

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 8,745,149 B2
APPLICATION NO. : 13/615419
DATED : June 3, 2014
INVENTOR(S) : Gerhard D. Klassen, Christopher R. Wormald and Lawrence E. Kuhl

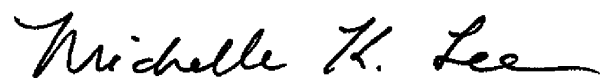
Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims

Column 9, line 6, in claim 8, "... wherein the first comprises ..." is deleted and replaced with
"... wherein the first input comprises ...".

Signed and Sealed this
Ninth Day of September, 2014



Michelle K. Lee
Deputy Director of the United States Patent and Trademark Office

Patent No. 8,745,149

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Patent No.: **8,745,149** Issued: **June 3, 2014**
Assignee: **BlackBerry Limited** Docket No.: **70314/01061**
Title: **Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment**

U.S. Patent & Trademark Office
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION

Sir:

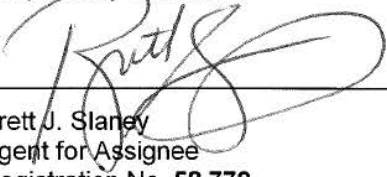
Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, Applicant requests that a Certificate of Correction be issued in respect of the above-identified patent. A duly prepared Certificate of Correction Form PTO/SB/44 is appended.

The error to be corrected is in the first line of claim 8 wherein a word has been deleted. Corrected claim 8 should read "The method of claim 1, wherein the first **input** comprises detecting a pointing device in proximity to the instant message".

The error in the patent occurred through the fault of the Patent Office, as clearly disclosed by the records of the application which matured into this patent. Accordingly, Applicant believes that no fee is due.

Issuance of the Certificate of Correction remedying the errors is earnestly requested.

Respectfully submitted,



Brett J. Slaney
Agent for Assignee
Registration No. **58,772**

Date: July 15, 2014

Tel: 416-863-2518
BSL/jm

(✓) encl.

BLAKE, CASSELS & GRAYDON LLP
199 Bay Street
Suite 4000, Commerce Court West, Toronto
ON M5L 1A9
Canada

22580822.1

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**Page 1 of 1

PATENT NO. : 8,745,149

APPLICATION NO.: 13/615,419

ISSUE DATE : June 3, 2014

INVENTOR(S) : KLASSEN, Gerhard D.; WORMALD, Christopher R.; KUHL, Lawrence E.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In claim 8, "... wherein the first comprises ..." is deleted and replaced with "... wherein the first input comprises ...".

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Blake, Cassels & Graydon LLP, Attn: Brett J. Slaney
199 Bay Street, Suite 4000, Commerce Court West, Toronto
Ontario, M5L 1A9, CANADA

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. 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 1.0 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: **Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Acknowledgement Receipt

EFS ID:	19588172
Application Number:	13615419
International Application Number:	
Confirmation Number:	2640
Title of Invention:	HANDHELD ELECTRONIC DEVICE AND ASSOCIATED METHOD PROVIDING TIME DATA IN A MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Gerhard D. Klassen
Customer Number:	91704
Filer:	Brett Joseph Slaney/Judith Martin
Filer Authorized By:	Brett Joseph Slaney
Attorney Docket Number:	70314/01061
Receipt Date:	15-JUL-2014
Filing Date:	13-SEP-2012
Time Stamp:	17:40:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	11144-US-CNT5_2014-07-15_SUB_Req-cert-of-correction.pdf	208103 8a8cecedb87fc572e596829d549da922456ada5	no	2

Warnings:

Information:

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

Table with 5 columns: APPLICATION NO., ISSUE DATE, PATENT NO., ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 13/615,419, 06/03/2014, 8745149, 70314/01061, 2640

91704 7590 05/14/2014
Blake, Cassels & Graydon LLP
199 BAY STREET, SUITE 4000
COMMERCE COURT WEST
TORONTO, ON M5L 1A9
CANADA

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 0 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):

Gerhard D. Klassen, Waterloo, CANADA;
Christopher R. Wormald, Kitchener, CANADA;
Lawrence E. Kuhl, Waterloo, CANADA;

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.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **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)

91704 7590 12/26/2013
 Blake, Cassels & Graydon LLP
 199 BAY STREET, SUITE 4000
 COMMERCE COURT WEST
 TORONTO, ON M5L 1A9
 CANADA

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.
13/615,419	09/13/2012	Gerhard D. Klassen	70314/01061	2640

TITLE OF INVENTION: HANDHELD ELECTRONIC DEVICE AND ASSOCIATED METHOD PROVIDING TIME DATA IN A MESSAGING ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1780	\$300	\$0	\$2080	03/26/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
LAI, MICHAEL C	2457	709-207000

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. Brett J. Staney
 2. Blake, Cassels & Graydon LLP
 3. Graydon LLP

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

BLACKBERRY LIMITED

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

Waterloo, CANADA

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 02-2813 (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
- Applicant asserting small entity status. See 37 CFR 1.27
- Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature _____

Brett J. Staney
 Brett J. Staney

Typed or printed name _____

Date March 20, 2014

Registration No. 58,772

Electronic Patent Application Fee Transmittal

Application Number:	13615419			
Filing Date:	13-Sep-2012			
Title of Invention:	HANDHELD ELECTRONIC DEVICE AND ASSOCIATED METHOD PROVIDING TIME DATA IN A MESSAGING ENVIRONMENT			
First Named Inventor/Applicant Name:	Gerhard D. Klassen			
Filer:	Brett Joseph Slaney/Judith Martin			
Attorney Docket Number:	70314/01061			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	960	960
Publ. Fee- Early, Voluntary, or Normal	1504	1	0	0

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt

EFS ID:	18535643
Application Number:	13615419
International Application Number:	
Confirmation Number:	2640
Title of Invention:	HANDHELD ELECTRONIC DEVICE AND ASSOCIATED METHOD PROVIDING TIME DATA IN A MESSAGING ENVIRONMENT
First Named Inventor/Applicant Name:	Gerhard D. Klassen
Customer Number:	91704
Filer:	Brett Joseph Slaney/Judith Martin
Filer Authorized By:	Brett Joseph Slaney
Attorney Docket Number:	70314/01061
Receipt Date:	20-MAR-2014
Filing Date:	13-SEP-2012
Time Stamp:	14:18:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$960
RAM confirmation Number	504
Deposit Account	022553
Authorized User	

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	Issue Fee Payment (PTO-85B)	11144-US-CNT5_2014-03-20_GR_Issue-Fee.pdf	120586 5d2ebb0c5db557ff5bb479871cc89f0986c52cc6	no	1

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	32003 c59cde1ee54468cb71dbf7ce4ea3e63b853e7940	no	2
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Warnings:

Information:

Total Files Size (in bytes): 152589

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
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

91704 7590 12/26/2013
Blake, Cassels & Graydon LLP
199 BAY STREET, SUITE 4000
COMMERCE COURT WEST
TORONTO, ON M5L 1A9
CANADA

EXAMINER

LAI, MICHAEL C

ART UNIT PAPER NUMBER

2457

DATE MAILED: 12/26/2013

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

TITLE OF INVENTION: HANDHELD ELECTRONIC DEVICE AND ASSOCIATED METHOD PROVIDING TIME DATA IN A MESSAGING ENVIRONMENT

Table with 7 columns: APPLN. TYPE, ENTITY STATUS, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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)

91704 7590 12/26/2013
 Blake, Cassels & Graydon LLP
 199 BAY STREET, SUITE 4000
 COMMERCE COURT WEST
 TORONTO, ON M5L 1A9
 CANADA

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.
13/615,419	09/13/2012	Gerhard D. Klassen	70314/01061	2640

TITLE OF INVENTION: HANDHELD ELECTRONIC DEVICE AND ASSOCIATED METHOD PROVIDING TIME DATA IN A MESSAGING ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1780	\$300	\$0	\$2080	03/26/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
LAI, MICHAEL C	2457	709-207000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "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.</p>	<p>2. For printing on the patent front page, list</p> <p>(1) The names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(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. _____ 2</p> <p>_____ 3</p>
---	---

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

<p>4a. The following fee(s) are submitted:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> 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).</p>
---	---

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

Applicant certifying micro entity status. See 37 CFR 1.29

Applicant asserting small entity status. See 37 CFR 1.27

Applicant changing to regular undiscounted fee status.

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

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

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

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

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

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/615,419 09/13/2012 Gerhard D. Klassen 70314/01061 2640

91704 7590 12/26/2013
Blake, Cassels & Graydon LLP
199 BAY STREET, SUITE 4000
COMMERCE COURT WEST
TORONTO, ON M5L 1A9
CANADA

EXAMINER

LAI, MICHAEL C

ART UNIT PAPER NUMBER

2457

DATE MAILED: 12/26/2013

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

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

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 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.

**Notices of Allowance and Fee(s) Due mailed between October 1, 2013 and
December 31, 2013**

(Addendum to PTOL-85)

If the "Notice of Allowance and Fee(s) Due" has a mailing date on or after October 1, 2013 and before January 1, 2014, the following information is applicable to this application.

If the issue fee is being timely paid on or after January 1, 2014, the amount due is the issue fee and publication fee in effect January 1, 2014. On January 1, 2014, the issue fees set forth in 37 CFR 1.18 decrease significantly and the publication fee set forth in 37 CFR 1.18(d)(1) decreases to \$0.

If an issue fee or publication fee has been previously paid in this application, applicant is not entitled to a refund of the difference between the amount paid and the amount in effect on January 1, 2014.

Notice of Allowability	Application No. 13/615,419	Applicant(s) KLASSEN ET AL.	
	Examiner MICHAEL C. LAI	Art Unit 2457	AIA (First Inventor to File) Status No

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

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

1. This communication is responsive to appeal brief filed on 10/30/2013.
 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 1-17. 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/opph/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. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. <input type="checkbox"/> Other _____. |
| 4. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>12/16/2013</u> . | |

/MICHAEL C LAI/
Examiner, Art Unit 2457

DETAILED ACTION

This office action is responsive to appeal brief filed on 10/30/2013.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brett J. Slaney on 12/16/2013.

The application has been amended as follows:

- Claims 8 and 16 have been amended as follows:

8. (Currently amended) The method of claim 1, wherein ~~at least one of~~ the first input ~~and the second input~~ comprises detecting a pointing device in proximity to the instant message.

16. (Currently amended) The electronic device of claim 9, wherein ~~at least one of~~ the first input ~~and the second input~~ comprises detecting a pointing device in proximity to the instant message.

Allowable Subject Matter

Claims 1-17 are allowed based on applicant's Arguments in the Appeal Brief filed on 10/30/2013 and Examiner's amendment filed on 12/16/2013.

Conclusion

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

Michael C. Lai whose telephone number is (571) 270-3236. The examiner can normally be reached on M-F 8:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael C. Lai
Art Unit 2457
Phone: (571) 270-3236
Fax: (571) 270-4236

/MICHAEL C LAI/
Examiner, Art Unit 2457

Examiner-Initiated Interview Summary	Application No. 13/615,419	Applicant(s) KLASSEN ET AL.	
	Examiner MICHAEL C. LAI	Art Unit 2457	

All participants (applicant, applicant's representative, PTO personnel):

(1) MICHAEL C. LAI. (3)_____.

(2) Brett J. Slaney. (4)_____.

Date of Interview: 16 December 2013.

Type: Telephonic Video Conference
 Personal [copy given to: applicant applicant's representative]

Exhibit shown or demonstration conducted: Yes No.
If Yes, brief description: _____.

Issues Discussed 101 112 102 103 Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 8 and 16.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant's representative agreed to amend claims 8 and 16. See Examiner's amendment for details.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Attachment

/MICHAEL C LAI/ Examiner, Art Unit 2457	
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	8833	455/566,567.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/12/16 16:57
L6	1267	715/772.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/12/16 16:57
S1	1	WO 01/30091	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 11:53
S2	3	WO "0130091"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 12:18
S3	5	"6603389"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 12:22
S4	1	GB "0228076"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 12:44
S5	5	GB "2384150"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 12:45
S6	1	EP "0743762"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 13:05
S7	2	"20030104841"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 13:16
S8	3	"20030060240"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/20 13:24

S9	35	"6727930" "6721651"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/07/20 13:29
S10	12571	709/206,207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 10:50
S11	11361	709/206.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 10:50
S12	2238	709/207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 10:50
S13	1028	S11 S12	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 10:50
S14	5822	time\$1stamp\$4 with (expir\$5 or duration or period)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:19
S15	478751	(without or no or interrupt\$4 or discontin\$4 or disconnect\$4) with (communication or conversation or chat\$4 or messag\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:21
S16	162	S14 same S15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:22
S17	95	S14 with S15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:22
S18	3	S10 S17	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:22
S19	11	S10 S16	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:31
S20	8	S19 not S18	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:31

S21	1	S20 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:32
S22	718	(interrupt\$4 or discontinu\$4) with (IM or instant adj1 messag\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:50
S23	0	S14 same S22	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:50
S24	1	S14 S22	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2011/07/29 11:50
S25	15	"7181497" "6889063"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/07/29 13:04
S26	41	"7111044" "7099700" "7305441"	US-PGPUB; USPAT	OR	OFF	2011/07/29 18:32
S27	12343	(time or time\$1stamp\$4) with (display\$4 or output\$4) with (expir\$5 or duration or period) with timer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:18
S28	1528	(time or time\$1stamp\$4) with (display\$4 or output\$4) with (expir\$5) with timer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:19
S29	3	(time\$1stamp\$4) with (display\$4 or output\$4) with (expir\$5) with timer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:20
S30	2	(time\$1stamp\$4) near3 (display\$4 or output\$4) with timer near2(expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:40
S31	205	(time or time\$1stamp\$4) near3 (display\$4 or output\$4) with timer near2 (expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:41
S32	2	(time\$1stamp\$4) near3 (display\$4 or output\$4) with timer near2 (expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:41
S33	77	S31 messag\$4 (mobile or pda or cellular or phone)	US-PGPUB; USPAT; EPO;	AND	OFF	2012/01/23 10:43

			JPO; DERWENT; IBM_TDB			
S34	46	S31 messag\$4 same (mobile or pda or cellular or phone)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:43
S35	5	S34 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 10:44
S36	205	(time or time\$1stamp\$4) near3 (display\$4 or output\$4) with timer near2 (expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:15
S37	77	S36 messag\$4 (mobile or pda or cellular or phone)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:15
S38	11	S37 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:15
S39	11	S38 not "s36"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:15
S40	116	(time or time\$1stamp\$4) near3 (display\$4 or output\$4) with timer adj2 (expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:21
S41	33	S37 S40	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:22
S42	7	S41 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:22
S43	0	S42 not S39	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:22
S44	59	S40 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:23
S45	52	S44 not S39	US-PGPUB; USPAT; EPO;	AND	OFF	2012/01/23 12:24

			JPO; DERWENT; IBM_TDB			
S46	22	S40 same messag\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:30
S47	7	S46 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:31
S48	5	S47 not S39	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:31
S49	67	(time or time\$1stamp\$4) adj3 (display\$4 or output\$4) with timer adj2 (expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:33
S50	16	S49 same messag\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:34
S51	5	S50 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:34
S52	6	(time or time\$1stamp\$4) adj3 (display\$4 or output\$4) adj3 timer adj2 (expir\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:35
S53	2	S52 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:36
S54	14	timer adj2 (expir\$5) adj4 (time or time\$1stamp\$4) adj3 (display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:37
S55	10	S54 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:37
S56	21	timer adj4 (expir\$5) adj6 (time or time\$1stamp\$4) adj3 (display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:42
S57	15	S56 @ad < "20030919"	US-PGPUB; USPAT; EPO;	AND	OFF	2012/01/23 12:42

			JPO; DERWENT; IBM_TDB			
S58	5	S57 not S55	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 12:43
S59	1	10/685626.app.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 18:14
S60	5	"6021313"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 18:28
S61	28	"5786805"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 18:47
S62	721	time\$4 adj1 out adj6 (time or time\$1stamp\$4) near3 (display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 18:51
S63	432	S62 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 18:51
S64	18	S63 (messag\$4 same (mobile or pda or cellular or phone))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 18:53
S65	0	time\$4 adj1 out adj6 (time\$1stamp\$4) near3 (display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:00
S66	1987	(time\$1stamp\$4) near3 (display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:01
S67	94840	(timer adj2 expir\$5) or time\$1out	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:03
S68	15	S66 same S67	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:03
S69	2	S66 with S67	US-PGPUB; USPAT; EPO;	AND	OFF	2012/01/23 20:03

			JPO; DERWENT; IBM_TDB			
S70	1	S68 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:04
S71	12537	(after or when) adj4 ((timer adj2 expir\$5) or time\$1out)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:14
S72	31	S66 S71	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:14
S73	0	S66 with S71	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:14
S74	0	S66 same S71	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:14
S75	653211	(time or time\$1stamp\$4) near3 (display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:15
S76	2351	S71 S75	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:15
S77	208	S71 same S75	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:15
S78	98	S71 with S75	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:15
S79	44	S78 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/01/23 20:16
S80	3	"20030001890"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/04 17:17
S81	1	"7970849"	USPAT	OR	OFF	2012/06/20 19:34

S82	5911	709/204.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/20 19:46
S83	872	715/772.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/20 19:47
S84	6196	455/566,567.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/20 19:48
S85	57912	(time time\$1stamp\$4) with (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/20 20:03
S86	777	(interrupt\$4 or discontinu\$4) with (IM or instant adj1 messag\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/20 20:04
S87	58	S85 and S86	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/20 20:04
S88	14475	709/206,207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/20 20:05
S89	26302	S82 S83 S84 S88	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/20 20:05
S90	10	S87 and S89	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/20 20:05
S91	2	S90 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/06/20 20:05
S98	15313	709/206,207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 12:15
S99	9	"8301713"	US-PGPUB;	AND	OFF	2012/10/31

			USPAT; EPO; JPO; DERWENT; IBM_TDB			12:15
S100	3	"20040205775"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 14:36
S101	15313	709/206,207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:24
S102	7187	time\$1stamp\$4 with (expir\$5 or duration or period)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:24
S103	548873	(without or no or interrupt\$4 or discontinu\$4 or disconnect\$4) with (communication or conversation or chat\$4 or messag\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:24
S104	107	S102 with S103	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:24
S105	6	S101 S104	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2012/10/31 16:24
S106	66	S104 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:31
S107	65	S106 not S105	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:32
S108	206	(varied depend\$4) with (frequency (how adj often)) with (duration period) with (conversation communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/10/31 16:49
S109	23	(varied depend\$4) with (frequency (how adj often)) with (duration period) with (conversation communication) with message\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/10/31 16:49
S110	5	S109 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2012/10/31 16:50
S111	8	GB "2350746"	US-PGPUB;	AND	OFF	2012/10/31

			USPAT; EPO; JPO; DERWENT; IBM_TDB			17:27
S112	11	"7236472"	USPAT	OR	OFF	2013/01/10 11:17
S113	42	EP "1176840"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 11:23
S114	2	JP "200311145"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 11:45
S115	17	time\$1stamp with ((infrequent or frequency) near3 (message or conversation or chat))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 12:58
S116	11	time\$1stamp with ((infrequent or frequency) near3 (message or conversation or chat)) with (duration or time)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 12:59
S117	0	S116 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 12:59
S118	0	S115 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:00
S119	0	time\$1stamp\$1 same ((infrequent or frequency) adj3 ((instant adj messag\$4) or conversation or chat)) with (duration or time)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:09
S120	58	((infrequent or frequency) adj3 ((instant adj messag\$4) or conversation or chat)) with (duration or time)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:09
S121	27	S120 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:10
S122	4	time\$1stamp\$1 S121	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:10
S123	24	(varied depend\$4) with (frequency (how adj often)) with (duration period) with (conversation communication)	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	OFF	2013/01/10 13:17

		with message\$4	IBM_TDB			
S124	0	(varied or depend\$4) adj3 ((frequency) adj3 ((instant adj messag\$4) or conversation or chat))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:34
S125	15	(varied or depend\$4) same ((frequency) adj3 ((instant adj messag\$4) or conversation or chat))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:34
S126	7	S125 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 13:35
S127	0	time\$1stamp\$1 with ((infrequent or frequency) near3 ((instant adj messag\$4) or conversation or chat))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 14:40
S128	0	time\$1stamp\$1 with ((infrequent or frequency) near6 ((instant adj messag\$4) or conversation or chat))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 14:41
S129	0	time\$1stamp near6 (characteristic adj3 conversation)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/10 19:47
S130	0	time\$1stamp with (characteristic adj3 conversation)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/10 19:48
S131	349136	time near2 (stamp indicat\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/10 19:49
S132	57722	characteristic near3 (conversation connection message chat)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/10 19:51
S133	25	S131 with S132	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/10 19:51
S134	21	S133 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 19:52
S135	31623	frequency near3 (conversation connection message chat)	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	OFF	2013/01/10 20:08

			IBM_TDB			
S136	125	S131 same S135	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/10 20:08
S137	64	S136 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 20:09
S138	74	S136 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 20:38
S139	10	S138 not S137	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/10 20:38
S140	2	"20050080866"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/01/11 11:07
S141	0	(active dynamic\$4) adj ((time adj information) time\$1stamp\$4) with (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:24
S142	0	(active dynamic\$4) adj ((time adj information) time\$1stamp\$4) same (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:25
S143	81	(active dynamic\$4) adj ((time adj information) time\$1stamp\$4) and (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:25
S144	1	(active dynamic\$4) adj ((time adj information) time\$1stamp\$4) and ((stylus cursor (pointing adj1 device\$1) (user adj1 input)) with ((time adj information) time\$1stamp\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:27
S145	81	(active dynamic\$4) adj1 ((time adj information) time\$1stamp\$4) and (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:29
S146	12	S145 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT;	AND	OFF	2013/02/15 16:29

			IBM_TDB			
S147	42	(active dynamic\$4) adj1 (time\$1stamp\$4) and (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:36
S148	9	S147 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/15 16:37
S149	0	S148 not S146	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/15 16:37
S150	19299	((time adj information) time\$1stamp\$4) near4 (date day)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:48
S151	5516	(time\$1stamp\$4) near4 (date day)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:50
S152	2570	S151 and (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:51
S153	48	S151 same (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:51
S154	3	S153 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/15 16:51
S155	2570	S151 and (stylus cursor (pointing adj1 device\$1) (user adj1 input))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/15 16:54
S156	573	S155 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/15 16:55
S157	2	"20030104841"	US-PGPUB; USPAT; EPO; JPO;	AND	OFF	2013/02/19 16:54

			DERWENT; IBM_TDB			
S158	3	"20030060240"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/19 16:58
S159	95	"6590529"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/19 17:01
S160	2	S159 time\$1stamp\$1 message\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/19 17:03
S161	2	EP "0743762"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/02/19 17:10
S162	43	EP "1176840"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/19 17:16
S163	1	S162 time\$1stamp\$1 message\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/19 17:17
S164	16003	709/206,207.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/02/19 23:12
S165	6676	709/206,207.ccls.	USPAT	AND	ON	2013/02/19 23:13
S166	1845	709/207.ccls.	USPAT	AND	ON	2013/02/19 23:13
S167	6037	709/206.ccls.	USPAT	AND	ON	2013/02/19 23:13
S168	1206	S166 S167	USPAT	AND	ON	2013/02/19 23:14
S169	11	time near4 (over\$1night or following adj day) near4 display\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/02/19 23:26
S170	3	S169 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/19 23:32
S171	5524	(time\$1stamp\$4) near4 (date day)	US-PGPUB; USPAT;	OR	ON	2013/02/20 09:40

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S172	2975	(time adj2 (chang\$4 progress\$4)) near9 ((display\$4) near2 time)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 09:43
S173	16	S171 and S172	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 09:43
S174	0	S171 same S172	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 09:43
S175	6	S173 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 09:44
S176	10	S173 not S175	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 09:47
S177	2	"20070142822"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 09:51
S178	2	"20020147135"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 10:05
S179	39	(time adj1 zone adj2 (chang\$4 progress\$4)) near9 ((display\$4) near2 time)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 10:54
S180	15	S179 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 10:55
S181	0	(time\$1stamp\$4) near4 moving near4 (cursor stylus pointing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 12:38
S182	1	(time\$1stamp\$4) with (moving	US-PGPUB;	OR	ON	2013/02/20

		near4 (cursor stylus pointing))	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			12:38
S183	76	(time\$1stamp\$4) near4 (cursor stylus pointing)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 12:42
S184	16	S183 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 12:42
S185	25	"6160497"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 15:40
S186	2975	(time adj2 (chang\$4 progress\$4)) near9 ((display\$4) near2 time)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 15:41
S187	0	S185 S186	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 15:41
S188	6	"6069568"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 15:47
S189	1	S188 (cursor with time adj stamp\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 16:01
S190	0	S185 (cursor with time adj stamp\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 17:22
S191	39	(time adj1 zone adj2 (chang\$4 progress\$4)) near9 ((display\$4) near2 time)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/20 17:34
S192	15	S191 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 17:34
S193	0	S192 (dispay\$4 with time with (select\$4 or input\$4))	US-PGPUB; USPAT; EPO;	AND	OFF	2013/02/20 17:34

