chat session, several messages 470a, b may be displayed therein. This method connects messages in terms of "conversations," and thereby ultimately assigns messages to such conversations. Accordingly, messages interacted with may be previously assigned to such conversations, and in such a scenario the first message 470a may be part of a first conversation, and the second message 470b may be part of a second conversation. Alternatively, the messages 470 may be initially unassigned to conversations. In the embodiment shown, the messages 470 may therefore be provided with default visual cues designating the messages as unassigned to conversations, in contrast with visual cues correlating conversations as discussed below.

[0034] The first user 110a may wish to continue a conversation from, or provide a message responsive to, one of the several messages 470. Accordingly the first user 110a may indicate, or call out to the system, which one of the messages 470 he would like to respond to by, for example, tapping a touch screen of the first interface device 100a at a location of the first message 470a. Other selection methods, such as highlighting, are contemplated as well. This indication defines that message, or a conversation that the message is a part of, as an active conversation (220), and indicates that a following new message will be part of that active conversation. The first message 470a is used merely as an example, and any message shown may be tapped to define an active conversation.

[0035] Accordingly, if the first message 470a was previously part of a first conversation, the first conversation is defined as the active conversation. If the message was not previously defined, it would then be assigned to a first conversation and the first conversation would be defined as active.

[0036] As shown in FIG. 3C, future messages transmitted from the first interface device 100a will then be automatically assigned to the active conversation, so long as the active conversation is defined. When the user 110a creates a new message (230) at the message entry location 440, the message 470c is therefore incorporated into the conversation that has been defined as active. When the new message is then displayed

(240), it is displayed with a visual cue shared with other messages associated with the active conversation, in this case the first message 470a. Typically, the visual cue may be a color associated with the active conversation, but it may instead be by way of text size, symbols or icons appended to the message, indentation levels, font formatting such as italics, bold, or underline, bullet styles, or characters preceding the message. As shown in the figures, the active conversation may be provided with a crosshatching matching other messages 470a of the active conversation.

[0037] The first user 110a may then, using the interface device 100a, transmit the new message to the second user 110b. Accordingly, while the new message is displayed (at 240) at the first user's 110a interface device 100a it may be simultaneously transmitted (250), along with an indication that it is part of the conversation that has been marked as active, to the server 150 where it is logged at the conversation index 180, and transmitted by the transmitter 170 to the second user 110b. The message may then be displayed (255) as part of the then active conversation when displayed on the second user interface device 100b.

[0038] Typically, the second user 110b will receive the conversational affiliations defined by the first user, but will not have the conversation selected by the first user defined as an active conversation on his interface device 100b. Accordingly, when the first user 110a taps a message, defining a conversation, the color may change on the second user's device, but new messages entered at the second interface device 100b will not be automatically associated with that conversation.

[0039] In this way, the platform creates linkages between messages that are part of a conversation. Because the linkages defined in this method may be implemented and recorded independently of the particular visual cue, and because each message is typically transmitted from a first user 110a to a second user 110b using server 150, the conversation records may be maintained at the server 150 in the conversation index 180, and the linkages may be represented in accordance with settings 140 at each individual interface device.

[0040] As shown in FIG. 3D, throughout the process, the first user 110a may receive (260) additional messages 470d from, for example, the second user 110b utilizing a second interface device 100b. These messages may arrive already defined as part of a previously existing conversation, or they may arrive as individual messages with no conversational affiliation. If the additional messages 470d arrive as individual messages, they will be provided with default formatting and visual cues, but if they are already defined as part of a previously existing conversation, they will be provided with visual cues matching other messages that are part of that particular conversation. Information about whether such incoming messages are part of a previously existing conversation may be received, for example, from server 150 and may be stored in the conversation index 180. Alternatively, such indications may be embedded in the messages themselves using a markup tagging system, for example. In this way, the method may be performed without an independent conversation index, and may be entirely implemented as a peer to peer chat platform.