			JPO; DERWENT; IBM_TDB			
S194	11	S192 (display\$4 with time with (select\$4 or input\$4 or cursor or stylus))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 17:36
S195	8	(gmail or google) with (display\$4 with time with (select\$4 or input\$4 or cursor or stylus))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 17:52
S196	0	S195 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 17:53
S197	20322	(display\$4 near3 (time time\$1stamp\$1)) adj6 (select\$4 or input\$4 or cursor or stylus)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/02/20 18:02
S198	7381	S197 and ((instant adj messag\$4) message\$1 email\$1 e-mail\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/02/20 18:04
S199	1061	S197 same ((instant adj messag\$4) message\$1 email\$1 e-mail\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/02/20 18:04
S200	604	S197 with ((instant adj messag\$4) message\$1 email\$1 e-mail\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/02/20 18:04
S201	333	S200 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 18:05
S202	16002	709/206,207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 18:05
S203	6	S201 and S202	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/20 18:05
S204	12720926	(stylus cursor (pointing adj1 device\$1)) adj2 over (time time\$1stamp\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/23 22:25
S205	218	(stylus cursor (pointing adj1	US-PGPUB;	OR	ON	2013/02/23

		device\$1)) adj2 over adj2 (time time\$1stamp\$1)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			22:26
S206	169277	(time\$1stamp\$1 or time) near6 message\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/23 22:29
S207	29	S205 S206	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/23 22:29
S208	13	S207 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/23 22:30
S209	0	(stylus cursor (pointing adj1 device\$1)) adj2 over adj2 (time\$1stamp\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/23 22:46
S210	25	(stylus cursor (pointing adj1 device\$1)) adj6 (time\$1stamp\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/23 22:47
S211	5	S210 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/23 22:47
S212	6992	(time\$1stamp\$4) near6 (date day (absolute adj time) (relative adj time))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/24 08:56
S213	8002	(time\$1stamp\$4) near6 (date day (absolute adj time) (relative adj time) duration)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/24 08:57
S214	4204	(time\$1stamp\$1) near6 (select\$4 or input\$4 or cursor or stylus)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 08:58
S215	876	S213 S214	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 08:59
S216	5229	(time\$1stamp\$1) near3 (first or	US-PGPUB;	AND	OFF	2013/02/24

		second)	USPAT; EPO; JPO; DERWENT; IBM_TDB			09:01
S217	262	S215 S216	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:01
S218	29	S217 (IM or instant adj messag\$4 or chat\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:02
S219	11	S218 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:03
S220	261	S213 same S214	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:22
S221	9	S220 first adj (time\$1stamp\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:23
S222	4	S221 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:23
S223	21	(time\$1stamp\$4) near6 (date day) and (absolute adj time) and (relative adj time) and duration	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/24 09:29
S224	1	S223 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/24 09:29
S225	39	(time adj1 zone adj2 (chang\$4 progress\$4)) near9 ((display\$4) near2 time)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/02/25 09:37
S226	15	S225 @ad < "20040920"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/02/25 09:37
S227	12	"8301713"	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2013/05/22 10:58

			IBM_TDB			
S228	6975	455/566,567.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:01
S229	994	715/772.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:01
S230	7288	709/204.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:01
S231	74885	time adj stamp	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:07
S232	443022	time near5 display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:08
S233	501350	S231 or S232	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:08
S234	765903	time near3 (pass\$4 or difference or elaps\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:08
S235	16885	(consecutive or two or between) adj1 (message or response)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:09
S236	166	S234 adj10 S235	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:10
S237	6	S233 with S236	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:11
S238	47988	instant adj1 messaging	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:12
S239	24350	messaging adj1 system	US-PGPUB; USPAT; EPO; JPO; DERWENT;	AND	OFF	2013/05/22 11:13

			IBM_TDB			
S240	65794	S238 or S239	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:13
S241	142873	time adj1 information	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:13
S242	598296	S241 or S233	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:14
S243	60233	"10" same S232	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:14
S244	908	S240 same S242	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:15
S245	17	S234 same S244	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:16
S246	17	S245 not S237	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/22 11:17
S253	0	(time\$1stamp\$1 or stamp\$1) near6 (tomorrow or next adj day) near6 chang\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:49
S254	0	(time\$1stamp\$1 or stamp\$1) near9 (tomorrow or next adj day) near9 chang\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:50
S255	0	(time\$1stamp\$1 or stamp\$1) with (tomorrow or next adj day) with chang\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:50
S256	16	(time\$1stamp\$1 or stamp\$1) near6 (tomorrow or next adj day)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:51
S257	3	S256 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT;	AND	OFF	2013/05/29 10:51

			IBM_TDB			
S258	13	S256 not S257	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:54
S259	33	(time\$1stamp\$1 or stamp\$1) with (tomorrow or next adj day)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:56
S260	16589	709/206,207.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:56
S261	0	S259 and S260	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:56
S262	39	(time\$1stamp\$1 or stamp\$1) with (yesterday or previous adj day)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:58
S263	5	S262 and S260	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:58
S264	13	S262 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 10:59
S265	9	S259 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:16
S266	954682	(time\$1stamp\$1 or time) near6 chang\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:21
S267	2603	S260 S266	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:21
S268	3305	(time\$1stamp\$1) near6 chang\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:22
S269	48	S260 S268	US-PGPUB; USPAT; EPO; JPO; DERWENT;	AND	OFF	2013/05/29 11:22

			IBM_TDB			
S270	10	S269 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:23
S271	42	(time\$1stamp\$1) near6 chang\$4 near9 display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:32
S272	10	S271 @ad < "20030919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:32
S273	0	(time\$1stamp\$1) with (time adj progress\$4) with chang\$4 with display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:44
S274	1	(time\$1stamp\$1) with (time adj progress\$4) with display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/05/29 11:45
S275	11	"20030003504"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/25 18:51
S276	0	10/003504.app.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/25 18:52
S277	0	10/003504.apn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/25 18:52
S278	0	11/003504.apn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/25 18:52
S279	2	11/003504.app.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/25 18:53
S280	0	10/358759.apn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/25 18:56
S281	2	10/358759.app.	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2013/07/25 18:56

			IBM_TDB			
S282	1	WO 03/067497	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/07/25 19:02
S283	0	(visually present discussions adj2 data mining).ti.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2013/07/25 19:06
S284	239	"6484196"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2013/07/25 19:33
S285	62	S284 and frequenc\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2013/07/25 19:49
S286	1	S285 and (communication\$1 frequenc\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2013/07/25 19:50
S287	890	displ\$5 adj7 first adj7 time adj7 information	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/11/20 21:02
S288	6	S287 and instant adj7 messag\$4 adj7 conversation\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/11/20 21:03
S289	28	S287 and instant adj7 messag\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/11/20 21:04
S290	9	chang\$3 adj7 instant adj7 messag\$4 adj7 time\$1 and date\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/11/20 21:04
S291	4	S287 and instant adj7 messag\$4 adj7 time\$1 and date\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/11/20 21:05
S292	1649	instant adj7 messag\$4 adj7 time\$1 and date\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2013/11/20 21:06
S293	10	displ\$5 adj7 instant adj7 message\$1 adj7 time\$1 and date\$1	US-PGPUB; USPAT; EPO; JPO; DERWENT;	AND	ON	2013/11/20 21:06

			IBM_TDB			
S294	2	"20090070433"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/11/21 14:06
S295	1	S294 and (updat\$4 with (time or date))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/11/21 15:24
S296	2	time\$1stamp with yesterday	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/11/27 16:24
S297	2	"20020156800"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	AND	OFF	2013/11/27 16:27
S298	91755	time adj stamp	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:54
S299	277596	time near2 display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:55
S300	301846	(text\$4 or messag\$4 or conversation) near3 display\$\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:55
S301	355549	S298 S299	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:56
S302	301739	(text\$4 or messag\$4 or conversation) near3 display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:56
S303	9128	S301 with S302	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:56
S304	2146937	(mobile or cellular or wireless or portable or palm or cell or pervasive or handheld or smart or gps) adj2 (device or unit or phone or telephone or computer or terminal or station)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:57
S305	2355492	S304 or pda or laptop or notebook or iphone or ipod or blackberry	US-PGPUB; USPAT; EPO; JPO;	OR	ON	2013/12/03 17:58

			DERWENT; IBM_TDB			
S306	559	S303 with S305	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:58
S307	237581	(point\$4 or highlight\$4 or select\$4 or tap\$4 or tag\$4 or proximity) near4 (message or text)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:59
S308	22	S306 with S307	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 17:59
S309	5675	messag\$4 near2 conversation	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:00
S310	61	S309 near3 (screen or display\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:00
S311	622	S309 near3 (screen or display\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:00
S312	219805	(text or message) near5 (time or date)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:01
S313	166	S311 same S312	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:01
S314	26	S305 same S313	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:02
S315	26	S314 not S308	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:02
S316	68742	instant adj1 messag\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:03
S317	2097	S316 near3 conversation	US-PGPUB; USPAT; EPO; JPO;	OR	ON	2013/12/03 18:03

			DERWENT; IBM_TDB			
S318	268	S317 near5 display\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:04
S319	38	S318 with (time or date)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:05
S320	19	S319 not S314	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:05
S321	19	S320 not S308	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:05
S322	62415	no\$1 adj1 respon\$5	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:06
S323	33	S322 near5 S301	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:06
S324	0	S323 same S317	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:07
S325	80274	response adj1 message	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:08
S326	7	S317 same S325	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:08
S327	2	"20080147501"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/03 18:34

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2100	709/207.ccls.	USPAT	AND	OFF	2013/12/16 16:51

L2	113	klassen-gerhard\$.in.	USPAT	AND	ON	2013/12/16 16:51
L3	31	wormald- christopher\$.in.	USPAT	AND	ON	2013/12/16 16:52
L4	37	kuhl-lawrence\$.in.	USPAT	AND	ON	2013/12/16 16:52
S92	1637	709/207.ccls.	USPAT	AND	OFF	2012/06/20 19:49
S93	2533	709/207.ccls.	US-PGPUB; USPAT; UPAD	AND	OFF	2012/06/20 19:49
S94	235	klassen-gerhard\$.in.	US-PGPUB; USPAT; UPAD	AND	ON	2012/06/20 19:51
S95	62	klassen-gerhard\$.in.	USPAT	AND	ON	2012/06/20 19:51
S96	18	wormald- christopher\$.in.	USPAT	AND	ON	2012/06/20 19:55
S97	19	kuhl-lawrence\$.in.	USPAT	AND	ON	2012/06/20 19:56
S247	6274	709/206.ccls.	USPAT	AND	OFF	2013/05/22 11:02
S248	92	klassen-gerhard\$.in.	USPAT	AND	ON	2013/05/22 11:03
S249	25	wormald- christopher\$.in.	USPAT	AND	ON	2013/05/22 11:03
S250	26	kuhl-lawrence\$.in.	USPAT	AND	ON	2013/05/22 11:03
S251	114	S248 S249 S250	USPAT	OR	ON	2013/05/22 11:05
S252	22	S247 and S251	USPAT	OR	ON	2013/05/22 11:05

12/ 16/ 2013 4:58:26 PM

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(c) 2012 San Jose Mercury News
File 141:Readers Guide 1983-2011/Nov
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Set	Items	Description
S1	32499598	TIME OR TIMESTAMP? ? OR DATE? ? OR DATESTAMP? ?
S2	35985297	DAY OR DAYS OR YESTERDAY OR TODAY OR (HOUR? ? OR MINUTE? ? OR DAY? ? OR WEEK? ?)()AGO OR LAST()WEEK OR JUST()NOW
S3	1490959	S1:S2(3N)(UPDAT??? OR UP()(DATE? ? OR DATING) OR CHANG??? - OR MODIFY? OR MODIFI? OR ADJUST? OR ALTER???)
S4	12409	S3(5N)(AUTOMAT? OR (NO OR "NOT" OR WITHOUT OR T)(3W)(USER? ? OR HUMAN? ? OR PERSON? ?))
S5	896475	INSTANT()(MESSAG??? OR MESSENGER?) OR IM OR CHAT? ? OR CHA- TTING OR (ONLINE OR INTERNET OR WEB OR WWW)(3N)DISCUSSION?
S6	153	S4(100N)S5
S7	68	S6 NOT PY=2004:2014
S8	36	RD (unique items)
S9	1636	S3(3N)(LABEL? OR METADATA OR META()DATA)
S10	11	S9(7N)S4
S11	5	S9(100N)S5
S12	50	S9(100N)(EMAIL? OR (E OR ELECTRONIC)()MAIL?)
S13	64	S10:S12 NOT S7
S14	29	S13 NOT PY=2004:2014
S15	16	RD (unique items)

FULL-TEXT PATENTS

File 348:EUROPEAN PATENTS 1978-201346
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File 349:PCT FULLTEXT 1979-2013/UB=20131114|UT=20131107
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Set	Items	Description
S1	4361085	TIME OR TIMESTAMP? ? OR DATE? ? OR DATESTAMP? ?
S2	695215	DAY OR DAYS OR YESTERDAY OR TODAY OR (HOUR? ? OR MINUTE? ? OR DAY? ? OR WEEK? ?)()AGO OR LAST()WEEK OR JUST()NOW

S3 291406 S1:S2(3N)(UPDAT??? OR UP()(DATE? ? OR DATING) OR CHANG??? -
 OR MODIFY? OR MODIFI? OR ADJUST? OR ALTER???)
 S4 4647 S3(5N)(AUTOMAT? OR (NO OR "NOT" OR WITHOUT OR T)(3W)(USER?
 ? OR HUMAN? ? OR PERSON? ?))
 S5 1294959 INSTANT()(MESSAG??? OR MESSENGER?) OR IM OR CHAT? ? OR CHA-
 TTING OR (ONLINE OR INTERNET OR WEB OR WWW)(3N)DISCUSSION?
 S6 41 S4(100N)S5
 S7 10 S6 AND PY=1978:2003
 S8 6 S6 AND AY=1978:2003 AND AC=US
 S9 11 S7:S8
 S10 11 S4(5N)(LABEL? OR METADATA OR META()DATA)
 S11 1070 S3(5N)(LABEL? OR METADATA OR META()DATA)
 S12 8 S11(100N)S5
 S13 18 S10 OR S12
 S14 17 S13 NOT S9
 S15 114 (S4 OR S11)(100N)(EMAIL? OR (E OR ELECTRONIC)()MAIL???)
 S16 107 S15 NOT (S9 OR S14)
 S17 35 S16 AND PY=1978:2003
 S18 30 S16 AND AY=1978:2003 AND AC=US
 S19 42 S17:S18

PATENT ABSTRACTS

File 347:JAPIO Dec 1976-2013/JUL(Updated 20131024)

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File 350:Derwent WPIX 1963-2013/UD=201374

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? ds

Set	Items	Description
S1	6325757	TIME OR TIMESTAMP? ? OR DATE? ? OR DATESTAMP? ?
S2	388463	DAY OR DAYS OR YESTERDAY OR TODAY OR (HOUR? ? OR MINUTE? ? OR DAY? ? OR WEEK? ?)()AGO OR LAST()WEEK OR JUST()NOW
S3	285512	S1:S2(3N)(UPDAT??? OR UP()(DATE? ? OR DATING) OR CHANG??? - OR MODIFY? OR MODIFI? OR ADJUST? OR ALTER???)
S4	6326	S3(5N)(AUTOMAT? OR (NO OR "NOT" OR WITHOUT OR T)(3W)(USER? ? OR HUMAN? ? OR PERSON? ?))
S5	1126822	INSTANT()(MESSAG??? OR MESSENGER?) OR IM OR CHAT? ? OR CHA- TTING OR (ONLINE OR INTERNET OR WEB OR WWW)(3N)DISCUSSION?
S6	7	S4(30N)S5

S7 13 S4(100N)S5
 S8 392 S3(3N)(LABEL? OR METADATA OR META()DATA)
 S9 7 S8(7N)(AUTOMAT? OR (NO OR "NOT" OR WITHOUT OR T)(3W)(USER?
 ? OR HUMAN? ? OR PERSON? ?))
 S10 2 S8(100N)(EMAIL? OR (E OR ELECTRONIC())MAIL?)


NPL ABSTRACTS

File 8: Ei Compendex(R) 1884-2013/Nov W3
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 File 35: Dissertation Abs Online 1861-2013/Aug
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 File 95: TEMA-TECHNOLOGY & MANAGEMENT 1989-2010/OCTW3
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Set	Items	Description
S1	11213870	TIME OR TIMESTAMP? ? OR DATE? ? OR DATESTAMP? ?
S2	2762483	DAY OR DAYS OR YESTERDAY OR TODAY OR (HOUR? ? OR MINUTE? ? OR DAY? ? OR WEEK? ?)()AGO OR LAST()WEEK OR JUST()NOW
S3	313476	S1:S2(3N)(UPDAT??? OR UP())(DATE? ? OR DATING) OR CHANG??? - OR MODIFY? OR MODIFI? OR ADJUST? OR ALTER???)
S4	1637	S3(5N)(AUTOMAT? OR (NO OR "NOT" OR WITHOUT OR T)(3W)(USER? ? OR HUMAN? ? OR PERSON? ?))
S5	784777	INSTANT()(MESSAG??? OR MESSENGER?) OR IM OR CHAT? ? OR CHA- TTING OR (ONLINE OR INTERNET OR WEB OR WWW)(3N)DISCUSSION?
S6	7	S4 AND S5
S7	7	RD (unique items)
S8	1060	S3 AND S5

S9 606 S8 NOT PY=2004:2014
S10 320 S3(5N)(LABEL? OR METADATA OR META())DATA)
S11 0 S10 AND S5

Google:
instant message timestamp automatically updates
Jan 1, 1990 – Sep 30, 2003

Search Notes 	Application/Control No. 13615419	Applicant(s)/Patent Under Reexamination KLASSEN ET AL.
	Examiner MICHAEL C LAI	Art Unit 2457

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	206, 207	02/19/13	Lai
Inventor search		02/19/13	Lai
455	566, 567	12/16/13	Lai
715	772	12/16/13	Lai

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	02/19/13	Lai
EIC fast and focus search	02/20/13	Lai
EAST	05/29/13	Lai
Consulted Dalencourt for search	11/20/13	Lai
EAST	11/20/13	Lai
EIC fast and focus search	11/21/13	Lai
Consulted Alex Wang for search	11/26/13	Lai
WEST	12/03/13	Meky
Consulted Yves Dalencourt for search	12/10/13	Lai

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

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INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
709	207	12/16/13	Lai
Double patenting		12/16/13	Lai

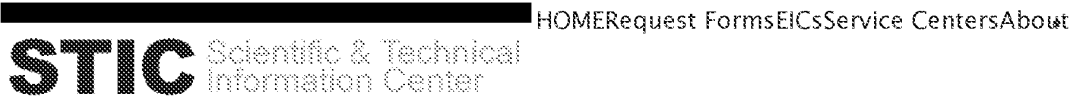
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Index of Claims 	Application/Control No. 13615419	Applicant(s)/Patent Under Reexamination KLASSEN ET AL.
	Examiner MICHAEL C LAI	Art Unit 2457

✓	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	02/25/2013	05/29/2013	12/16/2013					
1	1	✓	✓	=					
2	2	✓	✓	=					
3	3	✓	✓	=					
4	4	✓	✓	=					
5	5	✓	✓	=					
6	6	✓	✓	=					
7	7	✓	✓	=					
8	8	✓	✓	=					
9	9	✓	✓	=					
10	10	✓	✓	=					
11	11	✓	✓	=					
12	12	✓	✓	=					
13	13	✓	✓	=					
14	14	✓	✓	=					
15	15	✓	✓	=					
16	16	✓	✓	=					
17	17	✓	✓	=					



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Name: **Lai Michael C**
 Organization: **TC 2400**
 Art Unit: **2457**
 Employee Number: **83816**
 Office Location: **JEF-4D78**
 Phone Number: **(571)270-3236**
 Email: **MICHAEL.LAI@USPTO.GOV**

Request Detail -----

Attachment: **No**

Case/Application number: **13/615419 PALM**

Priority App. Filing Date: **09/19/2003**

Format for Search Results: **EMAIL**

Board of Appeals Case?: **Yes**

Synonyms:

instant messaging, time stamp, time information display changes

Describe this invention in your own words.:

A method of displaying an instant messaging conversation on a display of an electronic device, the method comprising:

displaying a conversation of instant messages;

displaying a first time information for an instant message in the conversation in response to a first input; and

automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information.

e.g., 7:44 pm today will be changed to "Nov 22 2013 7:44 pm" or "7:44pm yesterday" after mid-night today.

Terms to avoid:

Additional Comments:

This is a fast and focus search request.



See claim 1.

Request Date Thursday, November 21, 2013 8:37 AM

Make Another Request

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EICs ≡

Service Centers ≡

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- TM Problem Solving Toolkit
- USPTO's Website
- Office of Trademark Quality Review and Training (OTQRT)
- TMAS (Trademark Trial and Appeal Board)
- TMAB VIEW

FULL-TEXT NPL

8/3,K/1 (Item 1 from file: 275)
DIALOG(R)File 275: Gale Group Computer DB(TM)
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02669195 **Supplier Number: 96297384 (Use Format 7 Or 9 For FULL TEXT)**
Gates Tells Audience: Watch This Space; Microsoft chairman says company will focus on developing products that make Windows available to more users.

InformationWeek , NA
Jan 10 , 2003
ISSN: 8750-6874

Language: English **Record Type:** Fulltext

Word Count: 541 **Line Count:** 00047

...wristwatch based on Microsoft software called Smart Personal Objects Technology (Spot). The watch, which can **automatically change time zones**, receive **instant messages**, and display appointment reminders and current traffic conditions, runs on a 28-MHz processor from...

FULL-TEXT PATENTS

[no relevant results]

PATENT ABSTRACTS

[bad date, buy may cite earlier patents or NPL?]

7/3,K/3 (Item 3 from file: 350)
DIALOG(R)File 350: Derwent WPIX
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0018816437 *Drawing available*
WPI Acc no: 2009-F92491/200921

Related WPI Acc No: 2005-272183; 2010-E69562

User information managing system for e.g. Internet service provider, has processor omitting user while performing instant messaging presence management functions of instant messaging system

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: KARSTENS C K

Patent Family (1 patents, 1 countries)							
Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20090070433	A1	20090312	US 2008275224	A	20081121	200921	B
			US 2003674781	A	20030930		


Priority Applications (no., kind, date): US 2003674781 A 20030930; US 2008275224 A 20081121

Patent Details						
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
US 20090070433	A1	EN	18	8	Continuation of application US 2003674781	

Original Publication Data by AuthorityArgentina**Publication No. ...Claims:**to the selected one; a second date indicating when the particular user last received an **instant** message from the selected one; a second time period indicating a second inactivity period allowed... .. to be treated as expired, the second inactivity period corresponding to inactivity on inbound **instant messages** received by the particular user from the selected one; and a current expiration status of... .. different from the second time period in that one of the entries; upon sending an **instant message** from the particular user to any of the plurality of remembered **IM** users, **automatically updating** the first **date** in the entry corresponding to that remembered **IM** user to a current date and setting the current expiration status in the entry to... .. that the corresponding one of the remembered users is not yet expired; upon receiving an **instant message** by the particular user from any of the plurality of remembered **IM** users, **automatically updating** the second **date** in the entry corresponding to that remembered **IM** user to the current date and setting the current expiration status in the entry to... .. not yet expired; periodically evaluating the entries in the data structure to determine, for the **IM** client of the particular user, whether any of the plurality of remembered users should be...

NPL ABSTRACTS

[no relevant results]

Issue Classification 	Application/Control No. 13615419	Applicant(s)/Patent Under Reexamination KLASSEN ET AL.	
	Examiner MICHAEL C LAI	Art Unit 2457	

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47									
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	17												
2	2														
3	3														
4	4														
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15	15														
16	16														

/MICHAEL C LAI/ Examiner.Art Unit 2457 (Assistant Examiner)	12/16/2013 (Date)	Total Claims Allowed: 17	
/MICHAEL C LAI/ Examiner.Art Unit 2457 (Primary Examiner)	12/16/2013 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

IN THE UNITED STATES PATENT & TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No.: **13/615,419**
Applicant: **KLASSEN, Gerhard D. et al.**
Filed: **September 13, 2012**
Title: **Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment**
Art Unit: **2457**
Examiner: **LAI, Michael C.**
Docket No.: **70314/01061**

Board of Patent Appeals and Interferences
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

This is further to the Final Office Action dated June 5, 2013, the Notice of Appeal filed September 4, 2013, and Applicant's Response After Final Rejection filed October 16, 2013.

Applicant advises that the requisite fees are being submitted concurrently herewith.

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

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Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

REAL PARTY IN INTEREST

The real party in interest in the present application is Research in Motion Limited. An assignment from Applicant to Research in Motion Limited was registered with the office on reel/frame 029024/0779 on September 14, 2012.

RELATED APPEALS AND INTERFERENCES

The only related appeals or interferences known to the Appellant, Appellant's representative or assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal, are the appeals of related co-pending U.S. Application Nos. 13/111,734 and 13/111,706.

STATUS OF CLAIMS

In this application, claims 1-17 are pending and claims 1-17 have been finally rejected and are part of the pending appeal. Please refer to the Claims Appendix for a complete listing of the claims involved in this appeal.

STATUS OF AMENDMENTS

Amendments to claims 9 and 17 have been made subsequent to filing the Notice of Appeal, in Applicant's Response after Final Rejection dated October 16, 2013. The amendments to claims 9 and 17 were in accordance with the Examiner's suggestion to replace "displaying" with "display" for consistency. Accordingly, Applicant respectfully submits that the Claim Objections raised in the Final Office Action have been fully addressed and overcome and will not be further discussed in this Brief.

SUMMARY OF CLAIMED SUBJECT MATTER

In one aspect, as recited in independent claim 1, the claimed subject matter relates to a method of displaying an instant message conversation (see text on display 50 in FIGS. 4-10) on a display (50 – par. [0036], FIG. 1) of an electronic device (4, 104 – see FIGS. 1-3). The method comprises displaying a conversation of instant messages (72, 76 – see FIGS. 4-10), displaying a first time information (84, see FIG. 4) for an instant message (76 – see FIG. 4) in the conversation

(72, 76) in response to a first input (e.g., receipt of message, time elapsing, manual input, etc. – see FIGS. 4-10), and automatically changing (paragraphs [0052], [0054]) the first time information (76) for the instant message (72) to a second time information (e.g., change from “one minute ago” to “two minutes ago” – paragraphs [0052], [0054], as time progresses (paragraph [0054], line 4) and displaying the second time information instead of the first time information (paragraphs [0052], [0054] – e.g. progressively change the time that is displayed).

As recited in independent claim 9, the claimed subject matter also relates to an electronic device (4 – see FIGS. 1, 2) for displaying an instant message conversation (see text on display 50 in FIGS. 4-10). The electronic device (4) comprises a display (50 – see FIGS. 1, 4-10), a memory (56 – see FIG. 2), and a processor (52 – see FIG. 2) electronically coupled with the display (50) and the memory (56). The processor (52) is configured to: display a conversation of instant messages (72, 76 – see FIGS. 4-10), display a first time information (84, see FIG. 4) for an instant message (76 – see FIG. 4) in the conversation (72, 76) in response to a first input (e.g., receipt of message, time elapsing, manual input, etc. – see FIGS. 4-10), and automatically change (paragraphs [0052], [0054]) the first time information (76) for the instant message (72) to a second time information (e.g., change from “one minute ago” to “two minutes ago” – paragraphs [0052], [0054], as time progresses (paragraph [0054], line 4) and display the second time information instead of the first time information (paragraphs [0052], [0054] – e.g. progressively change the time that is displayed).

The claimed subject matter, in independent claim 17, also relates to a non-transitory computer readable medium (56, 60 – see FIG. 2) comprising computer executable instructions (60) embedded thereon for execution by a processor (52 – see FIG. 2) of an electronic device (4), such that when executed, the instructions cause the processor (52) to: display a conversation of instant messages (72, 76 – see FIGS. 4-10), display a first time information (84, see FIG. 4) for an instant message (76 – see FIG. 4) in the conversation (72, 76) in response to a first input (e.g., receipt of message, time elapsing, manual input, etc. – see FIGS. 4-10), and automatically change (paragraphs [0052], [0054]) the first time information (76) for the instant message (72) to a second time information (e.g., change from “one minute ago” to “two minutes ago” – paragraphs [0052], [0054], as time progresses (paragraph [0054], line 4) and display the second time information instead of the first time information (paragraphs [0052], [0054] – e.g. progressively change the time that is displayed).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-4, 9-12, and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Appelman (U.S. Patent No. 7,181,497) in view of Lapuyade (U.S. Patent No. 7,219,109).

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

B. Claims 5, 6, 13 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Appelman and Lapuyade in further view of Mathewson (U.S. Patent No. 7,305,441).

C. Claims 7, 8, 15 and 16 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Appelman and Lapuyade in further view of MacPhail (U.S. Patent No. 6,636,243).

Applicant maintains their previous arguments regarding the cited references and therefore respectfully traverses the Examiner's rejections as follows in the next section.

ARGUMENT

A. Claims 1-4, 9-12, and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Appelman (U.S. Patent No. 7,181,497) in view of Lapuyade (U.S. Patent No. 7,219,109). Applicant respectfully traverses the rejections as follows.

Grounds for Overturning the Final Rejections

As indicated in MPEP 2142: "the examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness." Furthermore, *In re Wamer*, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967) additionally held: "The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis."

The Examiner must provide a factual basis for each of the claimed features of a rejected claim. MPEP 2143.03 entitled "All Claim Limitations Must be Considered" states: "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In Re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)."

It is submitted that by failing to address all of the recitations of a rejected claim, the Examiner has not established a prima facie case of obviousness as such a deficiency fails to satisfy the evidentiary requirements articulated by the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007). For example, in *KSR*, the Supreme Court has explicitly said that: "...there must be some articulated reasoning with some rational underpinnings to support the legal conclusion of obviousness..." [see also MPEP 2141 and 2142]; one of the exemplary rationales that may support a conclusion of obviousness being: "(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention."

Applicant respectfully submits that, in view of the above, the Examiner has failed to establish

a *prima facie* case of obviousness.

Claimed Subject Matter

The present application describes and claims methods, computer readable media, and electronic devices, operable to balance the competing objectives of providing useful information (such as a time stamp for a particular message) and conserving space on the display (see paragraph [0050]), which is particularly important in handheld or wireless communication devices (see paragraph [0011] describing problem faced by Applicant, and paragraph [0057]). By enabling the displaying of time stamps in the way recited in claims 1, 9, and 17, these competing objectives can be balanced.

The present application also recognizes the advantages of providing particular time information in an instant messaging application, in particular circumstances. In one aspect, it has been recognized that a given time stamp may be a "smart" time stamp and provide additional information depending upon the prevailing circumstances. For instance, if the first time stamp of FIG. 4 was output as indicated above, and if the conversation was not resumed until the following day, the first time stamp potentially could be configured to automatically change from being displayed as "2:44 pm" on the day of communication of the non-responded-to message 80 to being displayed as, for instance, "2:44 pm Thursday" or, for instance, "2:44 PM September 17, 2004" or, for instance, "2:44 pm yesterday" on the following day (see paragraph [0052] and [0054] of the application as filed).

Also, such time stamps could be configured to be "active" time stamps and would change as time progressed. For instance, the time stamp could progressively change from saying "less than one minute ago" to saying "one minute ago", "two minutes ago", "forty-five minutes ago", and the like as time progressed (paragraph [0054]). Such a time stamp also could be configured, for instance, to revert back to displaying an absolute time after the expiration of a given time duration. For example, once the message is one hour old, for instance, the time stamp might be configured to no longer output a relative time such as "fifty-nine minutes ago", and rather to output an absolute time such as "2:54 pm".

Claim 1 recites in part:

"automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information" [emphasis added].

Applicant respectfully submits that none of the cited references, alone or in combination,

teach or suggest “automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information”, let alone as recited in claim 1.

Discussion Regarding Appelman

Appelman teaches a messaging application user interface that has an input element for receiving electronic messages and an output element for displaying electronic messages (e.g., see FIGS. 12-31). The messaging application user interface is implemented to, among other things, maintain a subset of a plurality of potential message recipients, auto-complete a partially entered address based on the partial list of potential message recipients, and modify auto-completion behavior using user-selectable signals.

Appelman may show a conversation screen (see FIG. 18) that includes multiple outgoing (T) and multiple incoming (F) messages. However, in Appelman, a timestamp is displayed with each message, and there is no discussion of having any of these timestamps altered, let alone: “automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information”. Appelman is entirely silent in that regard. Applicant respectfully submits that there is nothing in Appelman that would provide any motivation to perform such an operation, for at least the reason that Appelman fails to recognize, let alone address the problems faced by Applicant, as noted above.

Discussion Regarding Lapuyade

The Examiner acknowledges that Appelman fails to disclose: “changing the first time information for the instant message to a second time information as time progresses...” and cites Lapuyade as teaching what is missing from Appelman. Although Applicant believes that there is nothing in Appelman that would suggest such a modification, for the sake of argument, Applicant submits that Lapuyade still fails to teach what is missing from Appelman.

Lapuyade teaches a time zone management system for a date book like application. Although Lapuyade shows a prompt allowing the user to select an option to change to a new time zone, it is unclear to Applicant how such a feature would suggest automatically changing time information in an instant messaging conversation.

Changing time zone information is quite different from changing time information for a message in an instant messaging conversation. Time zones change as the device moves and thus

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

providing a prompt such as that shown in Lapuyade is understandable to enable the device to be displaying time related items according to that time zone, particularly for a date book application. In other words, timestamps associated with messaging are entirely different that absolute times generally associated with a location in which the device is operating. Applicant believes that the Examiner is reading too much into Lapuyade, particularly in suggesting that these teachings would cause a person skilled in the art to modify Appelman, particularly when Appelman does not mention changing timestamps (let alone automatically as recited in claim 1).

In contrast, changing time information for a message in an instant messaging conversation is entirely different from what was done in the prior art, for example, as shown in Appelman. In Appelman, a time stamp is recorded and displayed for each message. There is simply nothing that even hints at changing these time stamps, let alone as time progresses. Appelman is entirely silent in that regard.

Combination of References

The Examiner has acknowledged that Appelman does not teach or suggest: "automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information". Applicant submits that the Examiner has overlooked that Appelman has failed to recognize let alone teach automatically changing such a timestamp. As such, without the benefit of hindsight (which is not a proper basis for establishing a *prima facie* case of obviousness), there is nothing in Appelman that would lead a person skilled in the art to make such a modification to those teachings, let alone by referring to Lapuyade.

In any event, Lapuyade merely teaches changing a time based on a change in time zone. Lapuyade does not teach or suggest applying a change to a timestamp. In fact, it is unclear how a change in an absolute time, that is not necessarily tied to (or unique to) any particular piece of information, would be considered equivalent to making a specific, automatic change to a timestamp for a message in an instant messaging application as suggested by the Examiner. Applicant respectfully submits that such a leap of logic is improper and a person skilled in the art would not be lead to such a modification. Time changes due to time zone changes are much different that timestamps associated with specific messages.

As previously argued, at most, the two features would be used in the same device which provides nothing more than in addition to displaying time stamps for instant messages, the device can also prompt a user of a new time zone. Applicant believes the Examiner has erred in suggesting that a change in time zone suggests making changes to timestamps for messages.

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

If one considers the what causes the change to occur in Lapuyade, it is clear that the change in time zone is triggered by a change in location and is meant to update the local time. In contrast, claim 1 recites automatically changing a particular timestamp in order to intelligently convey when time has elapsed, thus making the timestamp more useful.

Neither Appelman nor Lapuyade have recognized the benefits of automatically changing a timestamp, let alone provided sufficient teachings to lead a person skilled in the art to make a modification to Appelman in the way suggested by the Examiner.

For at least these reasons, not only do Appelman and Lapuyade fail to teach each and every element in claim 1, there is not teaching, suggestion, or motivation to even consider the references together. Accordingly, Applicant respectfully submits that claims 1-4, 9-12, and 17 are patentable over Appelman in view of Lapuyade.

Conclusion

In view of the above remarks, Applicant respectfully submits that a *prima facie* case of obviousness has not been established for at least these reasons:

- i) Appelman and Lapuyade, even if combined, fail to teach or suggest: “automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information”; and
- ii) There is not teaching, suggestion, or motivation to modify Appelman in the way suggested by the Examiner, particularly in view of what is taught by Lapuyade.

For at least these reasons, Applicant respectfully submits that a *prima facie* case of obviousness has not been established. Similar arguments apply to claims 9 and 17 as well as those claims dependent on claims 1 and 9.

B. Claims 5, 6, 13 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Appelman and Lapuyade in further view of Mathewson (U.S. Patent No. 7,305,441). Applicant respectfully traverses the rejections as follows.

With respect to Mathewson, although Mathewson may be construed as suggesting outputting a duration of time, Applicant respectfully submits that Mathewson does not teach what is believed to be missing from Appelman and Lapuyade per the above and, as such, it is respectfully submitted that claims 5, 6, 13, and 14 are patentable over Appelman and Lapuyade, in further view

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

of Mathewson.

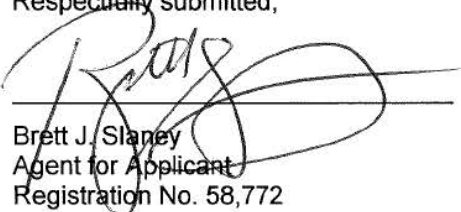
C. Claims 7, 8, 15 and 16 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Appelman and Lapuyade in further view of MacPhail (U.S. Patent No. 6,636,243). Applicant respectfully traverses the rejections as follows.

With respect to MacPhail, MacPhail teaches a system in which icons representing critical indicators are displayed in superposition with a reference shape. The reference shape is divided into "higher-interest" and "lower-interest" portions such that display of an icon over the higher-interest portion of the reference shape indicates a higher-interest value of the corresponding value. Although MacPhail may suggest displaying timestamps to indicate a change in status (e.g. according to a predetermined period of time), there is nothing in MacPhail that teaches or suggests what is missing from Appelman and Lapuyade per the above and, as such, it is respectfully submitted that claims 7, 8, 15, and 16 are patentable over Appelman and Lapuyade, in further view of MacPhail.

* * *

The Applicant therefore respectfully requests that this honorable Board of Patent Appeals and Interferences reverse the Examiner's decision in this case and indicate the allowability of claims 1-17 in this application.

Respectfully submitted,



Brett J. Slaney
Agent for Applicant
Registration No. 58,772

Date: October 30, 2013

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199 Bay Street
Suite 2800, Commerce Court West
Toronto ON M5L 1A9
Canada
Tel: 416-863-2425
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CLAIMS APPENDIX

Listing of the claims involved in the appeal:

1. (Previously presented) A method of displaying an instant messaging conversation on a display of an electronic device, the method comprising:
 - displaying a conversation of instant messages;
 - displaying a first time information for an instant message in the conversation in response to a first input; and
 - automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information.
2. (Original) The method of claim 1, wherein the first time information comprises an absolute time.
3. (Original) The method of claim 2, wherein the second time information further comprises additional information.
4. (Original) The method of claim 3, wherein the additional information comprises an indication of a day on which the instant message was sent.
5. (Previously presented) The method of claim 1, wherein at least one of the first time information and the second time information comprises a relative time.
6. (Original) The method of claim 5, wherein the second time information comprises an absolute time after expiration of a predetermined duration of time.
7. (Original) The method of claim 1, wherein the first time information is displayed for only a predetermined duration of time.
8. (Previously presented) The method of claim 1, wherein at least one of the first input and the second input comprises detecting a pointing device in proximity to the instant message.
9. (Previously presented) An electronic device for displaying an instant messaging

conversation, the electronic device comprising:

a display;

a memory; and

a processor electronically coupled with the display and the memory, the processor configured to:

display a conversation of instant messages;

display a first time information for an instant message in the conversation in response to a first input; and

automatically change the first time information for the instant message to a second time information as time progresses and display the second time information instead of the first time information.

10. (Original) The electronic device of claim 9, wherein the first time information comprises an absolute time.
11. (Original) The electronic device of claim 10, wherein the second time information further comprises additional information.
12. (Original) The electronic device of claim 11, wherein the additional information comprises an indication of a day on which the instant message was sent.
13. (Previously presented) The electronic device of claim 9, wherein at least one of the first time information and the second time information comprises a relative time.
14. (Original) The electronic device of claim 13, wherein the second time information comprises an absolute time after expiration of a predetermined duration of time.
15. (Previously presented) The electronic device of claim 9, wherein the first time information is displayed for only a predetermined duration of time.
16. (Previously presented) The electronic device of claim 9, wherein at least one of the first input and the second input comprises detecting a pointing device in proximity to the instant message.
17. (Previously presented) A non-transitory computer readable medium comprising computer executable instructions embedded thereon for execution by a processor of an electronic device such

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

that, when executed, cause the processor to:

display a conversation of instant messages;

display a first time information for an instant message in the conversation in response to a first input; and

automatically change the first time information for the instant message to a second time information as time progresses and display the second time information instead of the first time information.

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

EVIDENCE APPENDIX

NONE

Application No. 13/615,419
Reply to Final Rejection dated: June 5, 2013

RELATED PROCEEDINGS APPENDIX

NONE

Electronic Acknowledgement Receipt

EFS ID:	17263381
Application Number:	13615419
International Application Number:	
Confirmation Number:	2640
Title of Invention:	Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment
First Named Inventor/Applicant Name:	Gerhard D. Klassen
Customer Number:	91704
Filer:	Brett Joseph Slaney/Judith Martin
Filer Authorized By:	Brett Joseph Slaney
Attorney Docket Number:	70314/01061
Receipt Date:	30-OCT-2013
Filing Date:	13-SEP-2012
Time Stamp:	10:46:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	11144-US-CNT5_Appeal_Brief.pdf	629912 <small>9861c4d5d189f089d5d17322020a4e92f0fc6d5</small>	no	15

Warnings:

Information:

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

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

91704 7590 10/23/2013
Blake, Cassels & Graydon LLP
199 BAY STREET, SUITE 4000
COMMERCE COURT WEST
TORONTO, ON M5L 1A9
CANADA

Table with 1 column: EXAMINER

LAI, MICHAEL C

Table with 2 columns: ART UNIT, PAPER NUMBER

2457

Table with 2 columns: NOTIFICATION DATE, DELIVERY MODE

10/23/2013

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):

- rimpatent@blakes.com
brett.slaney@blakes.com
portfolioprossecution@blackberry.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 13/615,419	Applicant(s) KLASSEN ET AL.	
	Examiner MICHAEL C. LAI	Art Unit 2457	AIA (First Inventor to File) Status No

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

THE REPLY FILED 16 October 2013 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
- a) The period for reply expires _____ months from the mailing date of the final rejection.
- b) The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- c) A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires _____ months from the mailing date of the prior *Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
- Examiner Note:* If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. The Notice of Appeal was filed on 04 September 2013. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- a) They raise new issues that would require further consideration and/or search (see NOTE below);
- b) They raise the issue of new matter (see NOTE below);
- c) They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- d) They present additional claims without canceling a corresponding number of finally rejected claims.
- NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. Applicant's reply has overcome the following rejection(s): _____.
6. Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. For purposes of appeal, the proposed amendment(s): (a) will not be entered, or (b) will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
9. The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: The examiner maintained the final rejection.
13. Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). 06/21/2013
14. Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: .
- Claim(s) objected to: .
- Claim(s) rejected: 1-17.
- Claim(s) withdrawn from consideration: .

/MICHAEL C LAI/
Examiner, Art Unit 2457

Application No. 13/615,419

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Appl. No.: **13/615,419**
Applicant: **KLASSEN, Gerhard D. et al.**
Filed: **September 13, 2012**
Title: **Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment**
Art Unit: **2457**
Examiner: **LAI, Michael C.**
Docket No.: **70314/01061**

Mail Stop Amendment
U.S. Patent & Trademark Office
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

FIRST SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT

Pursuant to the duty to disclose under 37 CFR §1.56, Applicant submits herewith a Form PTO/SB/08 listing references of which the Applicant is aware and which are brought to the attention of the Examiner. In accordance with 37 CFR §1.98(a)(2), a copy of each foreign patent document and non-patent reference document listed in the enclosed Form PTO/SB/08 is submitted herewith.

Pursuant to 35 USC §120, this application relies on the earlier filing date(s) of the following prior application(s):

<u>Serial Number</u>	<u>Filing Date</u>
CONSIDERED: /M.L./13/111,675	May 19, 2011
CONSIDERED: /M.L./10/944,925	September 20, 2004

10/17/2013

The filing of this IDS shall not be construed as a representation that a search has been made, an admission that the information cited is, or is considered to be, material for patentability, or

22405488.1

Application No. 13/615,419

that no other material information exists. This filing shall not be construed as an admission against interest in any matter.

This IDS is being submitted pursuant to 37 CFR 1.97(d).

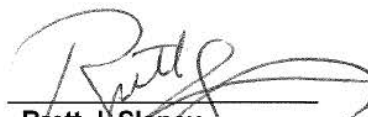
Applicant hereby certifies that each item of information contained in the present Information Disclosure Statement was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than 3 months prior to the filing of the present Information Disclosure Statement.

The fee amount prescribed under 37 CFR 1.17(p), pursuant to 37 CFR 1.97(d)(2), is to be paid by deposit account via EFS-Web. Should any additional fees be required the Office is authorized to charge Deposit Account No. **02-2553**.

Applicant respectfully requests consideration of the items listed and requests the Examiner to return a copy of the attached Form PTO/SB/08 after being marked as being considered by the Examiner.

Respectfully submitted,

Date: June 21/13


Brett J. Slaney
Registration No. **58,772**
Agent for Applicant

BLAKE, CASSELS & GRAYDON LLP
199 Bay Street
Suite 2800, Commerce Court West
Toronto, Ontario, M5L 1A9
Canada

Tel 416-863-2518
Fax 416-863-2653

BSL/jm

(✓) encl.

22405488.1

OK TO ENTER: /M.L./

Application No. 13/615,419
Amendment Dated: October 16, 2013
Reply to Office Action of: June 5, 2013

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Appl. No.: **13/615,419**
Applicant: **KLASSEN, Gerhard D. et al.**
Filed: **September 13, 2012**
Title: **Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment**
Art Unit: **2457**
Examiner: **LAI, Michael C.**
Docket No.: **70314/01061**

Mail Stop AF
U.S. Patent & Trademark Office
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE AFTER NOTICE OF APPEAL AND BEFORE FILING APPEAL BRIEF

Sir:

This is further to the Office Action dated June 5, 2013, and the Notice of Appeal filed on September 4, 2013. Applicant wishes to amend the above-identified application as follows:

Amendments to the Claims: are reflected in the listing of claims which begins on page 2 of this paper.

Remarks: begin on page 5 of this paper.

Application No. 13/615,419
Amendment Dated: October 16, 2013
Reply to Office Action of: June 5, 2013

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Appl. No.: **13/615,419**
Applicant: **KLASSEN, Gerhard D. et al.**
Filed: **September 13, 2012**
Title: **Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment**
Art Unit: **2457**
Examiner: **LAI, Michael C.**
Docket No.: **70314/01061**

Mail Stop AF
U.S. Patent & Trademark Office
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE AFTER NOTICE OF APPEAL AND BEFORE FILING APPEAL BRIEF

Sir:

This is further to the Office Action dated June 5, 2013, and the Notice of Appeal filed on September 4, 2013. Applicant wishes to amend the above-identified application as follows:

Amendments to the Claims: are reflected in the listing of claims which begins on page 2 of this paper.

Remarks: begin on page 5 of this paper.

Application No. 13/615,419
Amendment Dated: October 16, 2013
Reply to Office Action of: June 5, 2013

Amendments to the Claims

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

Listing of claims:

1. (Previously presented) A method of displaying an instant messaging conversation on a display of an electronic device, the method comprising:
 - displaying a conversation of instant messages;
 - displaying a first time information for an instant message in the conversation in response to a first input; and
 - automatically changing the first time information for the instant message to a second time information as time progresses and displaying the second time information instead of the first time information.
2. (Original) The method of claim 1, wherein the first time information comprises an absolute time.
3. (Original) The method of claim 2, wherein the second time information further comprises additional information.
4. (Original) The method of claim 3, wherein the additional information comprises an indication of a day on which the instant message was sent.
5. (Previously presented) The method of claim 1, wherein at least one of the first time information and the second time information comprises a relative time.
6. (Original) The method of claim 5, wherein the second time information comprises an absolute time after expiration of a predetermined duration of time.
7. (Original) The method of claim 1, wherein the first time information is displayed for only a predetermined duration of time.
8. (Previously presented) The method of claim 1, wherein at least one of the first input and the

Application No. 13/615,419
Amendment Dated: October 16, 2013
Reply to Office Action of: June 5, 2013

second input comprises detecting a pointing device in proximity to the instant message.

9. (Currently amended) An electronic device for displaying an instant messaging conversation, the electronic device comprising:

a display;

a memory; and

a processor electronically coupled with the display and the memory, the processor configured to:

display a conversation of instant messages;

display a first time information for an instant message in the conversation in response to a first input; and

automatically change the first time information for the instant message to a second time information as time progresses and ~~displaying~~ display the second time information instead of the first time information.

10. (Original) The electronic device of claim 9, wherein the first time information comprises an absolute time.

11. (Original) The electronic device of claim 10, wherein the second time information further comprises additional information.

12. (Original) The electronic device of claim 11, wherein the additional information comprises an indication of a day on which the instant message was sent.

13. (Previously presented) The electronic device of claim 9, wherein at least one of the first time information and the second time information comprises a relative time.

14. (Original) The electronic device of claim 13, wherein the second time information comprises an absolute time after expiration of a predetermined duration of time.

15. (Previously presented) The electronic device of claim 9, wherein the first time information is displayed for only a predetermined duration of time.

16. (Previously presented) The electronic device of claim 9, wherein at least one of the first input

Application No. 13/615,419
Amendment Dated: October 16, 2013
Reply to Office Action of: June 5, 2013

and the second input comprises detecting a pointing device in proximity to the instant message.

17. (Currently amended) A non-transitory computer readable medium comprising computer executable instructions embedded thereon for execution by a processor of an electronic device such that, when executed, cause the processor to:

display a conversation of instant messages;

display a first time information for an instant message in the conversation in response to a first input; and

automatically change the first time information for the instant message to a second time information as time progresses and displaying display the second time information instead of the first time information.

Application No. 13/615,419
Amendment Dated: October 16, 2013
Reply to Office Action of: June 5, 2013

REMARKS

Applicant wishes to thank the Examiner for reviewing the present application.

Claims 9 and 17 have been amended to replace "displaying" with "display" as suggested by the Examiner and to overcome the objections on page 4 of the Final Office Action. Applicant respectfully submits that such amendments are acceptable in accordance with 37 CFR 41.33 and fully address the claim objections. Applicant notes that the claim rejections raised in the Final Office Action will be addressed in the forthcoming Appeal Brief yet to be filed.

Applicant requests early reconsideration and allowance of the present application.

Respectfully submitted,



A handwritten signature in black ink, appearing to read "Brett J. Slaney", is written over a horizontal line. The signature is stylized and cursive.