[0041] The first user 110a may then wish to continue a conversation from, or provide a message responsive to, another one of the several messages 470. For example, the user may wish to define the just received message 470d as part of a second conversation. Accordingly the first user 110a may indicate that they would like to respond to the just received message 470d by, for example, tapping a touch screen of the first interface device 100a at the location of the message 470d. As before, this selection defines that message as part of a new active conversation (270), now a second conversation, and indicates that a following new message will be part of that active conversation. When a new, or different conversation is defined as the active conversation in this manner, any previous indication of a different message as part of the active conversation is revoked, such that only one conversation (either the first conversation, comprising the first and third messages 470a, c or the second conversation, comprising the new message 470d, for example) is active at any given time.

[0042] As above, when the user 110a then creates a new message (280) at the message entry location 440, the message 470e is incorporated into the conversation that has been defined as active. When the new message is then displayed (290), it is displayed with a visual cue shared with other messages associated with the active conversation. Accordingly, as shown in FIG. 3E, the two messages of the second conversation 470d', e, defined as active, are provided with matching crosshatching.

[0043] The method can continue in this manner, such that the first user 110a may select an earlier received or displayed message 470b, defining it as a part of an active conversation (now a third conversation) and create a new message 470f to match a visual cue consistent across the third conversation. Similarly, messages initially transmitted, created, or received by a user without an active conversation defined 470g may appear with default visual cues. A user may choose not to define an active conversation, or may cancel out a previous selection of an active conversation, thereby continuing to transmit or receive messages 470h with default formatting. Such messages may later be retroactively applied to conversations resulting in visual cues being applied after the fact, as in 470g', h' as shown in FIG. 3F-G

[0044] Figure 4 shows a discussion interface displaying a conversation substantively identical to that discussed with respect to figures 2-3, but without any conversational affiliations applied. In such a scenario, all messages 570a-h are shown with default formatting. The first user 110a may then retroactively assign all messages to conversations. This may be done by, for example selecting multiple messages simultaneously, thereby linking them together, or by selecting conversations from a dropdown menu associated with each message, thereby assigning the messages to selected conversations. Accordingly, a user may first select the first and third messages in a list 570a, c, and assign them to a first conversation comprising those messages 570a', c', a fourth and fifth message in the list 570d, e, and assign them to a second conversation, and a second and sixth message in the list 570b, f, and assign them to a third conversation.

[0045] As shown, messages may therefore be created or received with conversational affiliations already incorporated, or they may be created without an active conversation defined or received without such an affiliation, and may therefore be created or received with default visual cues applied. Conversational affiliations may then be applied using a prompt, menu, or other scheme implemented in the interface.

[0046] While the methods have been described with respect to a first user 110a, all messages generated at one of the interface devices 100 are typically transmitted to the other. Accordingly, linkages defined by each user appear at the discussion interfaces 120 of both users, with each user's display formatted according to their own settings 140. Therefore, conversational affiliations defined across both user interfaces may be defined by visual cues independently defined based on user settings 140.

[0047] Figures 5A-B show the use of the alignment of messages in a list of messages as a part of a visual cue correlating conversations. Messages 600a-d are displayed in a discussion interface 610 in the order in which they are initially received. They may be received with indications assigning them to first and second conversations, or they may be received without such indications and may be assigned to such conversations after the fact. Once assigned, the messages are then realigned to show them in first and second blocks 620a, b representing the first and second conversations. Accordingly, the first message 600a' may be shown in a first block 620a with the third message 600c and the second message 600b' may be shown in a second block 620b with the fourth message 600d'. The realignment may occur upon receipt of conversation assignments for the messages 600a-d, or it may instead occur after receiving a command to align from a user. Accordingly, a user may first see a new message just received at the bottom of a list, and may input a command to have the messages realigned. In some such scenario, the messages may return to their originally received order after such command expires, such as after a period of time, so that the chronological integrity of the chat window is maintained.

[0048] In each of the scenarios discussed, the first user 110a may assign messages to conversations, and the method may then apply visual cues illustrating the specific conversation to which each message has been assigned. In some embodiments, either the first user 110a or the second user 110b may reassign messages previously assigned. In such a scenario, the new assignment may be transmitted to the server 150 which may in turn record the new assignment at the conversation index 180 and transmit the new assignment to the other user 110 such that the new assignment can be reflected in each respective discussion interface 430.

[0049] Accordingly, if a second user 110b disagrees with the first user's 110a assignment of a message to a conversation, or wishes to select a single previously assigned message to begin a new conversation, he may select that message using an appropriate selection method. For example, a user may double tap a message to bring up a contextual menu, or to perform a specific action. Such selection methods may be defined in user settings 140 specific to each interface device 100.

[0050] Where additional messages are added to the discussion interface, the interface may scroll to accommodate new messages. Accordingly, earlier messages may be forced off of a screen of the interface device 100, and a large number of independent conversations may be defined simultaneously. When visual cues of the users 110 preferred type are exhausted, the cues may recycle. Accordingly, when the platform runs out of colors with which to color code, the platform may select an appropriate color to reuse by monitoring, for example, a visual cue associated with the conversation that has not been used in the longest period of time. Messages that are forced off screen, but that still exist within the discussion interface 430 may be accessed by scrolling upwards, and when viewed, may retain their visual cues identifying the conversation they are associated with.

[0051] In some embodiments, where a user has selected an active conversation but has not entered a message in an extended period of time, the platform removes the active conversation designation, returning the user to a default mode.

[0052] While the method for correlating conversations in a messaging environment is discussed with respect to a two user "chat" application, it may be applied in a wide variety of additional types of messaging environments, such as within an email, in a group chat interface, or in a commenting system on a website. Each of these scenarios will be described, and additional features more easily illustrated with respect to those environments will be described therewith.

[0053] Figure 6 shows the method for correlating conversations applied to a group chat interface 700. Such an interface may be nearly identical to the that discussed above with respect to discussion interface 430, but may allow users to receive messages from both a second user 110b at a second interface device 100a, and a third user at a third interface device (not shown). In such a scenario, users 110 may indicate that a message is part of a specified conversation, and visual cues may then be applied in the same way as discussed above. Accordingly, the group chat environment may show several messages 710a-e with a first message 710a correlated with a first conversation, a second, third, and fourth message 710b-d shown as part of a second conversation, and a fifth message 710e shown as part of a third conversation. Messages from other users are individually marked by, for example, indicating their name in association with the comment.

[0054] Figures 7A-F shows the method for correlating conversations applied to an email interface. As shown the first user 110a may receive an email in a received email window 800 showing received or transmitted messages at the first user interface 100a which has multiple topics, each comprising different subject matter, and the user may wish to respond to each of those topics independently. While the email may initially be shown as a single block of text, or as a series of paragraphs without any distinctive formatting, multiple clauses 810a-d, each of which may be responded to independently.

[0055] As in the discussion interface 430 discussed above, the email application may be provided with a message entry location 820 for inputting an email responsive to a message or messages shown in the received email interface.

[0056] Accordingly, a user 110 may select a first clause 810a to define as part of a first conversation, and may then input, at the message entry location 820, a message responsive to that first clause 830a, as shown in FIG. 7B. The user 110 may then select a different clause, such as the third clause 810c, and draft a response 830c responsive to that clause, as shown in FIG. 7C.

[0057] The user 110 may continue in this manner, selecting a different clause, such as the fourth clause 810d, and drafting responses 830d.

[0058] As shown, the user 110 may determine how to break up individual paragraphs, or even sentences, to define the clauses 810a-d to respond to. Such a feature is more easily illustrated with respect to an email interface than with respect to a chat interface, since emails often incorporate longer paragraphs that may contain multiple clauses that require independent responses. Here, the user 110 would like to respond to a question posed in the third clause 810c separately from an exclamation in the fourth clause 810d.