Brett J. Slaney
Agent for Applicant
Registration No. 58,772

Date: October 16, 2013

BLAKE, CASSELS & GRAYDON LLP
199 Bay Street
Suite 4000, Commerce Court West
Toronto ON M5L 1A9
Canada

Tel: 416-863-2518
BS/

Electronic Acknowledgement Receipt

EFS ID:	17143200
Application Number:	13615419
International Application Number:	
Confirmation Number:	2640
Title of Invention:	Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment
First Named Inventor/Applicant Name:	Gerhard D. Klassen
Customer Number:	91704
Filer:	Brett Joseph Slaney/Sandy Barbieri
Filer Authorized By:	Brett Joseph Slaney
Attorney Docket Number:	70314/01061
Receipt Date:	16-OCT-2013
Filing Date:	13-SEP-2012
Time Stamp:	15:15:35
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		11144-US-CNT5_Response_after_notice_of_appeal_before_appeal_brief_as_filed_Oct_16_2013.pdf	161127 f20e48819040189c3cd2263f3e3b7b3ad83c61ac	yes	5

Multipart Description/PDF files in .zip description		
Document Description	Start	End
Amendment/Argument after Notice of Appeal	1	1
Claims	2	4
Applicant Arguments/Remarks Made in an Amendment	5	5
Warnings:		
Information:		
Total Files Size (in bytes):		161127
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>		

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/615,419	Filing Date 09/13/2012	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A	N/A	
<input type="checkbox"/> 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 \$ =	
<input type="checkbox"/> 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).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
			TOTAL	

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

APPLICATION AS AMENDED – PART II

AMENDMENT	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	10/16/2013	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	+ 17	Minus ** 20	= 0	X \$80 =	0
	Independent (37 CFR 1.16(b))	+ 3	Minus *** 3	= 0	X \$420 =	0
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))					
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					
					TOTAL ADD'L FEE	0

AMENDMENT	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	+	Minus **	=	X \$ =	
	Independent (37 CFR 1.16(b))	+	Minus ***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))					
	<input type="checkbox"/> 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.
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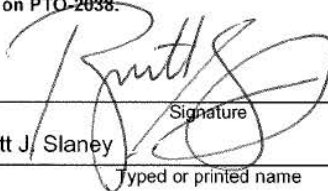
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LIE
/Timothy Cole/

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I hereby certify that this correspondence is being facsimile transmitted to the USPTO EFS-Web transmitted to the USPTO, or or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed name _____	In re Application of KLASSEN, Gerhard D. et al. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Application Number 13/615,419</td> <td style="padding: 2px;">Filed September 13, 2012</td> </tr> <tr> <td colspan="2" style="padding: 2px;">For Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment</td> </tr> <tr> <td style="padding: 2px;">Art Unit 2457</td> <td style="padding: 2px;">Examiner LAI, Michael C.</td> </tr> </table>		Application Number 13/615,419	Filed September 13, 2012	For Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment		Art Unit 2457	Examiner LAI, Michael C.
Application Number 13/615,419	Filed September 13, 2012							
For Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment								
Art Unit 2457	Examiner LAI, Michael C.							
Applicant hereby appeals to the Patent Trial and Appeal Board from the last decision of the examiner.								
The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))		\$ <u>800.00</u>						
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:		\$ _____						
<input type="checkbox"/> A check in the amount of the fee is enclosed.								
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.								
<input type="checkbox"/> The Director has already been authorized to charge fees in this application to a Deposit Account.								
<input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <u>02-2553</u>								
<input type="checkbox"/> A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.								
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.								
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<input type="checkbox"/> applicant/inventor.								
<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)		 Signature Brett J. Slaney Typed or printed name						
<input checked="" type="checkbox"/> attorney or agent of record. 58,772 Registration number _____		416-863-2518 Telephone number						
<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____		<u>Sep 4/13</u> Date						
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Electronic Patent Application Fee Transmittal

Application Number:	13615419			
Filing Date:	13-Sep-2012			
Title of Invention:	Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment			
First Named Inventor/Applicant Name:	Gerhard D. Klassen			
Filer:	Brett Joseph Slaney/Judith Martin			
Attorney Docket Number:	70314/01061			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
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Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent Appeals-and-Interference:				
Notice of Appeal	1401	1	800	800
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
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Electronic Acknowledgement Receipt

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Confirmation Number:	2640
Title of Invention:	Handheld Electronic Device and Associated Method Providing Time Data in a Messaging Environment
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Customer Number:	91704
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1	Notice of Appeal Filed	11144-US-CNT5_Notice_of_Appeal.pdf	77002 98287b0e29452813012d1e78eeeb89b34c363987	no	1

Warnings:

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2	Fee Worksheet (SB06)	fee-info.pdf	30258 1a22b8d21946e81ccec8e15a0bc91450ca22456c	no	2
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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

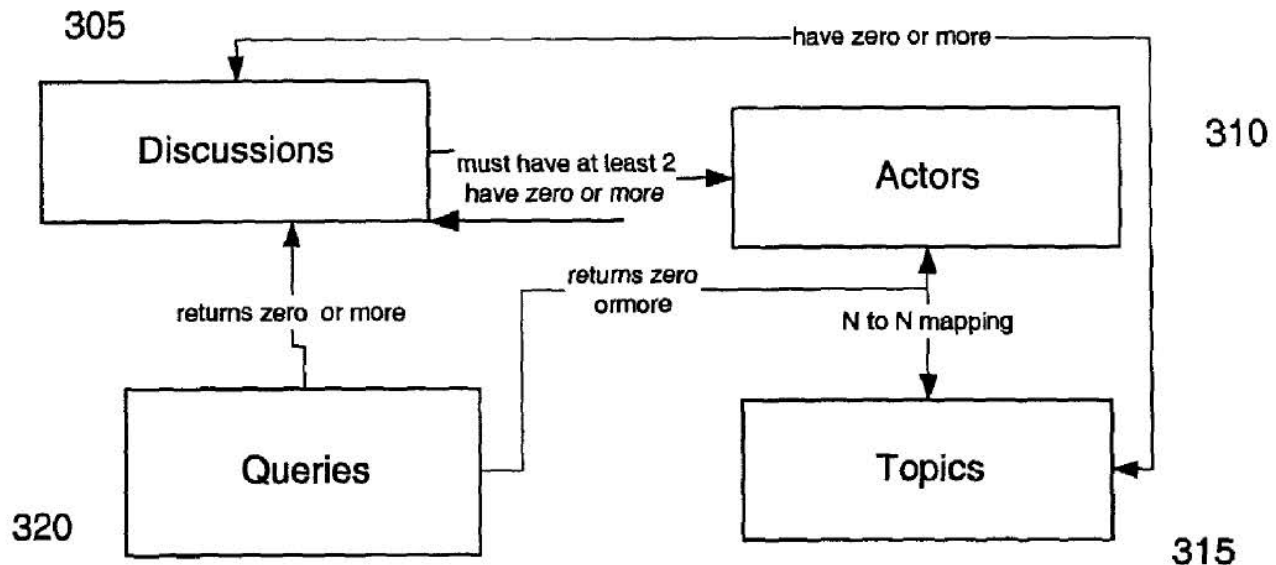
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(54) Titre : PROCÉDE ET DISPOSITIF DE PRESENTATION VISUELLE DE DEBATS A DES FINS D'EXPLORATION EN PROFONDEUR DE DONNEES
 (54) Title: A METHOD AND APPARATUS TO VISUALLY PRESENT DISCUSSIONS FOR DATA MINING PURPOSES



(57) **Abrégé/Abstract:**

A method of organizing information is disclosed. The method comprises providing a visualization of actor (310) communications in the context of one or more discussion (305), a discussion (305) including at least one actor (310) and at least one documented (310) communication.



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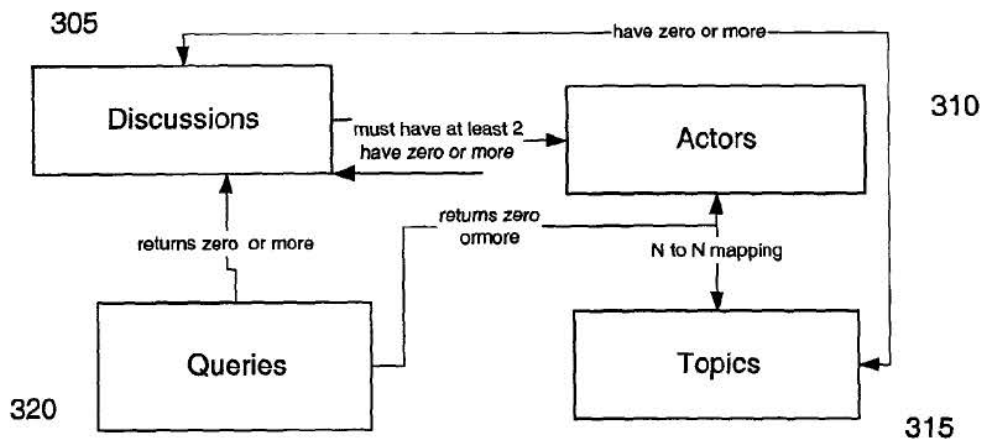
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(54) Title: A METHOD AND APPARATUS TO VISUALLY PRESENT DISCUSSIONS FOR DATA MINING PURPOSES



(57) Abstract: A method of organizing information is disclosed. The method comprises providing a visualization of actor (310) communications in the context of one or more discussion (305), a discussion (305) including at least one actor (310) and at least one documented (310) communication.

A METHOD AND APPARATUS TO VISUALLY PRESENT DISCUSSIONS FOR DATA MINING PURPOSES

FIELD OF THE INVENTION

[0001] The present invention relates to electronic documents, and more particularly to a method for visualizing the relationships among, and retrieving one more groups of documents satisfying a user-defined criterion or set of criteria.

BACKGROUND

[0002] The volume of electronic information in both personal and corporate data stores is increasing rapidly. Examples of such stores include e-mail messages, word-processed and text documents, contact management tools, and calendars. But the precision and usability of knowledge management and search technology has not kept pace. The vast majority of searches performed today are still keyword searches or fielded searches. A keyword search involves entering a list of words, which are likely to be contained within the body of the document for which the user is searching. A fielded search involves locating documents using lexical strings that have been deliberately placed within the document (usually at the top) with the purpose of facilitating document retrieval.

[0003] These data retrieval techniques suffer from two fundamental flaws. Firstly, they often result in either vast numbers of documents being returned, or, if too many keywords or attribute-value pairs are specified and the user specifies that they must all appear in the document, no documents being returned. Secondly, these techniques are able only to retrieve documents that individually meet the search criteria. If two or more related (but distinct) documents meet the search criteria only when considered as a combined unit, these documents will not be retrieved. Examples of this would include the case where the earlier draft of a document contains a keyword, but where this keyword is absent from the later document; or an e-mail message and an entry in an electronic calendar, where the calendar entry might clarify the context of a reference in the e-mail message. There is a clear need for a search technique that returns sets of related documents that are not merely grouped by textual similarity, but also grouped and sequenced according to the social context in which they were created, modified, or quoted.

[0004] This would make it possible to retrieve a very precise set of documents from a large corpus of data. Hitherto, with conventional search tools, this has only been possible by the use of complex search queries, and the results have been restricted to documents that individually meet the search criteria. It is desirable to be able to retrieve a precise set of documents from a large corpus of texts using relatively simple search queries. It would be of further benefit to present said documents in the context of causally related links (for example, a document containing the minutes of a board meeting has a causal link to an email announcing that meeting), even when those other documents do not, individually, satisfy the search criteria. This would relieve the user of the need for prior knowledge (before running the search) of such details as the exact date on which a message was sent, and who sent it. Existing search tools require such prior knowledge, because they do not establish causal links between documents.

SUMMARY

[0005] A method of organizing information is disclosed. The method comprises providing a visualization of actor communications in the context of one or more discussion, a discussion including at least one actor and at least one documented communication.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The present invention is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings and in which like reference numerals refer to similar elements and in which:

[0007] Figure 1 is a block diagram of one embodiment of a network, which may be used with the present invention.

[0008] Figure 2 is a block diagram of one embodiment of a computer system.

[0009] Figure 3 is a block diagram of navigation flow in one embodiment of the present invention.

[0010] Figure 4 is a block diagram of user-interface flow in one embodiment of the present invention.

[0011] Figure 5 is a screen shot of one embodiment of the participant graph.

[0012] Figure 6 is a screen shot of another embodiment of the participant graph, in which the time of day is represented.

[0013] Figure 7 is a screen shot of a form panel for adding items that were not originally part of the discussion being visualized.

[0014] Figure 8 is a screen shot of one embodiment of a participant graph, in which a pop-up showing basic information about the item is displayed.

[0015] Figure 9 is a screen shot of one embodiment of a document trail graph

[0016] Figure 10 is a screen shot of one embodiment of a money trail graph

[0017] Figure 11 is a screen shot of one embodiment a view that uses a color, pattern, or similar distinguishing mechanism which uses the color spectrum to help users to discern small shifts in the communication activity of a very large population of actors.

[0018] Figure 12 is a screen shot of one embodiment of an activity graph, which illustrates the amount of communication among actors over a user-specified period of time.

[0019] Figure 13 is a screen shot of one embodiment of a discussion timeline, in which each discussion appears as a rectangle of the length appropriate relative to its duration in the timeline.

[0020] Figure 14 is a screen shot of one embodiment of a discussion timeline, with a spider-eye panning widget to temporarily change the resolution of the discussion visualization.

[0021] Figure 15 is a screen shot of one embodiment of a discussion timeline, showing the individual events in the discussion.

[0022] Figure 17 is a screen shot of one embodiment of a graphical representation of a discussion timeline.

[0023] Figure 16 is a screen shot of one embodiment of a discussion cluster view.

[0024] Figure 18 is a screen shot of one embodiment of a transcript view, showing actor color-coding.

[0025] Figure 19 is a screen shot of one embodiment of a transcript view, showing actor activity.

[0026] Figure 20 is a screen shot of one embodiment of a transcript view, showing discussion partitions.

[0027] Figure 21 is a screen shot of one embodiment of a transcript view, showing actor and document-type color-coding.

[0028] Figure 22 is a screen shot of one embodiment of a transcript view, showing document attachments.

[0029] Figure 23 is a screen shot of one embodiment of a transcript view, showing color-coding of quoted text.

[0030] Figure 24 is a screen shot of one embodiment of a transcript view, showing that a deletion has occurred.

[0031] Figure 25 is a screen shot of one embodiment of a transcript view, showing Instant Messages (IMs).

[0032] Figure 26 is a screen shot of one embodiment of a query results view, showing discussion titles, discussion start and end dates, and actor images.

[0033] Figure 27 is a screen shot of one embodiment of a matrix query results view.

[0034] Figure 28 is a screen shot of one embodiment of the saved queries view.

[0035] Figure 29 is a screen shot of one embodiment of a tool for submitting user queries.

[0036] Figure 30 is a screen shot of one embodiment of a tool for submitting user queries, in which said tool allows the user to select types of actor involvement, and to use a saved query.

[0037] Figure 31 is a screen shot of one embodiment of a tool for submitting user queries, in which said tool allows the user to exclude certain actors from the query.

[0038] Figure 32 is a diagram of a query template (Template 1).

[0039] Figure 33 is a diagram of a query template (Template 2).

[0040] Figure 34 is a diagram of query templates (Templates 3 & 4).

[0041] Figure 35 is a diagram of query components.

[0042] Figure 36 is a screen shot of one embodiment of a Venn diagram view of document categories.

[0043] Figures 37a – 37c are screen shots of one embodiment of Query by Example (QBE).

[0044] Figure 38 is a screen shot of one embodiment of the document lifecycle view.

[0045] Figure 39 is a screen shot of one embodiment of a user interface for viewing discussions on a PalmOS-based mobile device.

[0046] Figure 40 is a screen shot of one embodiment of the master window view of the case management user interface.

DETAILED DESCRIPTION OF THE INVENTION

[0047] A method and apparatus for visualizing both the electronic paper trails referred to as “discussions” and the statistical anomalies and patterns that are directly computable from these discussions is disclosed. A discussion in this context is a heterogeneous set of causally related communications and events for which either electronic evidence exists, or can be created to reflect. Thus, a discussion provides a means of reviewing a series of related events that occurred over time. One example of generating such discussions from raw communications data is discussed in more detail in copending Application Serial No XXX, entitled “A Method and Apparatus for Retrieving Interrelated Sets of Documents”, filed concurrently herewith (hereinafter referred to as ‘An Apparatus for Sociological Data Mining’). The visualizations and user interface tools described in this application greatly facilitate the efficient and effective review and understanding of such chains of events.

[0048] The views described in the following sections provide both graphic visualizations, as well as a means of navigating through the complex chains of communications and events that comprise the data being visualized. These views may be offered to the user in a Model View Controller (MVC) graphical user interface, or via a web-based application.

[0049] The present invention will typically be used in conjunction with a computer network. Figure 1 depicts a typical networked environment in which the present invention operates. The network **105** allows access to email data stores on an email server **120**, log files stored on a voicemail server **125**, documents stored on a data server **130**, and data stored in databases **140** and **145**. Data is processed

by an indexing system **135** and sociological engine **150**, and is presented to the user by a visualization mechanism **140**. The visualization mechanism **140** is described in more detail in the present application.

[0050] The present invention is for use with digital computers. Figure 2 depicts a typical digital computer **200** on which the present system will run. A data bus **205** allows communication between a central processing unit **210**, random access volatile memory **215**, a data storage device **220**, and a network interface card **225**. Input from the user is permitted through an alphanumeric input device **235** and cursor control system **240**, and data is made visible to the user via a display **230**. Communication between the computer and other networked devices is made possible via a communications device **245**.

[0051] It will be appreciated by those of ordinary skill in the art that any configuration of the system may be used for various purposes according to the particular implementation. The control logic or software implementing the present invention can be stored in main memory **250**, mass storage device **225**, or other storage medium locally or remotely accessible to processor **210**.

[0052] It will be apparent to those of ordinary skill in the art that the system, method, and process described herein can be implemented as software stored in main memory **250** or read only memory **220** and executed by processor **210**. This control logic or software may also be resident on an article of manufacture comprising a computer readable medium having computer readable program code embodied therein and being readable by the mass storage device **225** and for causing the processor **210** to operate in accordance with the methods and teachings herein.

[0053] The present invention may also be embodied in a handheld or portable device containing a subset of the computer hardware components described above. For example, the handheld device may be configured to contain only the bus **215**, the processor **210**, and memory **250** and/or **225**. The present invention may also be embodied in a special purpose appliance including a subset of the computer hardware components described above. For example, the appliance may include a processor **210**, a data storage device **225**, a bus **215**, and memory **250**, and only rudimentary communications mechanisms, such as a small touch-screen that permits the user to communicate in a basic manner with the device. In general, the more special-purpose the device is, the fewer of the elements need be present for the device to function. In some devices,

communications with the user may be through a touch-based screen, or similar mechanism.

[0054] It will be appreciated by those of ordinary skill in the art that any configuration of the system may be used for various purposes according to the particular implementation. The control logic or software implementing the present invention can be stored on any machine-readable medium locally or remotely accessible to processor 210. A machine-readable medium includes any mechanism for storing or transmitting information in a form readable by a machine (e.g. a computer). For example, a machine readable medium includes read-only memory (ROM), random access memory (RAM), magnetic disk storage media, optical storage media, flash memory devices, electrical, optical, acoustical or other forms of propagated signals (e.g. carrier waves, infrared signals, digital signals, etc.).

[0055] Navigation among views is facilitated by the fact that all of the viewable entities have very close relationships to one another, as depicted in Figure 3. The user can submit queries **320**, which return discussions **305**. Each discussion must contain at least two actors **310**. Each of the actors **310** about whom the user can submit queries **320** must appear in zero (0) or more discussions **305** (an actor can appear in 0 discussions by being connected in some way with a singleton document which, by definition, is not part of a discussion). An actor **310** can be associated with multiple topics **315**, and vice versa. Each discussion **305** can be associated with multiple topics **315**, and vice versa.

[0056] Hence, for example, in a view depicting discussions, the user can generally click on an image representing an actor to see additional information about this actor, and vice versa.

[0057] More generally the usage of the user interface flows as shown in Figure 4. A user submits a query **320** using either Query by Example **405**, Multi-evidence Query User Interface **410**; Query Language **415**; Canned Query Templates **420**, Visual Query Interface **425**, or Query Building Wizard **430**. The resulting query specifies at least one of a number of parameters, including but not limited to actors, time, topic, related events, communication type, specific documents and work-flow processes. Additionally, the system allows the user to submit queries in natural language format.

[0058] The results may comprise singleton documents **425**, discussions **305**, actors **310**, statistics **440** and topics **315**. Results are displayed in one or more

of the formats appropriate to the results content and shown in Figure 4. Thus, singleton documents are displayed in tabular list view. Discussions are displayed as a participant graph, overview graph, transcript view, question and answer list, matrix view, cluster view, or tabular list view. Actors are displayed in an activity graph, participant graph, actor profile, matrix view, tabular list view or cluster view. Statistics are displayed as an activity graph as a profile view (for example, actor profile view or data set profile view), or as a Venn diagram. Topics are displayed as an activity graph, Venn diagram, overview graph, matrix view or tabular list view. These views are discussed in more detail below with respect to other Figures.

[0059] Views:

- **Participant Graphs:** graphs that connect the actions of a certain set of participants as related to one or more discussions
- **Activity Graphs:** comparative or individual graphs that indicate the historical communication or collaboration activity over time among various actors.
- **Overview Graphs:** diagrams that contain data on one or more discussions, documents, topic discussion, or other aggregate behavior.
- **Document Trail Graphs:** diagrams that display data tracing the lifecycle of a document or group of documents, including but not limited to such events as document revisions, check-ins and transmissions.
- **Money Trail Graphs:** diagrams that chart the flow of money, based on information gleaned from a discussion.
- **Transcript View Variations:** any primarily text-oriented view that lays out a sequence of events and/or communications
- **Object Lifecycle Views:** views that are focused on the electronic data objects, rather than on the actors.
- **Animation:** description of different ways that interactive or animated aids or trial art could be generated from any of the above.

[0060] Related Materials include:

- **Querying Tools:** any view that can serve the purpose of generating a query, including some of the above

- **Case Management Application**
- **Query Language**
- **Mobile, Voice & Related Applications**

Participant Graphs

[0061] Participant graphs shown in Figures 5-8 represent the set of communication items which belong to a particular discussion, or in some embodiments, multiple discussions.

[0062] Figure 5 is a screen shot showing one embodiment of the participant graph for a fragment of a discussion, showing the actors involved and the various communications that took place between the actors during the discussion fragment. Each actor is denoted by a unique icon **545**, which in this example is a photograph or some other graphical representation of the actor. In other embodiments, a textual representation of the actor (for example, the actor's name) could be used. Communications are denoted by connections **540** between actors. In this example, three communication types are shown: documents, email and instant messages, each of which is denoted by a unique color code, pattern, icon, or other distinguishing mechanism. A legend **550** at the top-right of the screen shot indicates the meaning of each color, and of each of four icons that are used to label the connections. These icons, when clicked on, allow the user to view communication content, view the communication type, receive more information about the communication (for example, the exact time at which it was created), and obtain help. A timeline **505** allows the user to see the date and time at which each transaction in the discussion took place. By interacting with a content icon **510**, the user can see the content of any document and the time when the transaction took place. A type icon **515** allows the user to see information about the transaction type and/or document type. A 'more info' icon **520** allows the user to see basic information about the transaction. A clock icon **525** allows the user to see the precise time at which the transaction took place. The system may further display a popup **530**, which shows a chronological list of the transactions in which the current actor participated within the current discussion. For one embodiment, the popup **530** is displayed when the user clicks on an actor's icon **545**. In one embodiment, the personality (or personalities) of a given actor that participated in a discussion can be displayed.

[0063] Figure 6 shows a screen shot of a participant graph similar to that shown in Figure 5. Additionally, it uses background color **610** and a series of

time-of-day icons **615** at the top of the screenshot to denote the time of day at which the communication was created. In Figure 6, the user has positioned the mouse cursor close to the 'more info' icon **520**, thereby causing a popup window **605** to be displayed containing basic information about the transaction. In one implementation, a panning widget **630** allows the user to navigate forwards and backwards within the discussion using the time-of day bar **620**. In one implementation, a drop-down list box **625** allows the user to switch between different time zones, thereby adjusting the alignment of the discussion with the time-of-day icons **615**.

[0064] Figure 8 shows a screen shot of a participant graph similar to those shown in Figures 5 and 6. Additionally, it shows a toolbar **810** at the top of the screen that allows the user to select between different discussion views: activity, participant (shown here), and transcript. A second toolbar **815** provides buttons to allow the user to carry out the following actions: to zoom in on a particular part of the discussion, thereby showing the elements of said discussion in greater detail; to pan between different sections of the discussion; to filter the discussion on criteria that may include (but are not limited to): actor, communication type and time; to adjust the view of the discussion based on time span; to print the discussion or the contents of the graphical view; or to define new events to add to the view. In this screen shot, the user has hovered the mouse over the link **540** between two actors, thereby causing a popup **605** to be displayed. The popup **605** contains further details about the communication over whose link the user is hovering the mouse. A user interface navigation mechanism **830** at the bottom of the page allows the user to control which section of the discussion is displayed on screen. A pair of drop-down list boxes **825** allows the user to control the discussion display through the use of filters. An icon **820** and vertical dotted line **835** indicate the occurrence of a significant event (in this example, a board meeting) during the period displayed.