[0059] Finally, clauses may be responded to in any order, such that the user 110, after preparing responses to the first, third, and fourth clauses 810a, c, d, may then respond to the second clause 810b, by entering response 830b as shown in FIG. 7E.

[0060] In preparing an email responsive to an email received, a user 110 may also include clauses in their response that are not responsive to any previously received message. Accordingly, a fifth response clause may be added to the message with default formatting that is not part of any defined conversation, as shown in FIG. 7F. A user may cancel a previously defined active conversation by selecting a new conversation to be active or by selecting a blank space in the received email window 800.

[0061] As discussed in more detail above, the responses to each clause 830a-d is paired to the corresponding clause by way of a visual cue. This may be a matching color tying conversations together or a matching crosshatching pattern, or any of the other interface device settings 140 as discussed above.

[0062] Typically, an email platform may have a default method of breaking up text into blocks to be treated as the clauses described above. In such scenarios, the platform may recognize each paragraph independently by default. However, a user may want to respond to two separate portions of a single paragraph independently, and may therefore override the default breakup of the text. Accordingly, a user 110 may select a default block of text 610a by using a first selection method, such as tapping at a touch screen of an interface device 100, and may select a portion of a default block of text 610c, or multiple blocks of text, using an alternate selection method, such as by clicking and dragging across the text to select.

[0063] The formatting to be used on a given interface device 100 may be defined at that device in settings 140 defined by the corresponding user 110. Accordingly two users conversing may each have their own visual cue assigned, such as a customized color scheme, or font options.

[0064] Figure 8 shows the method for correlating conversations applied to a commenting system 900, such as on a website or in an online forum. Such an interface may be nearly identical to the that discussed above with respect to group chat interface 700, but may be appended to an object 910 that the discussions apply to, or may be incorporated into a website. Accordingly, multiple comments 920a-d may be assigned to one of two conversations, with a first conversation comprising the first and third comments 920a, c, and the third conversation comprising the second and fourth comments 920b, d.

[0065] Figure 9 is a flowchart illustrating a method for applying retroactive editing features to a discussion interface, such as that described in figures 2-3, and figures 10A-F show a discussion application incorporating such a retroactive editing feature. In the embodiment shown, a user may type a message (1000) into a message entry location 1100 and transmit that message (1010), resulting in the message 1110 appearing in a discussion interface 1120, as shown in FIG. 10B. The user may later regret transmitting

the message, or may notice a mistake in the message and may wish to correct it. Accordingly, the user may choose to modify the previously transmitted message 1110.

[0066] To do so, the user may access (1020) a contextual menu 1130, as shown in FIG. 10C, or may perform a specified action, such as triple tapping the message (1030). Such action may be defined as a "hotkey" by assigning it in user preferences specific to the interface device 100. After inputting the command to edit the message 1110, an edit pop up in which the message may be edited appears (1040) in the chat application. The user 110 may then edit (1050) the message 1110, creating a new message 1110', and accept the changes to the message (1060) by selecting an appropriate button 1150 of the edit popup, as shown in FIG. 10E. After approving such edits, the message is updated, deleted, or replaced, within the discussion interface 1120, as shown in FIG. 10F, and such change may be transmitted to all interface devices 100 participating in the chat (1070). This may be done through the server 150, for example. The user may edit the modified message 1110', creating new messages 1110'' replacing the previous iterations of the message.

[0067] This feature may be implemented using a wide variety of interfaces, and may be accessed by, for example, using a long press of a message to bring up a contextual menu, or double or triple tapping a message.

[0068] Limitations may be applied to this editing process in the discussion interface 1120. For example, edits may only be allowed within some time limit of the initial message transmission (1010) in order to maintain the integrity of discussions occurring within the interface. Where a time limit is applied to editing features, the use of that editing feature may reset the time limit. Accordingly, if a user is given one minute to edit a message and chooses to edit the message during that time, the user may be given one minute from the time of editing to use the editing interface again.

[0069] In some embodiments, when a first user edits a message, the second user may be given access to both the edited message and the original, unedited, message. In

some embodiments, the second user may be given access to the original message only if a message has been edited after a given time limit.

[0070] In all of the interfaces described, the methods discussed ultimately assign messages to individual conversations, such that such conversations may be more easily tracked by users 110. These interfaces may then provide additional features to aid the visualization of such conversations by. Several examples are now described.

[0071] Upon displaying a variety of conversations, as shown in figure 3G for example, a user may select one of the conversations, defining that conversation as active. The application may then highlight that conversation in a variety of ways relative to other conversations. For example, various aspects of the interface, such as the message entry location and the discussion interface may have backgrounds that can be tinted to correlate with the visual cue of the active conversation. Similarly, a tint may be applied to a virtual keyboard shown. In some embodiments, the message entry location may be modified so that text entered appears in the same format and with the same visual cues as will appear when the text is transmitted, while in others, a tint is applied so that the currently active conversation is clear.

[0072] In some embodiments, the discussion interface may apply a filter so that all conversations other than the active conversation are removed from the display. In others, all conversations other than the active conversation remain present but are faded such that the active conversation is most prominent. Alternatively, if one conversation has ended both others are ongoing, a user may apply a filter to remove the concluded conversation and retain all other active conversations. Accordingly, a single question and answer sequence not relevant to other conversations may be easily removed.

[0073] Messages described in this application are typically illustrated as text based messages, but may incorporate or comprise image, video, or audio messages as well. In such scenarios, a visual cue may be applied to the message in the form of a background color, for example.

[0074] Embodiments of the subject matter and the operations described in this specification can be implemented in digital electronic circuitry, or in computer software, firmware, or hardware, including the structures disclosed in this specification and their structural equivalents, or in combinations of one or more of them. Embodiments of the subject matter described in this specification can be implemented as one or more computer programs, i.e., one or more modules of computer program instructions, encoded on computer storage medium for execution by, or to control the operation of, data processing apparatus. Alternatively or in addition, the program instructions can be encoded on an artificially generated propagated signal, e.g., a machine-generated electrical, optical, or electromagnetic signal that is generated to encode information for transmission to suitable receiver apparatus for execution by a data processing apparatus. A computer storage medium can be, or be included in, a computer-readable storage device, a computer-readable storage substrate, a random or serial access memory array or device, or a combination of one or more of them. Moreover, while a computer storage medium is not a propagated signal, a computer storage medium can be a source or destination of computer program instructions encoded in an artificially generated propagated signal. The computer storage medium can also be, or be included in, one or more separate physical components or media (e.g., multiple CDs, disks, or other storage devices).

[0075] The operations described in this specification can be implemented as operations performed by a data processing apparatus on data stored on one or more computer-readable storage devices or received from other sources.

[0076] The term "data processing apparatus" and like terms encompass all kinds of apparatus, devices, and machines for processing data, including by way of example a programmable processor, a computer, a system on a chip, or multiple ones, or combinations, of the foregoing. The apparatus can include special purpose logic circuitry, e.g., an FPGA (field programmable gate array) or an ASIC (application specific integrated circuit). The apparatus can also include, in addition to hardware, code that

creates an execution environment for the computer program in question, e.g., code that constitutes processor firmware, a protocol stack, a database management system, an operating system, a cross-platform runtime environment, a virtual machine, or a combination of one or more of them. The apparatus and execution environment can realize various different computing model infrastructures, such as web services, distributed computing and grid computing infrastructures.