[0065] Participant graphs show the images **545** of the actors participating in a discussion, and the links **540** between the transactions in which they participated. Participant graphs may display a timeline **505** to show when user activity occurred, and may also display a background **610** in varying shades in order to represent daytime and nighttime activity. Participant graphs can optionally be limited to a partition of a discussion, or to only include certain specific actors of interest, either individually or by some property such as organization. It may also be limited to displaying only those actors who played an active rather than passive

role in the items in question, where “active” is defined as initiating one or more of the items . In one embodiment of the invention, the user may set a threshold value for how active the actor had to have been in the discussion in order to be displayed, based on measures including, but not limited to, the number of items in the discussion initiated by that actor, the importance of these items ; whether any were “pivotal” as described in ‘An Apparatus for Sociological Data Mining’. For one embodiment, if an actor has been filtered out, but was responsible for initiating a transaction, a small icon containing “..” is displayed in lieu of the regular actor icon. Clicking on this icon expands that instance to the form of the regular icon for that actor. Alternatively, the actor may be identified in other ways including, but not limited to, a smaller icon, or a browned out icon.

[0066] In this view, each items is depicted as a line connecting two or more actors. The color of the line indicates the type of item. Choices include, but are not limited to:

- Email
- Instant Message
- Sending a document (as an attachment in email)
- Phone call (one version with transcript, one without)
- Voicemail (presuming that it had been processed by a speech to text indexer)
- Wire or other funds transfer
- Fax
- Sending/Receipt of FedEx or other electronically trackable package

[0067] Actors **545** may be individuals, or they may be aggregate actors. Examples include an organization, the executive team, or de facto actor group such as a “circle of trust” as defined in ‘An Apparatus for Sociological Data Mining’. A group mail alias would also be considered an aggregate actor. In some cases, an actor might be a system or automated process, for example, a daemon that sends out a particular status message. Actors may be represented by actual photographs **3810** of themselves when available. Alternately, the user may choose a graphic representation for each actor by choosing from a canned library of images, or adding any electronic image that they wish. Once selected, the same image is used to represent this actor visually throughout the entire system.

[0068] If an actor has more than one distinct personality (as defined in 'An Apparatus for Sociological Data Mining' patent), in some embodiments of the invention, the user has the option to use a different image or graphic for each such personality. If the user opts not to do this, where multiple personalities exist the system will use the one graphic provided to represent all personalities, but will tint the image with different colors in order to allow the various distinct personalities to be readily identified. The user may globally specify the color scheme to be used in such cases; for example, the primary personality will always be tinted blue.

[0069] The graph is represented as a timeline of events; the resolution can be increased or decreased using zoom in and out controls. In one embodiment, daytime and nighttime hours are indicated by a change in background color; as shown in Figure 6. In some embodiments, icon markers **615** indicating time of day may also be used; as shown in Figure 6. Icons may optionally be displayed that indicate the document type of the transaction in those cases where it is appropriate, for example, to indicate that the document being sent was an Excel spreadsheet rather than a Microsoft Word document. In the event that there are multiple documents attached, each appropriate document type icon is displayed. In another embodiment, a multiple document type icon is displayed, which depicts a stack of overlapping rectangles. In one embodiment, the system provides a different visualization for documents which were attached as opposed to incorporated by reference with a URL or something similar. Rolling the mouse over or near any of the transaction lines will bring up a pop-up **605** with basic information about the transaction (Figure 6). The exact types of information vary by transaction type, but include, as appropriate, the following:

- Originating timestamp and timezone
- Originating geographic location
- Wire transfer amount
- Length of phone call or voicemail message
- Subject or title
- Sensitivity level
- Urgency or priority
- Ending timestamp and timezone
- Return of read receipt timestamp

[0070] Alternately, the user may click on the small icon to get only the timestamp details. In one embodiment, right-clicking on this icon provides an immediate chronology of events just before and after the item in question with timestamp information. This is to help clarify which event preceded which, in those cases where the events were almost contemporaneous. The “content” icon can be used to pull up the content of the document involved in the transaction. In one embodiment, there is also optionally a “More info” icon that can be configured to display other types of data that are appropriate. Examples of such data include, but are not limited to: prior user annotations about the transaction, its retrieval history, or the relation of that transaction to a known workflow pattern.

[0071] In one embodiment, actors are shown partially grayed out if their presence in the transaction was likely, but could not be verified solely on the basis of the electronic evidence. One example of this is the case of a meeting entry pulled from an online group calendar which asserts that Joe, Jack, and John will be present at the meeting. Without other supporting evidence, such as meeting minutes indicating that all parties were present, it cannot be definitively asserted that all three men attended the meeting.

[0072] Mousing over an actor icon will bring up a pop-up with the basic information available on that actor. This includes, but is not limited to, the following:

- Full name
- Title
- Organization
- Primary electronic identity
- Electronic identity conducting the transactions whose lines connect to this icon (if different than the primary)

[0073] Clicking on an actor icon brings up a panel with a chronological list **530** (shown in Figure 5) of the transactions this actor participated in within the discussion(s) being visualized.

[0074] In one embodiment, the user interface allows the user to add items that were not originally part of the discussion being visualized. This is done through filling out a form panel, shown in Figure 7, in the user interface, specifying all of the information that would have been associated with an actual item.

[0075] Figure 7 is a screen shot of a form panel for adding items that were not originally part of the discussion being visualized. The panel displays the

discussion title **705**, start date **710** and end date **715**, and actors **720** involved. A text box **725** allows the user to enter a label for the item to be added. In one embodiment, this text box **725** is replaced with a dropdown listbox, combo box, or other user interface tool for adding an item from a preconfigured or dynamically generated list. A series of option buttons **730** allow the user to specify the type of item to be added. After an item is added, it would be shown on the participant graph. For one embodiment, items added by a user are flagged in the participant graph, to indicate their nature. For another embodiment, the information that an item has been added can be obtained using the 'info' icon **520**.

[0076] In one embodiment, the view is implemented as a canvas, so the user may drag and drop shapes, lines, and text on it as they please. In one embodiment, such additions are checked for semantic correctness. For one embodiment, added events are indicated by color, patterns, icon, or some other indicator.

[0077] Events of interest are depicted as icons above or below the canvas from which vertical lines extend, cutting across the canvas at the appropriate point in the X axis. These events fall into one or more of the following categories:

- An event belonging to the discussion, but which is not directly a transaction among its actors. For example, a milestone in a workflow process.
- An event extracted from one of the online calendars of the primary actors in the discussion.
- An event entered manually in the UI by the user

[0078] A canned library of icons to represent common concepts like "meeting" may be provided in the UI; the user may elect to add and use their own images as well. The user may also add descriptive text about the event. This text would appear when the user clicks on the icon representing that event.

[0079] In one embodiment of the invention, numerous animation utilities are provided in order to make the visualizations more vivid. Animation can help accentuate the involvement of certain actors of special interest; it can also highlight the accelerating or decelerating pace of the transactions. Types of animation provided in one embodiment of the invention are as follows:

- Rendering the transaction lines and actor icons individually, in the order and timing in which they occurred, according to a condensed timeline

appropriate for viewing in generally less than one minute. This emphasizes the lag time (or lack thereof) between contiguous transactions.

- Similarly, but partially graying out, via compositing or other techniques, all transaction lines rather than not rendering them until their appropriate place in the timeline.

[0080] The layout algorithm for the view can be implemented with a number of commonly available graphing libraries. In one embodiment of the invention, a limit of 8 line connections per actor icon is imposed for readability purposes. For one embodiment, should additional connections be necessary in order to represent the underlying data, a second actor icon will be drawn to accommodate the additional lines. Note that while the graph generally follows a left to right timeline, a reply to an email message or IM will show a line going backwards to indicate that the transaction is a reply to a previous transaction, and that these two transactions should be considered part of a single nested transaction.

[0081] However, from an adherence to the timeline perspective, the placement of the two (or more) actor icons involved will be approximately at the start and end time of the nested transaction. If needed, additional actor icons will be rendered to ensure it. Since the purpose of the visualization is to provide an overview of the related transactions in a discussion, exact centering of the actor icons around the relevant line in the X axis is not considered essential. Exact event chronology information can be had from the ancillary panels that are only a single click away. In one embodiment of the invention, transaction lines are represented with directional arrows. In one of these embodiments, a “reply to” can be indicated with a line that has arrows on both ends; if there were N replies, the number N would be rendered near the appropriate arrow.

[0082] Finally, in one embodiment of the invention, the participant graph view can be used modally as a visual querying interface. The user may select a transaction by selecting its objects with a marquis tool, and generate a Query by Example (QBE) query. One example of QBE queries that may be used with this system is defined in ‘An Apparatus for Sociological Data Mining’. The user may also select individual actor icons in order to see all transactions involving all of these actors.

[0083] Other accompanying UI widgets and tools include, but are not limited to, the following. A panning widget **620**, shown in Figure 6. This widget **620** utilizes a thumbnail image of the full discussion transcript view, shrunk to whatever length necessary to fit in the visible view. The participant graph automatically scrolls to the position indicated by the panning widget **620**, making it especially useful for viewing discussions of long duration. Daytime and night-time hours are indicated in the thumbnail, allowing the user to easily detect, for example, anomalously high amounts of communications after standard or usual working hours. In one embodiment, nighttime starts at 5:00PM in the primary time zone, or some other pre-configured time, and any communications or events after that time are distinguished, for example by being colored darkish gray. In another embodiment, a gradient fill is used to indicate rough time of day, as shown in Figure 6. In one embodiment, communication and events occurring during weekends or holidays are coded, for example by being colored pink. For one embodiment, the time zone defaults to the one in which the greatest amount of transactions occurred; times from other time zones will be normalized to this time zone. In one embodiment, there is a control **625** above the panning widget allowing the user to change the default time zone used by the panning widget **620**. In another embodiment, parallel instances of the thumbnail will be drawn for each time zone from which transactions originated. One panning widget extends across all of the thumbnails. In a different embodiment, the transcript view elements being thumbnailled are color-coded according to initiating actor rather than time of day. In yet another embodiment, these items are color coded by topic.

“Rainbow” View

[0084] To visualize really large volumes of discussions, or individual messages, a different approach to the visualization is necessary. Figure 11 is a screen shot showing one embodiment of the activity graph for a discussion. The user has selected this view of the discussion using the tool bar **810**. This view shows the level of activity over time in two ways: as a line graph **1120**, and as a diagram **1125** in which levels of communication activity are denoted by colors of the rainbow. In this embodiment, a legend **1130** explains the meaning of the colors. An icon **820** and vertical dotted line **835** indicate the occurrence of a significant event (in this case, a board meeting). A toolbar **815** and navigation mechanism **830** as

shown in Figure 8, are also shown. A slider **1115** allows the user to create a different viewable span on the canvas.

[0085] The rainbow view uses a color, pattern, or similar distinguishing mechanism which uses the color spectrum to help users to discern small shifts in the communication activity of a very large population of actors. Specifically, this view is used to pinpoint the amount of communication on specific topics. It is accompanied by a graph below which allows the assignation of numerical values to the colors used in the spectrum view. Maximum density is determined by historical values over the same time span and same or comparable population.

Activity Graphs

[0086] Activity graphs are used to illustrate the amount of communication among a small set of actors over a user-specified period of time. They may optionally be additionally constricted by topic. Actor sets may be specified in any of the following ways:

- Manual specification of particular actors through the user interface.
- Manual specification of one or more actors, with the checkbox enabled to include the “circle of trust.”
- Manual specification of one or more aggregate actors which may then be expanded in the view.

[0087] Figure 12 is a screen shot showing one embodiment of the activity graph for a discussion. Lines **1220** linking actor images **545** are terminated with boxes **1215** showing the number of communications that took place between the actors. In one embodiment, each actor is represented by both an image or other icon **545** and a text item **1205** containing the name of the actor. A legend **1225** shows the mapping between colors and levels of communication activity. For each pair of actors, where actor A has sent more communications to B than B has sent to A, the connecting line **1220** has two colors, and the portion of the line adjoining each actor represents the number of communications sent by that actor to the other actor of the pair. Where each of the two actors has sent a comparable number of communications to the other, the line **1220** connecting the two actors has a single color throughout its length. A number **1215** at each end of each connecting line shows the exact number of communications that the actor at that end of the line **1220** has sent to the actor at the other end of the line **1220**. The user can invoke a communication profile popup window **1210**. In one embodiment the popup window

1210 is invoked by double-clicking on the line **1220** connecting actor images **545**. The popup window **1210** provides additional data about the communications, including average communications length and depth, and document types exchanged. For one embodiment, any anomalies noted by the system are also flagged.

[0088] Referring to Figure 12, Each individual or aggregate actor is represented by an image provided or selected by the user. There is at most one line **1220** connecting any two actors in the activity graph. For one embodiment, a single line is used to indicate all communication between actors, in both directions. The direction of the arrows at the ends of the line indicate which way the communication is flowing. The number in the box **1215** embedded in the arrow indicates the number of communications to the other actor. For individual actors, these are the communications to that actor specifically, as opposed to communications sent to various distribution lists. If an aggregate actor is included in the display, all such aggregate communications are included, since such aggregate actors often correspond to distribution lists. Note that for purposes of readability, only communication between pairs of actors is shown. In order to show communication between tuples of actors, aggregate actors may be created.

[0089] The coloring of the lines is used to indicate one of the following, depending on how the user has configured the user interface:

- Whether the amount of communication to this actor relative to other individual actors during the same period of time is unusually high or low.
- Whether the amount of communication to this actor is high or low relative to what has historically been the case (presuming that comparison data exists.)
- Whether the amount of communication to this actor as a fraction of total communication to other individual actors is high or low compared to what has been true historically.
- Whether the amount of communication is high or low relative to a particular workflow process, or informally, among teams of similar size working on similar projects, either contemporaneously, historically, or both.

[0090] In one embodiment, the color or pattern of the line indicates the frequency of communication, while the thickness of the line indicates the volume of communication. In another embodiment, the thickness of the line indicates the

frequency of communication, while the color or pattern of the line indicates the volume of communication.

[0091] The number of communications can be based on any or all of the following, depending on how the user has configured the user interface:

- Email
- Instant Messages (IM)
- Phone calls

[0092] If for some reason, the user has specified an actor who is totally unconnected to the other actors in the display, the icon for that actor will have no lines attached to it.

[0093] The activity graph can be superimposed on an org chart in order to highlight communication flows that appear to differ from the org chart. In this event, actor titles are listed, and additional lines to indicate reporting relationships may be rendered. It can also be used as a visual querying tool; the user may select two or more actors in order to see all of the discussions, or individual communications between them. The user may also click on the line connecting any 2 actors in order to bring up a panel **1210**, shown in Figure 12, containing the communication profile of these actors. Which information to display is user-configurable, but would typically include the following:

- Average depth of communication
- Average interval between successive communications, optionally calculated bi-directionally
- Breakdown of communications by time (for example if the graph spans the period of one year, the communications would be broken down by the month)
- Document types exchanged
- Average length of communication
- Change from immediately previous observation period of same length
- Anomalies
- Ontologies which trap it

Overview Graphs

[0094] Figure 13 is a screen shot showing one embodiment of one view of a discussion timeline. Sets of adjoining rectangles **1305**, linked by lines **1310** and color-coded by actor (as shown in legend **1315**), are used to represent the

communications within a discussion (so that each discussion appears as a set of adjoining rectangles **1305**). The x-axis of the screen represents the timeline, and the sets of rectangles are arranged one above the other on the y-axis as in a Gantt chart. Above each discussion **1305** appears that discussion's title **1320**. The lines **1310** show related discussions, which are generally either precursors to, or offsprings of, the current discussion.

[0095] The purpose of the overview graph, shown in Figure 13, is to show a set of discussions which occurred approximately contemporaneously. These graphs are one of the possible types of output from a query. In one embodiment, each discussion appears as a rectangle **1305** of the length appropriate relative to its duration in the timeline. The title **1320** of the discussion appears directly above the rectangle; in some embodiments, this is followed by the number of items in the discussion. The rectangles are thumbnails of the content part of the transcript view of the discussion, scaled down to the necessary size and rotated 90 degrees to the left. Specifically, each item within the discussion is coded according to one of the following, depending on the user's preference:

- Initiating actor
- Topic
- Document or communication or event type

[0096] The graphic resulting from this is then scaled to the appropriate dimensions and then placed on the chart. Note that an arbitrary number of discussions may be so rendered on this graph; the view simply becomes longer along the Y axis.

[0097] In addition, the user may configure the user interface to color code all communications originated or received by a particular actor of interest. In one embodiment, numerous parallel thumbnails may be created in a dedicated view in order to help the user observe the overlap between different actors of interest.

[0098] As there may be significant time lags between events in some discussions, in some embodiments, a bounding box is used to help indicate that all of the items in question are members of the same discussion. Connecting lines between discussions are used to depict forks in discussions. Similarly to the participant graph, events and other objects may be added to the graph. Zoom controls allow the resolution to be changed; the different visual representations of days, nights, and weekends/holidays may also be used here.

[0099] Figure 14 is a screen shot showing one embodiment of another view of the discussion timeline. In this view, four discussions **1405** are displayed, and the level of activity within each discussion is represented by vertical lines **1415** of various thicknesses, where a thicker line denotes a greater level of communication activity. A panning widget **1410** over one portion of a discussion magnifies the vertical lines in the portion of the display under the widget **1410**. The user can move the panning widget **1410** by mouse manipulation. In one embodiment, when the user does so, a hand icon **1420** appears on the panning widget **1410**. An icon **820** and vertical dotted line **835** indicate when a significant event occurred.

[00100] In another embodiment, the discussion names appear to the left of the view, and one discussion occupies all of the real estate in that range of the Y axis.

[00101] For viewing smaller numbers of discussions, Figure 15 depicts a timeline of the individual events in a discussion. Figure 15 is a screen shot showing one embodiment of another view of the discussion timeline. In this view, detailed information about each individual communication event **1505** is arranged along a discussion timeline **505**. Communication events **1505** are depicted as blocks on the chart (in one embodiment, different types **1530** of events are depicted using distinctively colored or patterned backgrounds). Each block depicting an event **1505** contains header information **1520** related to the corresponding communication, including but not limited to: the sender or creator of the communication; the person who last modified the communication; the date of the communication; the subject of the communication; and any associated attachments or linked documents. In one embodiment, the user can click on an area **1510** of each block in order to display the content of the communication. Color-coded lines **1525** linking each event denote the primary type of evidence used by the system to incorporate that particular item into the discussion. A zooming tool **1535** at the top right of the screen allows the user to zoom in (to show less communications in more detail) or out (to show more communications in less detail). In one embodiment, the background area **1515** of the chart is color-coded or coded with a distinctive pattern to represent daytime and nighttime.

[00102] Figure 15 provides an overview of the constituent parts of a discussion and the connections between them. Communication events are depicted as sets of interconnected blocks **1505**. The blocks **1505** may be color-coded as

elsewhere described; actor icons may be optionally included in the block. The different colored lines **1525** reflect the primary type of evidence used by the system to incorporate that particular item into the discussion. Evidence types include but are not limited to, the following: similarity of participants, "reply to", lexical similarity, pragmatic tag, same attachment, and workflow process. These terms are explained in 'An Apparatus for Sociological Data Mining'.

[00103] Another variation of this view uses clustering to group whole discussions together, connecting different clusters by the appropriately colored lines, as shown in Figure 16. Figure 16 is a screen shot showing one embodiment of a discussion cluster view. In this view, the total number of discussions meeting certain user-specified criteria is reflected in the size of the shape (in this embodiment, a circle) representing the cluster. In one embodiment, the shape that currently has the focus (is selected by the user) is displayed in a distinctive color **1635**, with a distinctive pattern, or is shown enlarged, thereby distinguishing it from circles **1610** that do not have the focus. Links **1615** between clusters are color-coded according to whether the clusters share: commonality of actors, commonality of topics, or commonality of another type. Commonality of actors occurs when two clusters, distinctive from each other by virtue of meeting different clustering criteria, nevertheless share the same set of actors. Where this is the case, a distinctive color is used to trace the link between the two clusters in question. Icons allow the user to see more information **515**, the date and time **520** of the communication, and to view **525** the underlying document discussion. A separate, smaller, window **1630** allows the user to navigate within discussion space by moving a panning tool **1620**. In one embodiment, when the user activates the panning tool **1620**, a hand icon **1625** is displayed.

[00104] In this view, shapes **1610** are used to represent groups of discussions. The shapes **1610** are labeled with the number of discussions contained in that group, and a description of the group. In one embodiment, a smaller window **1630** shows a map of the entire discussion space, or a relatively large part thereof, and contains a smaller frame **1620** to represent the area of discussion space under analysis. Since this view is independent of the information content, it is suitable for use even when the information has been strongly encrypted, and thus is not accessible for analysis.

Document Trail Graphs

[00105] Document trail graphs depict the life cycle of one particular document. Figure 9 is a screen shot showing one embodiment of the document trail graph for a discussion. Each cluster of items on the graph consists of one actor icon **905** and at least one document icon **935**. The actor's actions with regard to the document (such as creation, modification, check-in, etc) are represented by displaying a document icon **935** in an appropriate color or pattern, according to a legend **930**. The x-axis of the graph represents the time line, with dates shown along a timeline display **505** at the bottom of the graph, and lifecycle increments **910** displayed along the top. In one embodiment, at each stage of the document trail, the length of the document in pages is indicated by a number **925** inside the document icon. Links **915** between versions of the document are color-coded according to function. In one embodiment, hovering the mouse over the 'more info' icon **520** invokes a popup **920** summarizing data related to the document in question.

[00106] A timeline **505** allows the user to see the date and time at which a particular event **935** in the document's life occurred. An actor icon **905** denotes the actor responsible for said event **935**. Events **935** are depicted as clusters of activity comprising document icons **925** and an actor icon **905**. Links **915** between the various versions of the document that comprise a single event are color-coded according to function. Document revision numbers **910** (for example, but not limited to, source control system revision numbers, or revision numbers assigned by the present invention) are displayed along the x-axis of the graph. Document icons **925** are color-coded according to the type of user activity that triggered the event. Examples of said user activity include, but are not limited to, document creation, modification, revision, deletion, check-in, check-out, distribution, viewing, third-party transfer and content transfer. In one embodiment, a legend **930** explaining the color-coding is superimposed on the graph.

[00107] Document trail graphs further show icons allow the user to see more information **515**, the date and time **520** of the communication, and to view **525** the underlying document. Hovering the mouse over (in one embodiment, clicking) the 'more info' button **515** displays a popup **920** containing a summary of information related to the event in question. In one embodiment, document icons **925** contain a count of the number of pages (or other size metric) contained within the document at the time of the event **935** in question.

Money Trail Graphs

[00108] The purpose of the money trail graph, shown in Figure 10, is to chart the movement of money using data available within a discussion. This visualization displays information related to money transfers that have been extracted from a discussion. The data is displayed along a timeline **505**. Each extracted data point in the money trail includes a financial institution **1010** or money manager, at least one actor **545** party to the transaction, and a sum of money **1005**, if that data is available. Links **540** connecting the elements of a financial transaction are color-coded according to transaction type following a color code specified in a legend **1025**. Hovering the mouse over the 'more info' icon **520** beside a link **540** invokes a popup **1015** summarizing data related to the financial transaction. An account icon **1020** allows the user to see which financial accounts are involved in the transaction.

[00109] Any transactions within a discussion that relate to money transfers, whether they are merely documents discussing the transfer, or documents that in themselves constitute the instruments of transfer, are used to build a money trail graph. The graph displays actors **545** (whether individuals, groups, or organizations) and the financial institutions **1010** who are involved with the transfer. Color-coded links **540** between actors denote the type of transaction, and are explained in one embodiment in a legend **1025**.

Transcript View Variations

[00110] The basic transcript view, shown in Figures 18 to 25, is a linear presentation of the causally related communication events that make up a discussion. Communications **1830** are displayed in chronological order, and relevant metadata is displayed at the top of each communication. The metadata includes, but is not limited to: date and time created, saved or sent; subject; recipient list; and time (in one embodiment, time is denoted by a clock icon **1815**.) Actor names **1820** are color-coded. A header area **1805** provides information related to the discussion, including (but not limited to) discussion title, message count, list of participants, date range and total number of attached documents (in one embodiment, the total number including duplicates; in another embodiment, the total number of distinct attached documents). In one embodiment, an actor image **545** is associated with each communication, to denote the actor who created or changed the document. Clickable links **1810** contain the names of any attachments,

and open the corresponding attachment when clicked. A display tool **1825** at the top-right of the screen allows the user to show or hide message headers, quoted text within each message, or message content. Communications may further provide document-type coding: for example, by pattern or color coding.

[00111] A sequence of documents **1830** (or other communication events, such as instant messages **2525**) is displayed beneath a discussion header **1805**. In one embodiment of the invention, the discussion might be augmented by external events, either manually by the user through the user interface, or via an automated process defined for a specific case. In one embodiment of the invention, this view consists of a user-configurable summary portion at the top, followed by a list of the various items in the discussion. Each item has an author or creator, and optionally a set of other participants, such as those actors appearing in the cc: line of an email. As shown in Figure 18, for one embodiment, each actor **1820** is automatically color-coded by the system. Since the number of actors in any given corpus can be arbitrarily large, and there are a finite number of variations in color that the eye can readily distinguish, color coding of actors is done relative to the individual discussion. However, actors of particular interest can be assigned colors that are to be used globally. In other embodiments of the invention, colors are recycled by the system within non-intersecting sets of actors. Each item also has a title, a date, and an item type, such as: email, meeting, document modification, etc.

[00112] In one embodiment of the invention, shown in Figure 19, activity associated with each actor is represented in a horizontal bar **1905** containing colored areas **1910**, where the areas are color-coded by actor and spaced to represent time intervals.

[00113] In one embodiment of the invention, shown in Figure 20, discussion partitions **2005** are displayed. The partitions **2005** represent the threads that make up the discussion. In one embodiment, the partitions **2005** include the number of communications in each thread of the discussion. In this embodiment, discussions that have been partitioned (for example, because they are so large or complex) can be accessed by clicking on the title of the partition **2005**.

[00114] In one embodiment of the invention, items of different types are displayed with different background colors or patterns **2110**, as shown in Figure 21. In one embodiment, document type is shown via the use of an icon. In one embodiment, the time of day that a message was sent is shown by an icon **2105**.

[00115] In one embodiment of the invention, as shown in Figure 22, any attachments associated with communications in the present discussion are flagged via distinctive icons **2205** in the header or in the communication body. In one embodiment of the invention, documents linked by reference to communications in the present discussion are flagged via distinctive icons **2210** in the header or in the communication body. Examples of documents linked by reference include, but are not limited to: a document whose URL is referred to in a communication; and a data file whose file name and path is referred to in a communication. In one embodiment, clicking on the icon displays the attachment.

[00116] In one embodiment, shown in Figure 23, quoted text **2320** is distinguished. In one embodiment, the background **2315** is color coded. In another embodiment, the text **2320** itself is color-coded. In one embodiment, within each communication that contains quoted text, each distinct quote is assigned a timestamp **2310**. The communication header area contains explanatory text **2305** stating how many pieces of quoted text are associated with the current communication. In one embodiment, the explanatory text **2305** is replaced by an icon.

[00117] To make it easier for the user to immediately discern the time of day that an event occurred, in one embodiment, a clock icon **1815** as shown in Figure 18 appears that is set to the time that the event occurred. In other embodiment, an icon indicating general time of day appears. For example, a document modification that occurred at night would have an icon with a partial moon against a dark backdrop with stars, while an email sent at dawn would have a rising sun. In one embodiment, in addition to color coding the actors, their picture **545** appears at the top of each item that they created, as shown in Figure 18. In cases where no actor image is available or desired, a user-selected graphic can be used in its place.

[00118] The summary portion **1805** contains the discussion timeline, participating actors, number of items, and controls which allow certain information to be viewed or hidden. In one embodiment of the invention, the discussion timeline is represented graphically (Figure 17) as a series of headers **1705** connected by color-code lines **1710**. In order to view message content, the user clicks on a command button, hyperlink or active area of the header. This includes, but is not limited to, transport and other header information in emails, quoted text from a prior email, routing information for a wire transfer, and check-in messages to document

repositories. One embodiment of generating the *summary* or *resolution* is described in 'An Apparatus for Sociological Data Mining'.

[00119] Optional UI tools include controls to "fast forward" to the next item created or otherwise involving particular actors. This, like the panning widget, which is also used with this view, is especially useful for long discussions which have many participants associated with them.

[00120] In one embodiment, shown in Figure 24, items that are or are suspected to be missing from a discussion are flagged visually. A deleted item **2415** can be flagged in any or all of several ways: the background **2420** has a distinctive color or pattern, or is otherwise displayed in a distinctive way; a red flag icon **2425** is displayed on the item; a text box **2405** displays additional information including but not limited to the computed level of certainty that an item was deleted, and the computed level of suspicion associated with the deletion; a "torn document" effect **2410** graphically conveys to the user that this discussion is incomplete. For one embodiment, only suspicious deletions are flagged.

[00121] An item may have been deleted, yet leave traces behind of its prior existence. A simple example of this is the case in which message B was a reply to message A, but message A itself no longer exists other than what is to be found in the header and content information of message B. There are two subcases of interest related to this:

- The case in which a great deal of information about A – possibly all - can be reconstructed from other sources.
- The case in which only the suspected existence of A can be posited by the system, but virtually no other information is available.

[00122] These two cases differ considerably in their treatment in the user interface, since in the former case, the main consideration of interest is to inform the user that he is seeing reconstructed and/or partial information. For example, in the above example of message A and message B, the header of information of A would be lost, so there would be no way of knowing who had been cc'ed on A. Thus, in a reconstructed version of A in a transcript view, the "cc:" line content would contain a colored block containing question marks, or another representation of the user's choosing. For one embodiment, the item itself has a grayed out background color, and in one embodiment, a broken zig-zag line across it.

[00123] The latter case by definition presumes that there is no content available to display. An example of this would be references in other documents to

a document that there is no independent evidence of; for example, a link that no longer resolves. In that instance, the available information is displayed in the appropriate location in the template. In one embodiment, a certainty factor, as shown in box **2405**, of the system's belief that the document ever actually existed may also appear.

[00124] In some situations, the question of whether the deletion (or suspected deletion) of the data was either legal in the context of a given matter, or was in compliance with some defined standard of behavior is of interest. One embodiment of a system for making this determination is described in copending application Serial No. XXXXX, filed concurrently herewith, and entitled "A METHOD AND APPARATUS TO PROCESS DATA FOR DATA MINING PURPOSES." Once the determination has been made that the deletion of an item is possibly suspect in a given instance, the system will flag the item. For one embodiment, a red flag icon **2425** is used. Missing information is noted in bold red text. The background color of the item will be set to whatever the user's preference is for displaying this kind of item, for example a background containing a tiling of question marks **2420**, as shown in Figure 24.

[00125] In the case of the various graph views, suspected deletions are handled similarly:

- Items which were suspiciously deleted will have an icon.
- Items which were partially or largely reconstructed from other forensically available sources are shown with a zig-zag line across them or have a zig-zag line icon above or to the side of them.
- Items whose content could not be reconstructed at all would bear a red question mark icon.

[00126] Figure 25 is a screen shot showing one embodiment of the transcript view of a discussion, focusing on instant messages **2525** within the discussion. Actors **2515** are color-coded, and time-stamps **2520** are shown at regular intervals. A slider **2505** at the left of the screen allows the user to navigate through the set of instant messages, as does a vertical scroll bar **2535** to the right. The slider **2505** at the left of the screen additionally shows a panning tool **2510** representing the position of the visible portion of instant message text within the larger body of text. Note that for instant messages (IMs) **2525**, a simpler item form is used, where IMs **2525** are displayed in chronological order and timestamped **2520** at regular intervals. A panning tool **2505** with a slider **2510** allows the user to

navigate through the IMs **2525**. In one embodiment, the user can also navigate using a conventional scrollbar **2535**. The same form may also be used to represent emails in a condensed format in which data about additional participants is not deemed of interest. In such cases, the view is constructed by decomposing the emails into the separate text blocks attributable to each actor, and then linearizing them by time (accounting for differences in time zone.) In another embodiment, all contiguous communication from the same actor is presented in the same item, separated by line breaks, much like the traditional form of a play dialog.

Querying Tools

[00127] In order to help facilitate the iterative querying that is so essential when the user is confronted with an arbitrarily large and unfamiliar corpus of documents, an extensive querying language is provided. For one embodiment, this language reflects the actor orientation of the document analysis engine that is described in 'An Apparatus for Sociological Data Mining' patent. Since it is well known that the vast majority of searches contain one or two keywords, and no operators, it is important for the query language for "discussions" to break away from this standard, but ineffective paradigm. This is accomplished by using a sequential structuring of the query information. It is assumed that the majority, but not all, of queries performed with the query language will be one of the following forms, or subsets of the forms described below.

[00128] In Figure 32, the query is of the format: who **3205** (actor/actor group) knew/probably knew/saw/believed/asserted **3210** (verb relationship) what **3215** (topical or specific document instance or version) when **3220** (time, timeframe, or timeframe relative to a particular event). Optionally, the query may specify how **3225** (for example, via pager, mobile device, desktop machine) or where **3230** (if it is possible on the basis of the electronic evidence to place the person geographically at the time of the communication) for the communications as well.

[00129] In Figure 33, the who **3205** is narrowed by adding additional features. Thus, the query may include, with what frequency **3305** (for example, once, repeatedly) an actor, did what **3310** (for example, edit or check-in a document, delete a document, commit a pattern of actions or single action **3305**, such as excluding particular other persons from meetings or discussions, etc), what object **3315** (actor **3205** and/or content **3215**) did they do this to, and when **3220**.

[00130] In Figure 34, the user can specify how **3310** did patterns of behavior (relationship between an object **3215** and an actor **3205** or content **3215**) change over a specified period of time **3220**, or with respect to some other specific context **3405**. For example, the user can query how the patterns of communication between two litigants changed after a particular material event. The user may further query if there any relationship of statistical significance between the occurrences of events of particular tuples of event types, and if so, what kind.

[00131] For one embodiment, the language generally requires that an actor be specified prior to any other terms. In the event that the actor is immaterial to the query, an actor of “anyone” may be specified, or may be automatically inserted by the system. Individual actors can be specified by first name and last name; if only one or the other is provided, the system will look in the recent command history for that user in an attempt to disambiguate it. If nothing suitable is found, the system will try to match the string to both actor first and last names present in the corpus. It will then present a list of appropriate choices, or if there is only choice echo it back to the user for confirmation. An actor’s circle of trust can be specified by adding a plus sign “+” after the actor’s name. In the case of an aggregate actor, the union of the actors in the different circles of trust is taken. Similarly, an actor group, such as the set of all employees of ACME Corp. could be specified. Similarly, in one embodiment, certain personalities of a given actor (or actors) can be specified.

[00132] Next, the language uses an operator. For one embodiment, if the operator is omitted, it will be interpreted to mean “knew” or “asserted”. There are two main classes of operators, those involving content creation or observation, and those that do not. Operators may be active or passive in nature relative to the actor. For example, modifying a document is active, while getting promoted to a higher position is passive. Content modification operators include, but are not limited to, the following:

- **Asserted:** There is text attributable to a particular actor that contains the assertion in question.
- **Had reason to believe:** This has to do with what knowledge the actor had, on the basis of the electronic record, in the face of omissions. For example, if there were 5 versions of a document prior to it being finalized, but a particular actor was only privy to the initial 4, he might not

be aware of the existence of the 5th version. So, he might reasonably believe that the 4th revision was the final one.

- **Knew:** The actor actively engaged in discussion about the topic(s) in question.
- **Probably Knew:** The actor's membership in a particular circle of trust suggests that even absent specific electronic evidence, that the actor *probably* was aware of a particular thing.
- **Saw:** The actor in question saw an instance of the content in question. That the actor saw it is established by either their responding to, or commenting on the material. Other evidence of "saw" includes, but is not limited to, any logged access of a document containing this content.
- **May Have Seen:** There is relevant content that the actor may have seen, but there is no direct evidence that he saw it. For example, the fact that person A sends person B an email cannot reasonably by itself be construed as person B reading this email, at all or in its entirety.

[00133] All of the above also have negations, which may be specified by the use of either "not" or a minus sign. Non-content operators include employee lifecycle events such as Hire, Departure, Transfer, Promotion, and Role Change. Other non-content events include, but are not limited to: Vacation or leave of absence or sick day, Travel event, Wire transfer send or receive, or Phone call, presuming no transcript of the phone call exists.

[00134] "When" may be specified as any of the following:

- Absolute time, using any of the standard date/time formats.
- Time of day (day, night/evening, morning, afternoon, after hours)
- Day of week (or weekday, weekend)
- Holiday or work day or vacation day or one or more specific actors "out of town" as gauged from online calendars and HR system information.

[00135] Note that all time information is implicitly actor-relative.

Differences in time zones, national holidays, and even what is considered "after hours" are addressed. Therefore a "when" phrase is interpreted according to what is true for the greatest number of actors specified in the query. If a different behavior than this is desired by the user, she may explicitly bind the "when" term to either an actor or a specific location. For example:

- 1:00PM in London

- Holiday in France
- Evening for Linda Holmes

[00136] If “when” is not specified, it is presumed to mean:

- The lifespan of the actor specified in the query, if only one actor is specified.
- The interval of time beginning with the earliest lifespan in the actor group specified in the query, and ending with the latest lifespan (or current date/time,) if an actor group were specified.
- The intersection of actor or personality lifespans as specified in the query, if communication among different actors is required by the query

[00137] The “how” may optionally be specified as either a specific device type, such as a Blackberry, or as a category of device, for example a mobile device. The “how” could also be a fax or a voicemail, or a paper letter. In one embodiment, the “how” is identified by its immediately following an unquoted “by” or “via.”

[00138] The “where” may be optionally specified by entering the geographic location of the actor at the time of their participation in the particular transaction. This can be done hierarchically, if a tree of locations is provided. If there is more than one actor specified in the query, the where is modified by actor. In one embodiment, this is specified as <actor name> in <location> or <actor name> at <location>.

[00139] Because of the highly iterative nature of large corpus querying, any of these operators can be iterated on by either reducing or expanding their scope. As described in ‘An Apparatus for Sociological Data Mining’, for one embodiment, the core engine calculates the primary limiting factors in a query. The information is used to indicate to the user which terms are responsible for very substantially reducing or expanding the result set. To facilitate the appropriate use of such iteration, the system can optionally inform the user on which terms could be generalized or specialized one level further for best effect on the results set. In one embodiment, these alternate queries are run automatically on separate threads at the same time as the base query, in order to facilitate an immediate response to a user question, such as a request for “more” or “less.”

Content or “What” Operators

[00140] Each of the operators below can be used in the context of retrieving discussions or individual communications, or both. These may be used to

override the system defaults described previously. For one embodiment, the actual retrieval behavior of these operators is determined by the current relevance scoring mechanism in place. One example of such relevance scoring is described in 'An Apparatus for Sociological Data Mining'.

- Keyword (an operator **3510**): Result set contains all discussions or communications with at least one occurrence of a specified term, depending on the context in which it is used. This operator can specify sets of terms through techniques including but not limited to use of wildcard characters and matching using the Levenshtein edit distance.
- Phrase (an operator **3510**): Result set contains all discussions or communications with at least one occurrence of the sequence of terms. This operator can specify sets of related phrases using techniques including but not limited to the use of wildcard characters in individual terms, matching by Levenshtein edit distance between terms and matching by Levenshtein edit distance between sequences of terms.
- Classifier (an operator **3510**): Result set specified by the set of sub-queries obtained from expanding a given class from an **ontology** loaded into the document analysis engine.
- NamedEntity (an operator **3510**): Result set specified by the query obtained from expanding a given **named entity** from all **ontologies** loaded into the document analysis engine.
- InDiscussionOnly (a document type **3505**): Return only results from discussions
- InSingleDocOnly (a document type **3505**): Return only singleton documents that are not members of any discussion.

Evidence Operators

[00141] The second group of operators search over metadata collected from each individual communication as well as relationships between documents created during the **evidence accrual** process while building discussions. These operators return discussions when applied.

- CommunicationType: Returns all discussions containing certain types of communication items, for example email.
- EventType: Returns all discussions that contain an event of a particular kind, such as a board meeting.

- **Event:** Returns all discussions that contain a particular instance of an event, for example, the board meeting that occurred on March 15, 2001.
- **WithItemRelatedToQuery:** Will return *all* discussions containing communications that are a match for a query, regardless of other parameters.
- **WithSimilarEvidenceLinks:** Will return all discussions with a certain frequency or statistical distribution of evidence links of specific kinds.
- **HaveRevisions:** Returns those discussions that have more than one version (i.e., have at least one revision due to the subsequent addition of further evidence.)
- **PragmaticTag:** Returns any discussions containing one or more items with the given pragmatic tag.

Multi-Discussion Operators

[00142] The third group of operators search over metadata collected from each discussion as well as relationships between discussions. These operators return discussions when applied.

- **WithSimilarProperties:** return discussions containing a distribution of properties of contained documents. For instance “discussions where most communications sent after hours”.
- **WithSimilarActors:** discussions containing specified set of actors, actors can be marked as primary, regular, observer or passive participant. For example: primary:<joe rudd>.
- **WithSameWorkflow:** return all discussions that are an instance of the given template. Templates include formal and informal workflows, etc.
- **RelatedDiscussions:** return discussions related to the given discussions, for example, offspring.

[00143] The fourth group of operators search over inferred sociological relationships between communications in a discussion. In general the discussions which contain communications with the indicated relationship are returned.

- **ActorRelations:** return discussions with the indicated relationship between a set of actors, cliques (“circles of trust”) or groups. Relationships include but are not limited to: “between”, “among”, “drop”, “add”, “exclude.” Some of these operators optionally use a ternary

syntax: <joe rudd> excludes <bob jones> (see 'An Apparatus for Sociological Data Mining' for an explanation of these items)

- ActorStatistics: return discussions with a statistical relationship between an indicated actor and others. For example "most frequent correspondents with ActorX"
- Topology: return discussions with a given topology, for example: "split" "merge"
- Resolution: return discussion with a given resolution
- Damaging: return discussions with damaging actors. Primarily useful in combination with other queries.

[00144] The fifth group of operators are combinatorial operators used to combine result sets of subqueries. The conventional logical operators have a different effect when applied over discussions.

- REQUIRED
- PROHIBITED
- () - nesting
- [] – suppress ontology expansion

Other Operators

- DiscussionMember: Takes a set of individual documents and returns the set which are members of one or more discussions. The negation may be used in order to retrieve the complement set. Used with –statistics, it will calculate various statistics on the differences between the member and non-member documents.
- DiscussionProperties: Used on one or more discussions, queries against the total number of communications/events, types, the maximum depth, overall duration, frequency of communications, topics, actors, etc.
- ExpandToDiscussions: return the set of unique discussions containing at least one document from the document set. The document set is obtained from the result set of a subquery.

[00145] A specific graphical querying tool is also provided, in addition to the views that serve double-duty as visual query builders. As depicted in Figures 29-31 and 37a-c, the query tool includes a text field that users may use to enter words, phrases, or ontology names. Optionally, a separate pane to specify ontologies (similar to the ontology selection dropdown list 3715 shown in Figure

37a) using a tree to select the desired items may be displayed, as well as a view indicating which ontology hits correlate with which others – for example content discussing tax evasion and travel frequently co-occurring - also allowing the desired ontologies to be selected and added to the query.

[00146] Figure 36 depicts another visual query means using a Venn diagram representation to indicate how many documents were “hit” by a particular ontology, or by a *combination* of particular ontologies. A series of interlocking circles **3620** represent the extent to which communications “hit” only one, or more than one, ontology. The interlocking circles **3620** are used to indicate how many documents have been found to reside within each of three categories, as shown in the single-category total **3605**. It also shows the number of documents that reside in more than one of the three categories, as shown in the multiple-category total **3610**. In this embodiment, an explanatory text **3615** prompts the user to click in the relevant portion of the Venn diagram in order to see the corresponding documents. Using this view, users may click on any bounded area of the diagram. Doing so will bring up a panel containing a relevance ranked list of either individual documents or discussions, depending upon the user’s preference. In the event that the user clicks on an area that is the intersection between two or more ontologies, in one embodiment, the relevance ranking scheme will be altered to favor documents that have a substantial score for each ontology in question.

[00147] This view is also used in thumbnail form in order to show how the topic relative proportions changed due to the addition of new documents to the corpus. This is done both by showing “before” and “after” thumbnails, as well as displaying thumbnails side by side of each segment of the data set (however the segments are determined by the user) so that their topic content may be easily compared. A similar representation can be constructed on the basis of actors rather than ontologies; further both actor and ontology information could be combined in one Venn diagram view.

[00148] Returning to Figures 29-31, in the query tool, individual and aggregate actor icons **2910** are provided in the search panel, though actor names may also be typed in the text field **2905**. Users may specify which icons should appear; initially by default the system will select the ones with the greatest communication frequency. Subsequently, by default, it will display the actors who appear most frequently in queries. Additional options allow the exclusion of the specific actors; if an actor has been excluded, the icon representing him will have

an "X" or diagonal bar superimposed in it, similar to the symbol used in prohibition signs, as shown in Figure 31.

[00149] For one embodiment, events of global interest **2915** are added to a catalog so that they are displayed in the query tool for easy access. Additionally, a date range may be specified using standard calendar selection controls **2920**. For one embodiment, events of interest will also appear in the calendar **2925** by coloring the square for the particular date(s) in question. Double-clicking on a colored square will bring up a pop-up with a description of the event. If an event is selected, the user will be asked whether they want the query to be:

- Prior to the event
- Subsequent to the event
- Within a specified period of time before or after the event
- During the event

[00150] If the calendar controls have been used and one or more events have been selected, the system will treat this as a request to include the union of these times. However, in this case, those discussions corresponding to the time specified by events will be given a higher relevancy ranking on the dimension of time.

[00151] In one embodiment, shown in Figure 30, the querying tool allows the user to specify, through the use of check boxes **3010** in what way an actors must have been involved with each document in order for the document to be considered responsive to the query. Examples of the involvement include, but are not limited to: creating, changing, reading, seeing, and/or receiving a document. In one embodiment, also shown in Figure 30, the querying tool allows the user to select pre-created, saved queries **3005**. Possible mechanisms for selecting the saved queries include, but are not limited to, drop-down list or combo boxes (as shown in Figure 30) and list boxes. In one embodiment, the user can specify that only discussions involving certain personalities of a given actor should be returned.

[00152] After the user hits the "go" button, the query will be echoed back to the user. In some embodiments of the invention all queries, however specified, are echoed back to the user in front of the result set. This is done using query templates, such as those specified in Figures 32-34. Specifically, using the example of Template 1 (Figure 32), in one embodiment of the invention, the echo is constructed by concatenating the following pieces of data:

"Query on:" <actors> <actions performed><content descriptors><time>

For example:

"Query on Joe Smith or Bob Jones modifying spreadsheets last quarter"

[00153] In some embodiments, each query template has a corresponding natural language phrase that is used to generate the echo. In such embodiments, the above would be expressed as:

"Did Joe Smith or Bob Jones modify any spreadsheets last quarter?"

[00154] Since numerous query options may be specified, use of an echo helps compactly confirm what the user has asked for. This may help users to understand the result set returned, especially if the user erred in some way. Further, the text of the echo may optionally be saved with the results sets, making it easy for other users to immediately interpret the results set.

[00155] The converse also holds true; in some embodiments of the invention, the user may enter natural language queries, and the system will interpret these queries by matching them to the appropriate query template and then performing any necessary word mapping via the use of ontologies.

[00156] Additional query options include, but are not limited to, the following:

- Discussion length (number of items)
- Discussion length (calendar duration)
- Discussion depth (number of items on same topic)
- Containing events/communication of specific types

[00157] The above-mentioned discussion length query options include (but are not limited to) the longest or shortest discussions (both by number of items and calendar duration) among a given set of actors, or on a given topic. The ability to target the longest or shortest discussions by actor provides a targeted tool for probing the activities of specific actors of interest, without being restricted to particular topics or content. This is important because such restrictions limit the user to finding only what he already thinks may be there, leaving potentially important or interesting information unrevealed.

[00158] As is the case with the query language, the GUI tool will provide the user feedback on which terms caused the query (on a relative basis) to over-generate or under-generate.

[00159] The user may also avail herself of a number of canned query templates. These include, but are not limited to, the following:

- Did <this> actor receive <this> version of <this> particular document?
- Were there any unusual peaks or troughs in communication activity between <these> actors?
- Find the longest discussions during <these> actors during this period of time
- <Who> discussed <this> topic the most?
- <Who> discussed <this> topic at all?
- <Who> was in <this> actor's circle of trust, when?
- Show any instances where communication circumvented the org chart.
- Show any instances where an unexpected person modified a document.

[00160] All such questions are accompanied by a UI template which allows the user to select the instances of actor, document, topic (ontology) or time interval as appropriate to fill in or extend the template.

[00161] The user may configure the interface to display one or more of a number of different kinds of views in response to a query. In one embodiment, the default view is a tabular listing of the discussions that are responsive to the query, relevance ranked accordingly. This table may include all of the following information, plus any additional information that has been programmatically added:

- Discussion Name (as determined by the core engine)
- Discussion Profile (includes such information as the number of items, kind of items, number of attachments.)
- Lifespan (interval of time from the beginning of the first transaction in the discussion to the last)
- Summary, as described in 'An Apparatus for Sociological Data Mining'
- Resolution, as described in 'An Apparatus for Sociological Data Mining'
- Primary Participants
- Specific participants (indicate which actors of special interest were in any way involved in the discussion, even very peripherally.)
- Ontologies (which ontologies trapped content in the discussion)
- Missing Items (whether the system has detected evidence that some of the items that were once part of the discussion are now absent – and if so, how many such items there are.)
- Revision history (As noted in patent 'An Apparatus for Sociological Data Mining', a discussion may be revised due to the incorporation of

additional data from new data sources that had previously been unavailable. In some embodiments of the invention, it may also be modified manually by an administrator with the appropriate level of privilege.)

- Retrieval & viewing history (How many times this discussion has been retrieved in a query, how many times it was actually viewed or annotated.)

[00162] As elsewhere in the system, by default the images used to represent the actors are used in order to facilitate rapid visual scanning of the results, as shown in Figure 26. Figure 26 is a query results view showing actor images. Each line of the results view shows the discussion title **2605**, discussion start date **2610** and end date **2615**, and a button **2625** depicting the image and name of each actor involved with the discussion. In one embodiment, clicking on the button displays information related to the actor. In one embodiment, only the actor image is displayed on the button. In another embodiment, only the actor name is displayed on the button. In one embodiment, a non-clickable image or text box is used, rather than a button. In one embodiment, only primary actors are shown. In one embodiment, only certain personalities of an actor are shown. The discussion is displayed by clicking on the relevant line in the results view, or by highlighting the results view line and clicking the 'Display Discussion' button **2620**. In one embodiment, a text summarization of the discussion is displayed on the relevant line in the results view.