[0077] A computer program (also known as a program, software, software application, script, or code) can be written in any form of programming language, including compiled or interpreted languages, declarative or procedural languages, and it can be deployed in any form, including as a standalone program or as a module, component, subroutine, object, or other unit suitable for use in a computing environment. A computer program may, but need not, correspond to a file in a file system. A program can be stored in a portion of a file that holds other programs or data (e.g., one or more scripts stored in a markup language document), in a single file dedicated to the program in question, or in multiple coordinated files (e.g., files that store one or more modules, sub programs, or portions of code). A computer program can be deployed to be executed on one computer or on multiple computers that are located at one site or distributed across multiple sites and interconnected by a communication network.

[0078] The processes and logic flows described in this specification can be performed by one or more programmable processors executing one or more computer programs to perform actions by operating on input data and generating output. The processes and logic flows can also be performed by, and apparatus can also be implemented as, special purpose logic circuitry, e.g., an FPGA (field programmable gate array) or an ASIC (application specific integrated circuit).

[0079] Processors suitable for the execution of a computer program include, by way of example, both general and special purpose microprocessors, and any one or more processors of any kind of digital computer. Generally, a processor will receive instructions and data from a read only memory or a random access memory or both. The

essential elements of a computer are a processor for performing actions in accordance with instructions and one or more memory devices for storing instructions and data. Generally, a computer will also include, or be operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices for storing data, e.g., magnetic, magneto optical disks, or optical disks. However, a computer need not have such devices. Moreover, a computer can be embedded in another device, e.g., a mobile telephone, a personal digital assistant (PDA), a mobile audio or video player, a game console, a Global Positioning System (GPS) receiver, or a portable storage device (e.g., a universal serial bus (USB) flash drive), to name just a few. Devices suitable for storing computer program instructions and data include all forms of non volatile memory, media and memory devices, including by way of example semiconductor memory devices, e.g., EPROM, EEPROM, and flash memory devices; magnetic disks, e.g., internal hard disks or removable disks; magneto optical disks; and CD ROM and DVD-ROM disks. The processor and the memory can be supplemented by, or incorporated in, special purpose logic circuitry.

[0080] To provide for interaction with a user, embodiments of the subject matter described in this specification can be implemented on a computer having a display device, e.g., a CRT (cathode ray tube) or LCD (liquid crystal display) monitor, for displaying information to the user and a keyboard and a pointing device, e.g., a mouse or a trackball, by which the user can provide input to the computer. Other kinds of devices can be used to provide for interaction with a user as well; for example, feedback provided to the user can be any form of sensory feedback, e.g., visual feedback, auditory feedback, or tactile feedback; and input from the user can be received in any form, including acoustic, speech, or tactile input. In addition, a computer can interact with a user by sending documents to and receiving documents from a device that is used by the user; for example, by sending web pages to a web browser on a user's client device in response to requests received from the web browser.

[0081] Embodiments of the subject matter described in this specification can be implemented in a computing system that includes a back end component, e.g., as a data server, or that includes a middleware component, e.g., an application server, or that includes a front end component, e.g., a client computer having a graphical user interface or a Web browser through which a user can interact with an implementation of the subject matter described in this specification, or any combination of one or more such back end, middleware, or front end components. The components of the system can be interconnected by any form or medium of digital data communication, e.g., a communication network. Examples of communication networks include a local area network ("LAN") and a wide area network ("WAN"), an inter-network (e.g., the Internet), and peer-to-peer networks (e.g., ad hoc peer-to-peer networks).

[0082] The computing system can include clients and servers. A client and server are generally remote from each other and typically interact through a communication network. The relationship of client and server arises by virtue of computer programs running on the respective computers and having a client-server relationship to each other. In some embodiments, a server transmits data (e.g., an HTML page) to a client device (e.g., for purposes of displaying data to and receiving user input from a user interacting with the client device). Data generated at the client device (e.g., a result of the user interaction) can be received from the client device at the server.