[00163] The user may also opt to have the discussions returned from a query visualized in a matrix view, shown in Figure 27, in which the columns represent a variety of discussion properties extracted from the user's query. For example, if there were 20 actors participating in all of the discussions returned by a particular query, each one would be represented by its own column, as would be other properties, such as communication type, which relevant ontologies "hit" it, and so on. Each discussion **2710** is displayed in its own row, and each property **2705** that it has, such as the participation of a particular actor causes the relevant square to be colored in. Different fill colors may be used in order to indicate whether the actor was a primary actor in the discussion, just an actor, or merely a passive participant. This is depicted in Figure 27 in compact form (without use of the actor images.)

[00164] In addition the user may choose to save a number of queries and their results in a particular location, so that this data may be displayed together, as pictured in Figure 28. In one embodiment, saved queries are displayed in a list, where each item is identified by a folder icon **2850**, to convey to the user the fact that it may be expanded. When expanded, a results list **2835** containing relevant discussions and their associated actors **2840** and date range becomes visible.

[00165] A folder icon **2850** is used to represent each query, and the textual content **2855** of the query is displayed to the right of the folder icon. The first query is shown expanded, revealing the results list **2835**. Descriptive icons **2815**, **2820**, **2825** and **2830** appear to the left of each saved query. Clicking on the icon representing a pencil **2820** allows the user to annotate the query; a green rectangle next to the pencil icon indicates that the query has already been annotated. Clicking on the icon representing a hard drive **2830** saves the query to the local machine. The document icon **2815** at the left becomes replaced with the initials of the last user to modify the data (shown as 'TU' in this figure). The folder icon **2825** is used to add a discussion to a bin or folder of the user's choosing. For each saved query, a list of any relevant discussions **2805** and communications **2810** is shown. In one embodiment, such items show the list of actors **2840** involved, and the date range **2845** of the relevant discussion.

[00166] For one embodiment, individual or "singleton" documents are displayed separately from discussions. Furthermore, for one embodiment, saved data may be annotated (by clicking on the pencil icon,) saved to a local hard drive (by clicking on the hard drive icon,) or placed in one or more particular bins (by clicking on the folder icon to see a list of options that may be selected,) and that the initials of the user who last manipulated the document are included.

[00167] Finally, for users for whom even this simplified process might seem onerous, in one embodiment, a discussion finding "wizard" is provided. This wizard follows the sequence of operators indicated in the section on the querying language. Effectively it decomposes the controls in the illustration above into several individual, simpler panels while providing the user inline help information. The first panel asks about actors; the second asks about events of interest, the third about important words or phrases, and so on.

QBE (Query By Example)

[00168] QBE refers to a set of techniques whereby a user provides an exemplar of what she is looking for in lieu of constructing an explicit query. Figures 37a-37c are screen shots of a series of Query by Example (QBE) windows. This refers to the type of query in which an exemplar of the desired returned object is specified by the user. In the case of discussion objects, QBE becomes a more complicated issue than it is with regular documents. As can be seen in 'An Apparatus for Sociological Data Mining' application, discussions have large numbers of properties, the importance of which may shift according to use case. In other words, there is no simple, one size fits all similarity metric for discussions. For example, if discussion A contains the same 3 topics as discussion B, but shares only one actor with it, and shares the same group of actors with discussion C with which it has one topic in common, it is unclear which of B or C would be considered to most similar to A. The first QBE window, shown in Figure 37a, therefore allows the user to choose from among a plurality of properties. The properties include (but are not limited to): actors **2910**, content terms or phrases **2905**, topics **3705**, content type **3710**, ontology **3715**, and time range **3720**.

[00169] The second window, shown in Figure 37b, contains a set of discussion properties that can be considered as evidence in determining similarity. The set shown can be selected by the user from the full set of discussion properties (except for unique ID). In addition, one embodiment of the invention provides the default set **3725** of discussion properties, pictured in Figure 37b. The colored rectangles **3735** represent the relative importance of each of the discussion properties. In one embodiment, using the modified cursor **3740**, the user may modify the sizes of the different colored rectangles **3735** in the box at the bottom of figure 37b. Since the size of the box is fixed, enlarging one box proportionally reduces the sizes of the others. By repeated resizings of these rectangles, the user can achieve whatever relative scoring amongst these different factors they wish. In one embodiment, this relative scoring information is saved by the system, and will be the default setting until the user changes it again. Alternatively, a pie chart may be used, in a similar manner. Alternatively, the user may select relative importance numerically by percentage, or using some other tool. In one embodiment, the user may name and save different settings, as different settings may be useful for different use cases. The system provides the following functionality in this regard:

- As depicted in Figure 37a, the user may enter a combination containing all or some of the following query items: topic, document type, ontology,

time range, and actor. The system will return a results list containing all discussions that meet this combination of criteria. In one embodiment, the combination of parameters entered by the user can include certain personalities of a given actor.

- A user may right-click on any graphical representation of a discussion in any of the previously described views in order to bring up the menu item "Find Similar". This will bring up a window according to the user's configured preferences displaying the discussions returned by the query.
- A user may right-click on any graphical representation of an individual textual communication, for example, the rows in a table representing singleton documents returned in response to a query, in order to locate other documents that are similar both contextually and by themselves. This will bring up a two-tabbed view, one with discussions, and one with singleton documents.
- As pictured in Figure 37a, the user may enter a document containing text into the system in order to use its contents as input to the query engine. As described further in 'An Apparatus for Sociological Data Mining', all named entities, including actors, will be extracted from the document. In one embodiment, a topic analysis will be done via the use of ontologies and pragmatic tagging, known text blocks will be sought, and finally any mention of dates will be extracted. One example of this usage is depositions in a litigation context.

[00170] Discussions have large numbers of properties including, but not limited to, the following:

- Actors
- Primary Actors
- (Regular) Actors
- Observers
- Number of organizations
- Number of Items
- Number of Item Types
- Item Types
- Lifespan
- Length

- Number of Partitions
- Topics
- Pragmatic Tagged Items
- Revisions

[00171] As a result, there is potentially considerable ambiguity as to what exactly it means to say that one discussion is “similar” to another, and therefore should be returned in a QBE query. Further, the desired behavior of the QBE mechanism may vary by application. However, in one embodiment, the default behavior is to consider that actor and content are the two key items in the weighting; all other properties merely impact the ranking of the discussion in the result set. Specifically, actor is expanded first to any actor with the same role or title in the same organization as the actor(s) provided in the exemplar, and then to any actor in the same organization. Content may be determined by ontology or pragmatic tag, with the former being given more weight. Discussions that contain the desired actors or content under this definition are returned. For one embodiment, results are relevance-ranked according to the scheme laid out in ‘An Apparatus for Sociological Data Mining’.

[00172] If the user wishes a different behavior, he may pull up the Advanced Options panel as shown in Figure 37b, and specify the relative weight that he wishes to assign to each property, and whether or not the value of the property is to be treated strictly as specified in the exemplar. For example, must the exact actors in the exemplar be present in order for a discussion to be retrieved, or does it suffice if their colleagues in the same department are present? In one embodiment, the relative weights are assigned with a weighted scale (i.e., a scale that has both numbers and words, for example 5 = must be the case; 1 = desirable to be somewhat similar.) In another embodiment, shown in Figure 37b, the colored rectangles **3735** represent the relative importance of each of the discussion properties. In one embodiment, using the modified cursor **3740**, the user may modify the sizes of the different colored rectangles **3735** in the box at the bottom of figure 37b. Since the size of the box is fixed, enlarging one box proportionally reduces the sizes of the others. By repeated resizings of these rectangles, the user can achieve whatever relative scoring amongst these different factors they wish. In one embodiment, this relative scoring information is saved by the system, and will be the default setting until the user changes it again. Alternatively, a pie chart may be used, in a similar manner. Alternatively, the user may select relative importance

numerically by percentage, or using some other tool. In one embodiment, the user may name and save different settings, as different settings may be useful for different use cases.

[00173] With this information, the system performs the query. In order to help the user make sense of the ranking of results in figure 37c, the property or properties primarily responsible for the rank are shown **3750** (in one embodiment, properties are color-coded, and the coding is explained in a legend **3745** below the results). For example, as pictured in figure 37c, the initial item was scored highly primarily on the basis of shared terms. If the high score were also attributable to shared actors, a blue chit would also appear. In some embodiments of the invention, the degree of saturation of the color chit is used to express the relative level of similarity in this dimension. In one embodiment, the user sees a warning message **3755** if the result has been broken down into clusters.

[00174] The user may configure the view to show any of the available discussion properties. Similarly, in one embodiment, he may resize and reorder the various columns via direct manipulation.

Filtered Viewing of Discussions

[00175] Using standard information retrieval techniques, those items within the discussion that are relevant to the user's query may be identified and visually highlighted. The user may opt to have all portions of a discussion that are not responsive to their query be minimized. In the case of a transcript view, non-responsive items would be condensed to a single header line, with a button that can be clicked on in order to expand the entry in order to make its contents visible.

[00176] Certain actors who may generate a considerable volume of data may nevertheless generate very little content of interest. If desired, the user may specify that all communications originating from such actors are by default minimized in any views of the discussion.

Object Lifecycle Views

[00177] These views differ from the previously described ones in that they are less actor-focused and more object-focused. These views are intended to depict the history of a particular document (or other electronic data object) as it moves from creation, to distribution, various modifications, changes in form, extractions or copy/pastes to other documents, and possibly deletion. Such views

can be extremely important in investigative contexts, when a particular document becomes the focus of attention.

[00178] Figure 38 depicts the lifecycle view for a document. If versioning information is available from a document management system or repository, or if the creating application provides it, the versions are shown by number **915** above the view, with vertical lines extending beneath them to help make it clear which actors modified or received a document before, or after a particular version change. Major versions and minor versions can be represented differently as per user preference; minor versions may be omitted from the display entirely, represented by thinner lines and smaller number boxes, or drawn the same as major versions. Other designations may be added by the user manually, or extracted automatically from systems that contain such information. These designations include, but are not limited to, published, shipped, and produced. The legend panel **3825** indicates the color coding of some of the different kinds of possible lifecycle events. The lifecycle view is drawn according to a left to right timeline. However, as is also the case with the participant graph, the actor icons only need be drawn in approximately the correct location with respect to the timeline. This is for purposes of readability; drawing a separate actor icon for related actions that may have taken place only moments apart from one another would only serve to decrease the readability of the visualization. However, an additional actor icon will be drawn if it is necessary to do so in order to not combine events which occurred on opposite sides of a version line. Therefore to capture such information, each actor icon is framed by a frame that can be partitioned up to 8 times in order to indicate the occurrence of different events performed by the actor on the document within a fairly short period of time. For example, an actor might check out a document, modify it in some way, email it around to various people, and then check it back into the repository – all within a matter of a short period of time. In this event, the actor frame would have 4 colors, one side each, in whatever colors designated by the legend. With the color scheme pictured below, this would be: orange, red, blue, and yellow.

[00179] In order to “drill down” for further information, the user may click on an actor icon in order to view a detailed log of events represented by that instance of the actor icon. Clicking on any part of the frame will bring up a pop-up with a detailed description of that action. For example, in the case of a check-in, the detailed description would include all of the following information (if available)

- Timestamp of check-in

- Check-in message
- Other files modified as part of same check-in (if any)
- List of those actors receiving check-in notification
- Resulting version number
- Check-in verification ID

[00180] In addition, the user may click on the clock icon above the actor icon in order to see a simple chronological list with exact timestamps of the events represented by that actor icon instance. As in other views, the “?” icon may be used to access other kinds of information as specified in user preferences.

[00181] As depicted in Figure 38 below, individual actors may be filtered out of the view, either entirely removed from the display, or else grayed out significantly as shown below. Individual action types may be similarly treated. For example, a user may not care who checked-out or received a document, but rather may be interested in only those persons who modified the document or sent it outside of the organization.

Mobile, Voice & Related Applications

[00182] As usage of new types of user interfaces becomes more widespread, the system will need to not only absorb data that is captured through such interfaces, but also provide its output to users who rely on these modalities. Examples of the types of interfaces to be considered in this regard are: speech recognition and text-to-speech (either as stand-alone applications or in conjunction with telephony technologies), handheld devices such as those using the PalmOS (Figure 39) or WindowsCE operating systems, mobile telephones equipped with browser interfaces such as iMode or WAP and potentially other devices using specialized data transmission protocols and/or specialized embedded operating systems.

[00183] Speech recognition is already widely used by the legal and medical profession for recording of briefs, reports, and the like. The system includes a means of extracting data that is input by speech recognition, and making such data searchable and retrievable like any other artifact. Input to speech recognition can take the form either of speaker-dependent recognition (the type employed by dictation software) or speaker-independent recognition (the type employed by telephony applications); the system includes adapters to incorporate data from both types of systems.

[00184] Furthermore, the system may utilize speech recognition as an interface allowing users to query data already in the system. To this end, an interactive voice interface to the system could display discussions and other data to the user, either on a device or through an audio-only interface. For applications using speech recognition as input mechanism, an auditory interface is commonly used to play back data to the user, be it for playback over a telephone or through speakers attached to another device such as a desktop computer. To this end, in one embodiment, the system includes auditory interfaces, including but not limited to: playback of indexed documents by text-to-speech, or spoken synthesis that accompanies or parallels any of the visual diagrams generated by the system.

[00185] Further remote interfaces for the system may include wireless and handheld display and input to the system, for example through WAP or similar protocols that transmit data over wireless networks (including telephony networks), input of data via Short Messaging System (SMS) or similar protocols, the use of downloadable/syncable views and data input for handheld/palmtop/tablet PCs, and interfaces for wearable computing devices. The system allows both input and retrieval of data into the system through any combination of devices; for example, a user's spoken query will be displayable on the screen of a handheld device.

[00186] Mobile and voice applications are most useful as query interfaces to the system for users who find themselves away from office systems but nonetheless require system access. However, the provision for data input by mobile or voice interfaces also means that "live" updates to a system can be made remotely, and that secondary sources of information (on-the-spot interviews, court proceedings, live news feeds) can be incorporated into the system in the absence of other indexing and content extraction processes. This topic is dealt with in further depth in 'An Apparatus for Sociological Data Mining'.

[00187] For voice applications in particular, a natural language interface is a highly desirable mode of interaction with the system. Users who are limited to an auditory interface (where the input to the system is spoken rather than textual) can respond better to systems that are designed around the vagaries of human speech (which include disfluencies, variable noise conditions, and the strictly linear exchange of information). The nature of auditory interfaces is such that spontaneity and a tolerance for garbled input is incorporated into the interface; rather than scripted, fixed input that can be manipulated visually, the voice interface must attempt to parse ambiguous user input and return a "system appropriate" result.

[00188] Typically, speech recognition interfaces rely on a grammar that restricts potential user utterances in order to provide accurate recognition. In a spoken query interface to the system described in this patent, highly accurate utterance recognition is unlikely, but need not be a hindrance to proper function. By allowing the system to accept unstructured utterances and subsequently to construct a range of hypotheses about their content, a much more usable type of interface results. With an unstructured grammar, any possible user utterance can generate a fixed-length set of possible parses. From this set of potential parses, an algorithm is applied to account for phonetic similarities in homophones, to remove content that occurs in only a few parses, and so forth, leaving a "core" hypothesis that can be used as the basis for a search.

[00189] As an example, the user utterance, "Find me anything about fraud" might generate the following hypothesis set from a speech recognition engine:

- "find me a thing about fraud"
- "find my anything about frog"
- "find me knee thing up out fraud"
- ... and so forth.

[00190] While none of the generated parses is entirely correct, the phonetic similarity of many items in the resulting set can be used to generate a normalized "core" hypothesis that finds the commonly occurring substrings such as "find/fine" "me/my", "anything/a thing/knee thing", "about/up out", and "fraud/frog". Normalization of this set of results can proceed according to relatively simple natural language heuristics: those words that are essentially contentless, such as "find me anything", can be omitted, leaving the core terms "about fraud", which can be encoded, for example, as a set of Boolean search queries like "contents: fraud OR contents: "about fraud". Once the queries are generated, a preliminary result set can be relayed to the speaker by voice interface, allowing of course for additional refinement or correction of the query, as well as for more detailed display/playback of user-selected elements of the result set. For one embodiment, the system may repeat the query as understood to the user, permitting the user to either confirm the query or to repeat the query to modify it.

[00191] Figure 39 is a screen shot showing one embodiment of the discussion view, as used on a mobile device. A list **3920** of returned discussions is shown, each of which is associated with a checkbox **3915** allowing the user to

select the discussions in order to view further detail. In one embodiment, the query **3910** that caused the list **3920** of discussions to be returned is displayed. In one embodiment, a group of buttons **3905** allows the query to be launched or interrupted.

Case Management Application

[00192] One of the applications of the system is case management in a litigation context. The functionality previously described can be delivered inside a case management application. As pictured in Figure 40, the master window in this application allows the viewing of both individual documents and discussions in their various visual manifestations. Figure 40 is a screen shot of one embodiment of the case management master window. In the top-left pane **4005**, the user can select from among various types of communications **4045** (and, in one embodiment, the actors who sent communications), or can select discussions **4050**. Documents are displayed in the top right pane **4010**. In this example, the top right pane **4020** shows a privileged document, which is flagged **4015** as such. At the bottom right pane **4035**, the user can enter text in order to find specific discussions, documents, or actors. The bottom-left pane **4030** is used to bookmark searches to which the user wishes to return. A group of option buttons **4040** allows the user to select between management of discussions, documents, or actors, and a set of command buttons **4025** allows the user to select different views of the data. This window contains the following functionality of interest:

- Allowing users to browse by document type, which is calculated either by file extension or by pragmatic tagging, and to drill down first by actor and then by topic, or vice versa, as well as by discussion membership.
- Documents, including discussions may be marked as “privileged” causing the red privileged stamp to always appear over the document in electronic form, and to be printed when the document is printed.
- The user may search for a word or topic in discussions, according to the actors to whom the words or topic are attributable, or in individual documents.

[00193] In the foregoing specification, the invention has been described with reference to specific exemplary embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention as set forth in the

appended claims. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.

CLAIMS

We claim:

1. A method of organizing information comprising:
providing a visualization of actor communications in the context of one or more discussion, a discussion including at least one actor and at least one documented communication.
2. The method of claim 1, wherein the documented communication may be one or more of the following: a document, an email, an instant message (IM), a facsimile, a voicemail, a phone call, a wire transfer, a fund transfer, or an electronically traceable package.
3. The method of claim 1, further comprising:
receiving a query; and
generating the visualization in response to the query.
4. The method of claim 3, wherein the query includes one or more of: actors, time frame, topic, related events, communications type, specific document, or workflow process.
5. The method of claim 3, wherein the visualization comprises a tabular list of documents that satisfy the query.
6. The method of claim 3, wherein the visualization comprises a discussion oriented display.
7. The method of claim 6, wherein the discussion oriented display comprises one of the following: a participant graph, an overview graph, a transcript view, a question and answer list, a matrix view, a cluster view, and a tabular list view.
8. The method of claim 3, wherein the visualization comprises an actor-oriented display.

9. The method of claim 8, wherein the actor-oriented display comprises one of the following: an activity graph, a participant graph, an actor profile, a matrix view, a tabular list view, and a cluster view.

10. The method of claim 3, wherein the visualization comprises a statistical display of data.

11. The method of claim 10, wherein the statistical display comprises one of the following: a Venn diagram, and a profile view.

12. The method of claim 3, wherein the visualization comprises a topic-based display.

13. The method of claim 1, wherein the actor is an aggregate actor, comprising one of the following: a circle of trust, a group, a section, or another grouping of two or more actors.

14. The method of claim 1, wherein the discussion includes an exchange between at least two actors, the exchange including one or more documented communications.

15. The method of claim 14, wherein a plurality of communications are indicated between the at least two actors, and a visual representation of a depth of the communications is shown.

16. The method of claim 15, wherein the visual representation is a line between two actors.

17. The method of claim 16, wherein a thickness of the line indicates a number of communications between the actors.

18. The method of claim 1, further comprising:
displaying a time-based participant graph showing communications between various actors over time.

19. The method of claim 18, wherein each communication is coded to indicate a communication type.
20. The method of claim 18, wherein each communication may be selected to display additional information about the communication.
21. The method of claim 20, wherein the additional information comprises one or more of the following: communication type, date and time of communication, communication content.
22. The method of claim 18, wherein each actor is represented visually by a unique icon.
23. The method of claim 22, wherein the icon is one of the following: a photograph of the actor, a consistent graphical representation of the actor.
24. The method of claim 22, further comprising:
displaying actor information, in response to a user selecting the unique icon.
25. The method of claim 18, wherein the time of day is visually indicated in the time-based participant graph.
26. The method of claim 25, wherein the time of day indication is color based.
27. The method of claim 25, wherein the time of day indication further visually indicates holidays and after-hours communications.
28. The method of claim 18, further comprising:
displaying tags indicating events of interest, to show communications in relationship to such events.
29. The method of claim 1, further comprising:
enabling a user to add additional communications to the visualization.

30. The method of claim 1, wherein the visualization comprises a document trail graph, providing information on each document.
31. The method of claim 30, wherein the information comprises one or more of the following: creation date, creating actor, modification date(s), modification actor(s), revision date(s), revision actor(s), deletion date, deletion actor, check-in date(s), check-out date(s), distribution(s), recipients of distribution(s), and document content.
32. The method of claim 1, wherein the visualization comprises a money trail graph, illustrating times and actors involved in various money transfers.
33. The method of claim 1, wherein the visualization comprises an activity graph that illustrates a level of activity over time.
34. The method of claim 33, further comprising displaying an icon illustrating events of relevance, to show a relationship of activity levels to the events of relevance.
35. The method of claim 33, further comprising:
displaying two actor icons, representing actors that communicated with each other, and a communication line between the two actor icons showing a communication depth.
36. The method of claim 35, wherein a number at a first end of a line represents a number of communications sent by a first actor to a second actor, and a number at a second end of the line represents the number of communications sent by the second actor to the first actor.
37. The method of claim 35, wherein a color of the communication line shows the communication density.
38. The method of claim 1, wherein the visualization is a discussion timeline in which sets of adjoining rectangles, linked by lines and coded by actor represent the communications within a discussion.

39. The method of claim 38, further comprising displaying a legend identifying each actor code.
40. The method of claim 1, wherein the visualization is a discussion cluster, illustrating a number of discussions that meet a query criteria of the user.
41. The method of claim 40, further comprising:visually identifying a particular discussion focus.
42. The method of claim 1, wherein the visualization comprises a transcript view, displaying communications coded by actor.
43. The method of claim 42, wherein communications are color coded by document type.
44. The method of claim 42, wherein quoted text within a document is color coded for an originating actor.
45. The method of claim 42, further comprising:
indicating deleted documents in the transcript, including available information about the deleted document.
46. The method of claim 45, further comprising:
determining if a deleted document is suspicious, and if so, flagging the deleted document indication in the transcript.
47. The method of claim 1, wherein the visualization is a matrix query result view, indicating participation of certain actors in certain discussions.
48. The method of claim 1, further comprising:
providing a query tool to construct queries for related documents.
49. The method of claim 48, further comprising:

displaying actor icons for selection with the query tool, to enable a user to identify an actor.

50. The method of claim 49, further comprising:
permitting specification of actor involvement for each selected actor, the actor involvement being one of the following: created, changed, received, read, or saw a document.

51. The method of claim 49, further comprising:
permitting an actor to be excluded from the query.

52. The method of claim 48, wherein constructing a query comprises one or more of the following: specifying an actor, specifying an action by the actor, specifying content, specifying timeframe, specifying communication method, specifying actor location, specifying causality for the communication, specifying action frequency, specifying action type, specifying target of the communication, document types for retrieval, and keywords.

53. The method of claim 48, comprising:
providing a query by example, permitting a user to select from multiple pull-down menus.

54. The method of claim 53, further comprising:
prompting the user to assign priority to related parameters using a parameter weighting.

55. The method of claim 48, further comprising:
saving queries and query results; and
making the saved queries and the saved query results available to the user.

56. An apparatus to present data comprising:
a query tool to receive a request; and
a display tool to present a visualization of actor communications in the context of one or more discussions, a discussion including at least one actor and at least one documented communication.

57. The apparatus of claim 56, wherein constructing a query comprises one or more of the following: specifying an actor, specifying an action by the actor, specifying content, specifying timeframe, specifying communication method, specifying actor location, specifying causality for the communication, specifying action frequency, specifying action type, specifying target of the communication, document types for retrieval, and keywords.

58. The apparatus of claim 56, comprising:
a query by example tool including multiple pull-down menus to select various parameters of a query.

59. The apparatus of claim 58, further comprising:
a parameter weighting tool to assign priority to related parameters.

60. The apparatus of claim 56, further comprising:
a memory to save queries and query results, the saved queries and the saved query results available to the user.

61. The apparatus of claim 56, further comprising:
a plurality of actor icons for selection with the query tool, to enable a user to identify an actor.

62. The apparatus of claim 61, further comprising:
a selector to specify actor involvement for each selected actor, the actor involvement being one of the following: created, changed, received, read, or saw a document.

63. The apparatus of claim 62, wherein the selector permits an actor to be excluded from the query.

64. The apparatus of claim 56, wherein the visualization comprises a participant graph including actor icons and connectors indicating communications between the actors.

65. The apparatus of claim 64, wherein the actor icons are a unique icon for each actor, the unique icon comprising: a photograph of the actor or a consistent graphical representation of the actor.