[0083] While this specification contains many specific implementation details, these should not be construed as limitations on the scope of any inventions or of what may be claimed, but rather as descriptions of features specific to particular embodiments of particular inventions. Certain features that are described in this specification in the context of separate embodiments can also be implemented in combination in a single embodiment. Conversely, various features that are described in the context of a single embodiment can also be implemented in multiple embodiments separately or in any suitable subcombination. Moreover, although features may be described above as acting in certain combinations and even initially claimed as such, one or more features from a

claimed combination can in some cases be excised from the combination, and the claimed combination may be directed to a subcombination or variation of a subcombination.

[0084] Similarly, while operations are depicted in the drawings in a particular order, this should not be understood as requiring that such operations be performed in the particular order shown or in sequential order, or that all illustrated operations be performed, to achieve desirable results. In certain circumstances, multitasking and parallel processing may be advantageous. Moreover, the separation of various system components in the embodiments described above should not be understood as requiring such separation in all embodiments, and it should be understood that the described program components and systems can generally be integrated together in a single software product or packaged into multiple software products.

While the present invention has been described at some length and with some particularity with respect to the several described embodiments, it is not intended that it should be limited to any such particulars or embodiments or any particular embodiment, but it is to be construed with references to the appended claims so as to provide the broadest possible interpretation of such claims in view of the prior art and, therefore, to effectively encompass the intended scope of the invention. Furthermore, the foregoing describes the invention in terms of embodiments foreseen by the inventor for which an enabling description was available, notwithstanding that insubstantial modifications of the invention, not presently foreseen, may nonetheless represent equivalents thereto.

What is claimed is:

1. A computer based method for correlating conversations in a messaging environment, the method comprising:

providing a discussion interface at a first interface device, wherein the discussion interface displays a first message and a second message;

receiving, at the first interface device, a first indication that the first message is part of an active conversation;

providing a message entry location for inputting new messages, the message entry location visually associated with the discussion interface,

receiving a first new message at the message entry location; and

displaying the first new message with a first visual cue applied within the discussion interface at the first interface device,

wherein the first visual cue is shared by messages associated with the active conversation.

2. The computer based method of claim 1 wherein the first indication is generated by a tapping input at a touch sensitive display of the first interface device.

3. The computer based method of claim 1 wherein the visual cue is a first color assigned to the first conversation, and wherein the second message is displayed in a second color.

4. The computer based method of claim 1 further comprising:

displaying the first new message in the discussion interface without incorporating the first visual cue prior to receiving the first indication, and

applying the first visual cue to the first new message in the discussion interface after receiving the first indication.

5. The computer based method of claim 1, wherein the first message is part of a first conversation and the second message is part of a second conversation, the method further comprising:

defining, upon receiving the first indication, the first conversation as the active conversation, and

defining the first new message as part of the first conversation,

wherein the first visual cue is incorporated into any previously displayed messages that are part of the first conversation.

6. The computer based method of claim 5 further comprising:

receiving, at the first interface device, after displaying the first new message, a second indication that the second message is part of an active conversation;

defining, upon receiving the second indication, the active conversation as the second conversation exclusively;

receiving a second new message at the message entry location; and

displaying the second new message in the discussion interface at the first interface device;

wherein the displaying of the second new message incorporates a second visual cue shared by messages associated with the second conversation.

7. The computer based method of claim 6 wherein the first and second new messages are displayed in the discussion interface in the chronological order in which they were received.

8. The computer based method of claim 7 further comprising:

changing a visual element of the message entry location upon receipt of the first indication to match the first visual cue, and

upon receipt of the second indication, changing the visual element of the message entry location to match the second visual cue,

such that the visual element of the message entry location matches the defined active conversation.

9. The computer based method of claim 8 wherein the visual element is a background color.

10. The computer based method of claim 1 further comprising:

providing the discussion interface at a second interface device, wherein the discussion interface displays the first message and the second message;

receiving, at the second interface device, the first indication;

displaying the first new message at the second interface device, wherein the displaying of the first new message incorporates a third visual cue shared solely by messages associated with the active conversation.

11. The computer based method of claim 10 wherein the first indication is generated at the first interface device and is received at the second interface device from one of a server or the first interface device.

12. The computer based method of claim 10 wherein the first visual cue and the third visual cue differ and are based on user preferences at each of the first user interface device and the second user interface device.

13. The computer based method of claim 1 further comprising:

changing a visual element of the message entry location upon receipt of the first indication to match the first visual cue.

14. The computer based method of claim 13 wherein the visual element is a background color.

15. The computer based method of claim 1 wherein the first visual cue is in the form of proximity such that the first new message is displayed at a location within the discussion interface in closer proximity to the first message relative to proximity of the second message to the first message.

16. A system for correlating conversations, the system comprising an interface device in communication with a computerized network, the interface device comprising:

a processor for implementing a software application on the interface device;

a memory for storing the software application and for storing a plurality of messages in accordance with the software application;

a transmission unit for transmitting messages to the computerized network; and

a display,

wherein the software application comprises instructions for:

providing a discussion interface at the display of the user interface device for displaying messages stored in the memory;

recording an indication that one of several conversations, each comprising one or more of the messages stored in memory, is an active conversation;

providing a message entry location for entering new messages, the message entry location visually associated with the discussion interface;

receiving at least one new message entered at the message entry location;

transmitting, using the transmission unit, the at least one new message to the computerized network incorporating an indication of which of the several conversations was the active conversation at the time of entry of the new messages; and

displaying, at the display, the at least one new message alongside at least one message associated with a conversation other than the active conversation and incorporating visual cues shared with any messages that are part of the conversation that was the active conversation upon entry of the at least one new message.

17. The system of claim 16, wherein the display is a touch screen, and wherein the indication recorded that one of the several conversations is the active conversation is a tapping input at the display.

18. The system of claim 16, the software application further comprising instructions for modifying a visual element of the message entry location based on which of the conversations is the active conversation.

19. The system of claim 18 wherein the visual element is a background color.

20. The system of claim 16, wherein the memory further stores user preferences, and wherein the visual cues are defined in the user preferences.

ABSTRACT

A computer based method for correlating conversations is provided, including the steps of providing a discussion interface at an interface device, receiving an indication that one of several messages displayed at the discussion interface is part of an active conversation, providing a message entry location for imputing new messages associated with the discussion interface, and receiving new messages at the message entry location. New messages received are automatically associated with the active conversation by displaying them with a visual cue shared by all messages associated with the active conversation.

DECLARATION AND ASSIGNMENT
FOR PATENT APPLICATIONS

As a below named inventor (designated as "the undersigned"), I hereby declare that:

This declaration is directed to the application attached hereto and entitled **METHOD AND SYSTEM FOR CORRELATING CONVERSATIONS IN A MESSAGING ENVIRONMENT.** If the application is not attached hereto, the application is as identified by the attorney docket number as set forth above.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

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

Address all correspondence to **CUSTOMER NUMBER 61650**.

ASSIGNMENT

WHEREAS, **CTEXT TECHNOLOGY LLC**, having an address at **228 Park Avenue S., No. 90348, New York, NY 10003** (hereinafter "ASSIGNEE"), is desirous of acquiring the entire right, title and interest in, to and under the above identified application and invention, and to any Letters Patent(s) that may be granted therefor.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said invention, and the said United States application and all divisions, renewals and continuations thereof, and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventor's certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

The undersigned authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

The undersigned covenants and agrees that he has full right to convey the entire interest herein assigned, and has not executed, and will not execute, any agreement in conflict herewith.

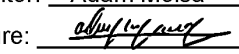
The undersigned further covenants and agrees that he will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The undersigned hereby grants the law firm of Myers Wolin, LLC the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

The undersigned hereby acknowledges 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.

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

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