66. The apparatus of claim 64, further comprising:
icons attached to each connector, the icons designed to provide additional information about the communication represented by the connector.

Figure 1: Example of a computer network

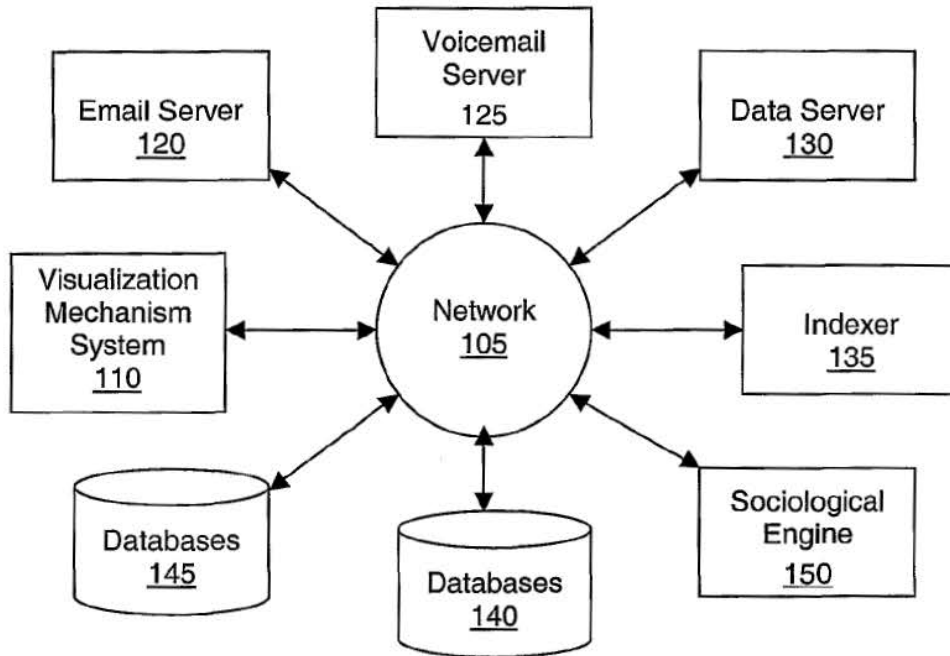


Figure 2: Example of a digital computer

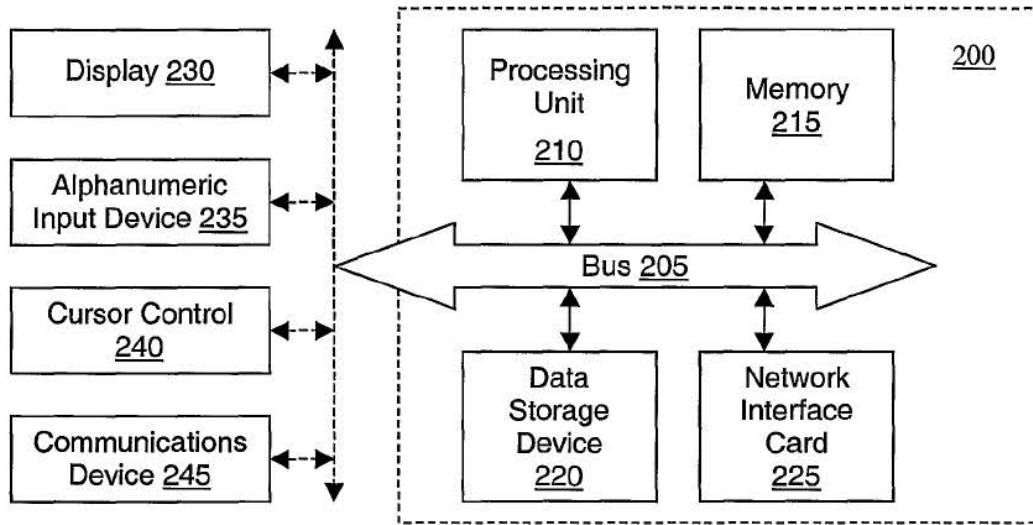


Figure 3: Navigation flow

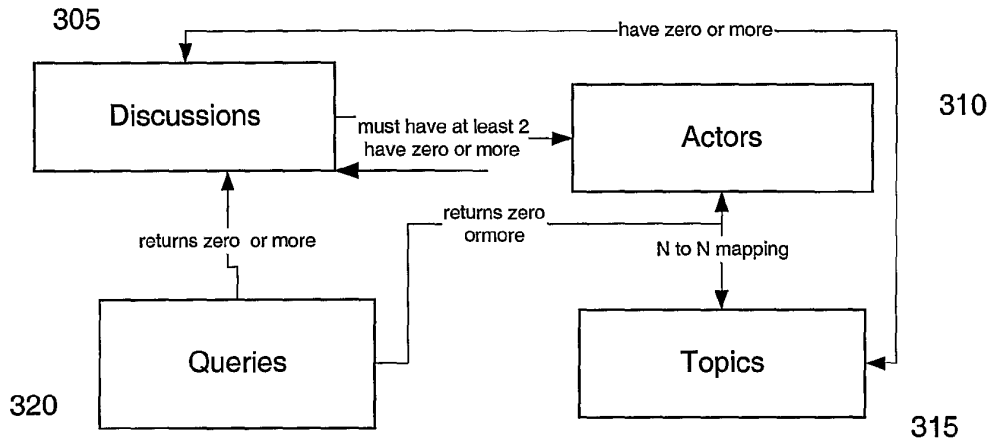
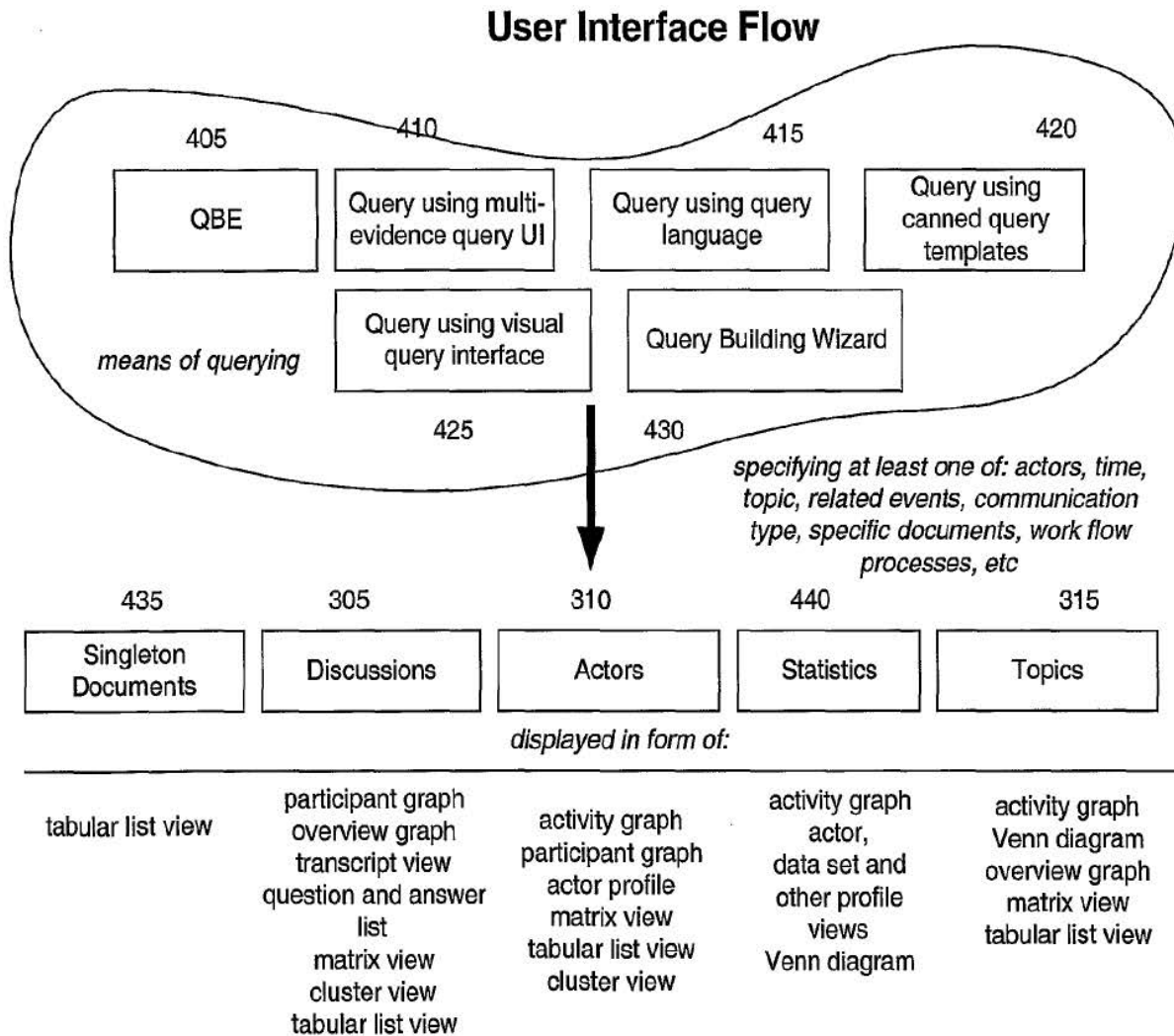


Figure 4: User-interface flow



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Figure 5: Participant graph

Participant Graph

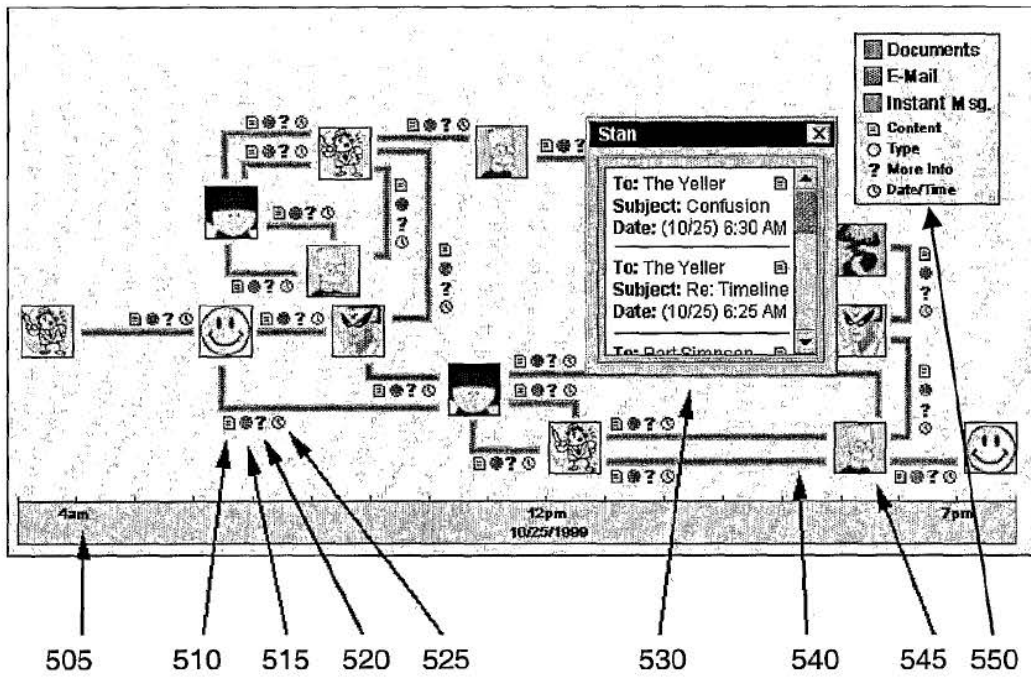
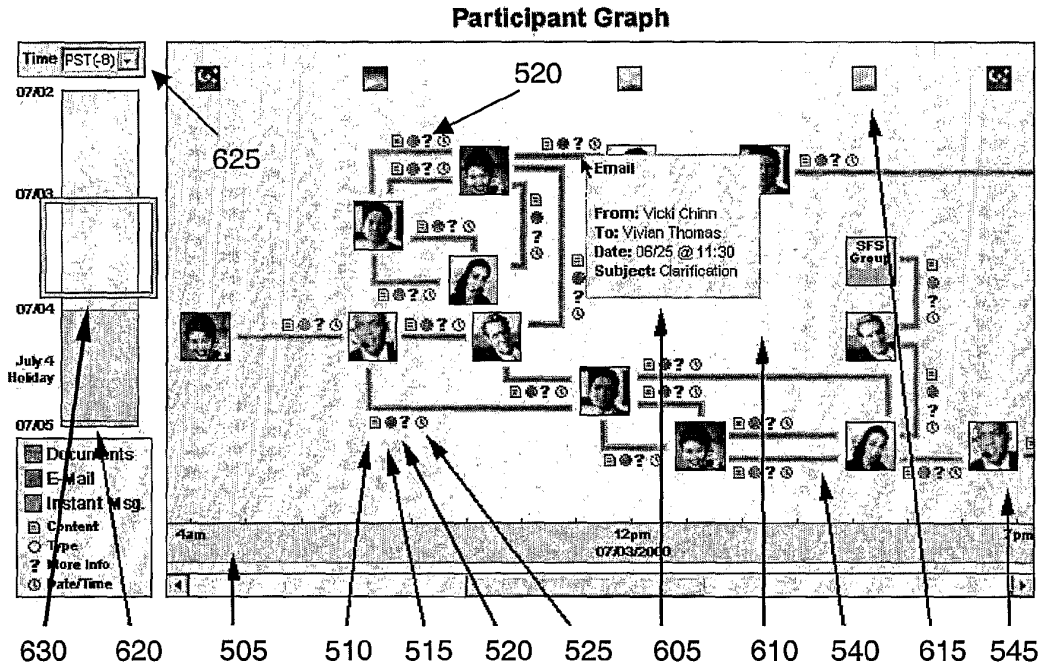


Figure 6: Participant graph, daytime and nighttime view



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Figure 7: form panel for adding items

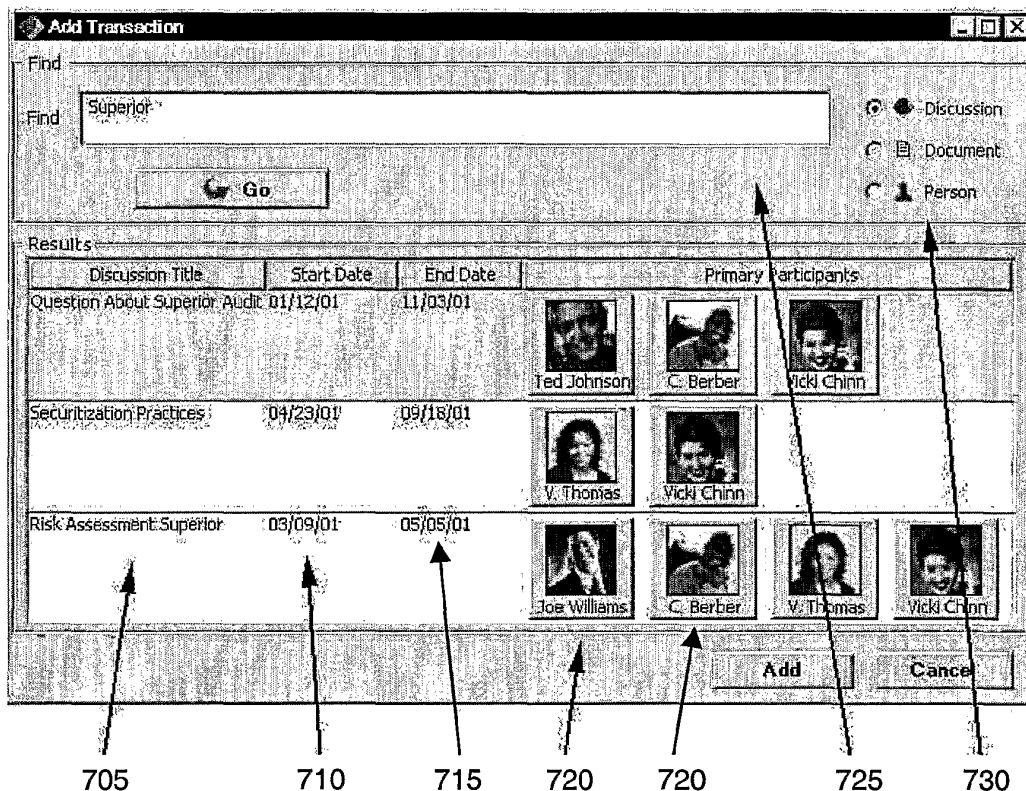
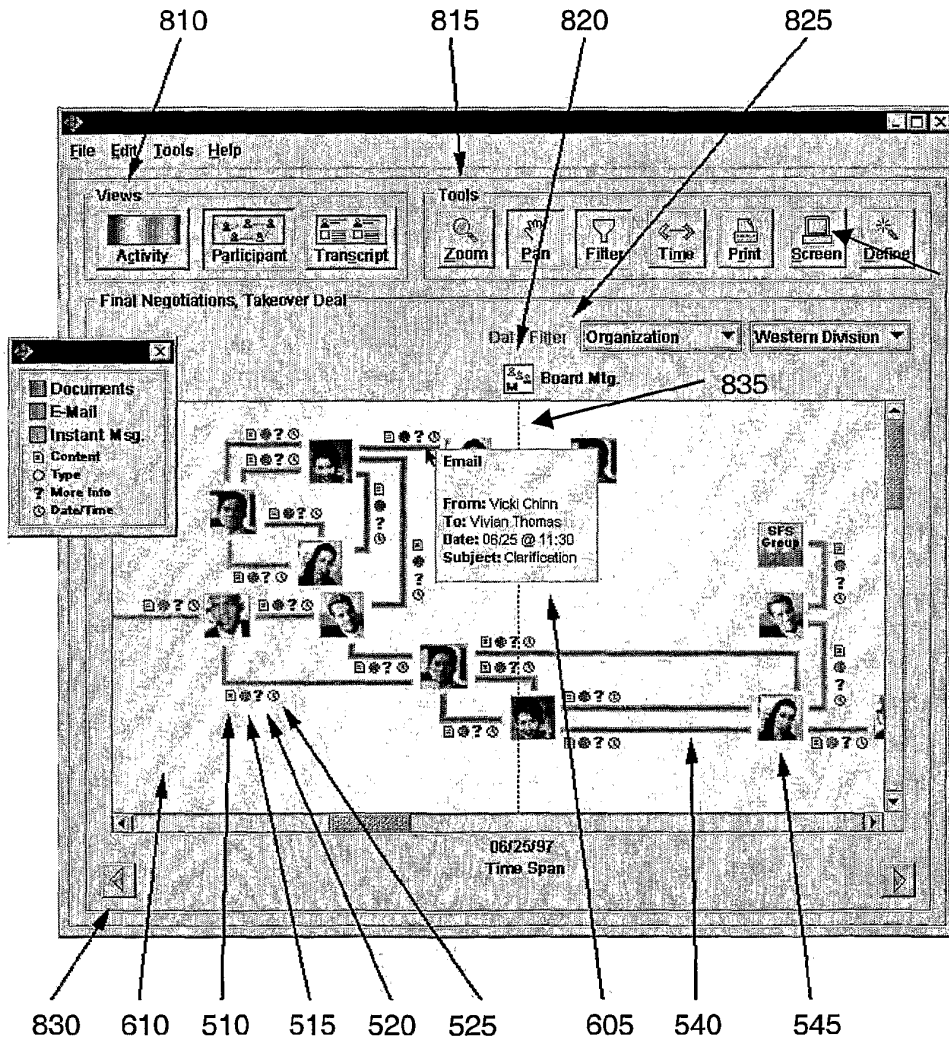
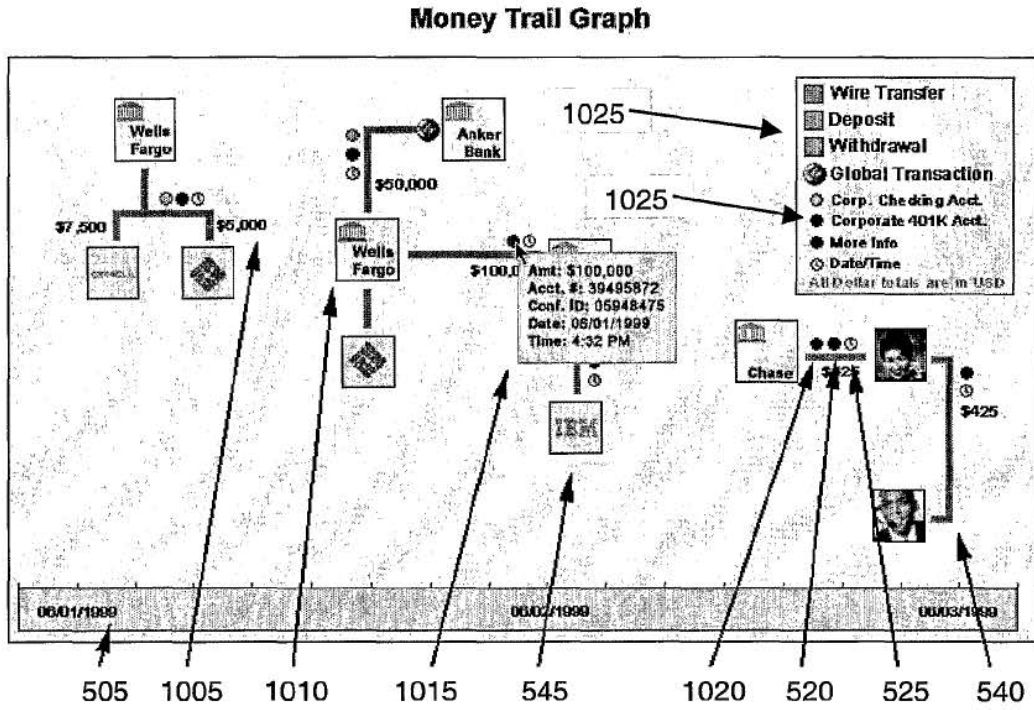


Figure 8: Participant graph, with pop-up showing basic information about the item



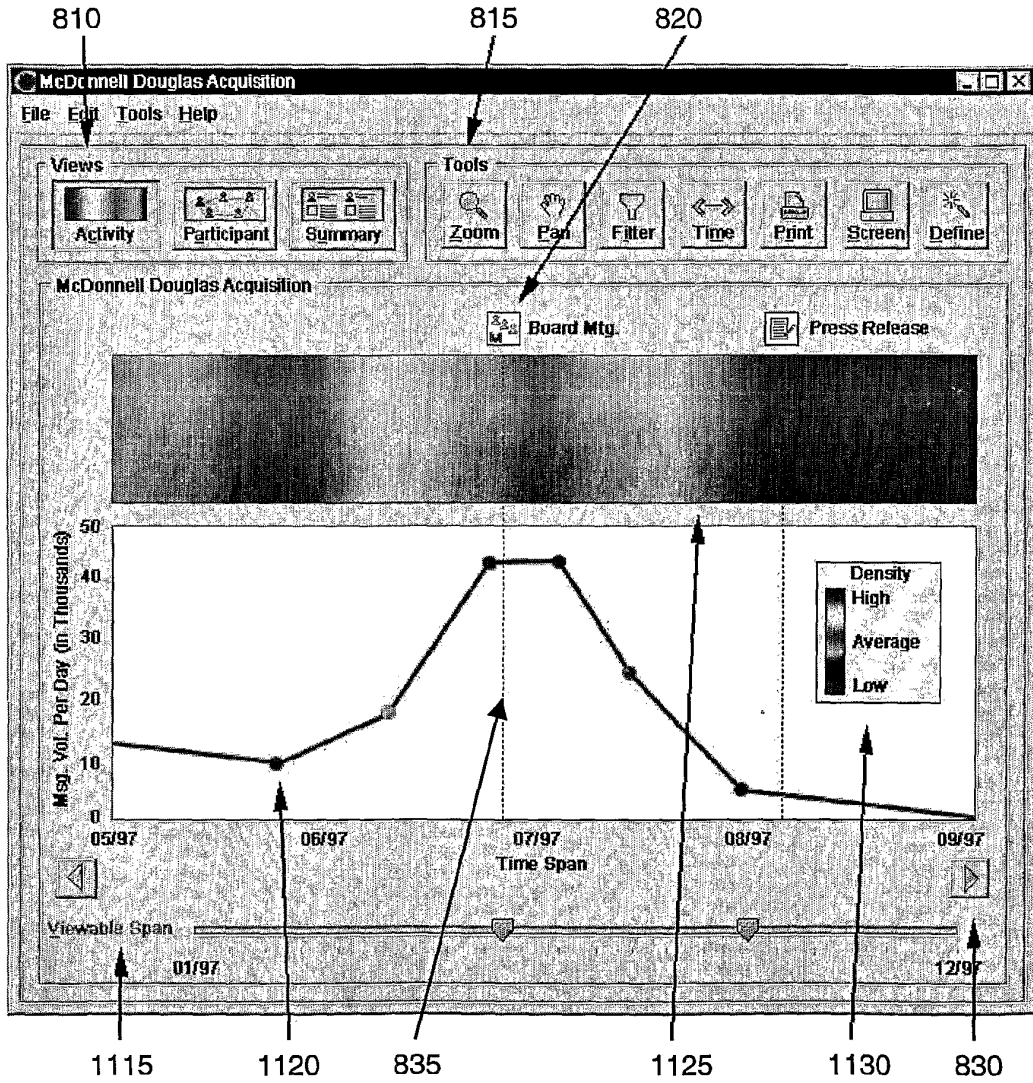
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Figure 10: Money trail graph



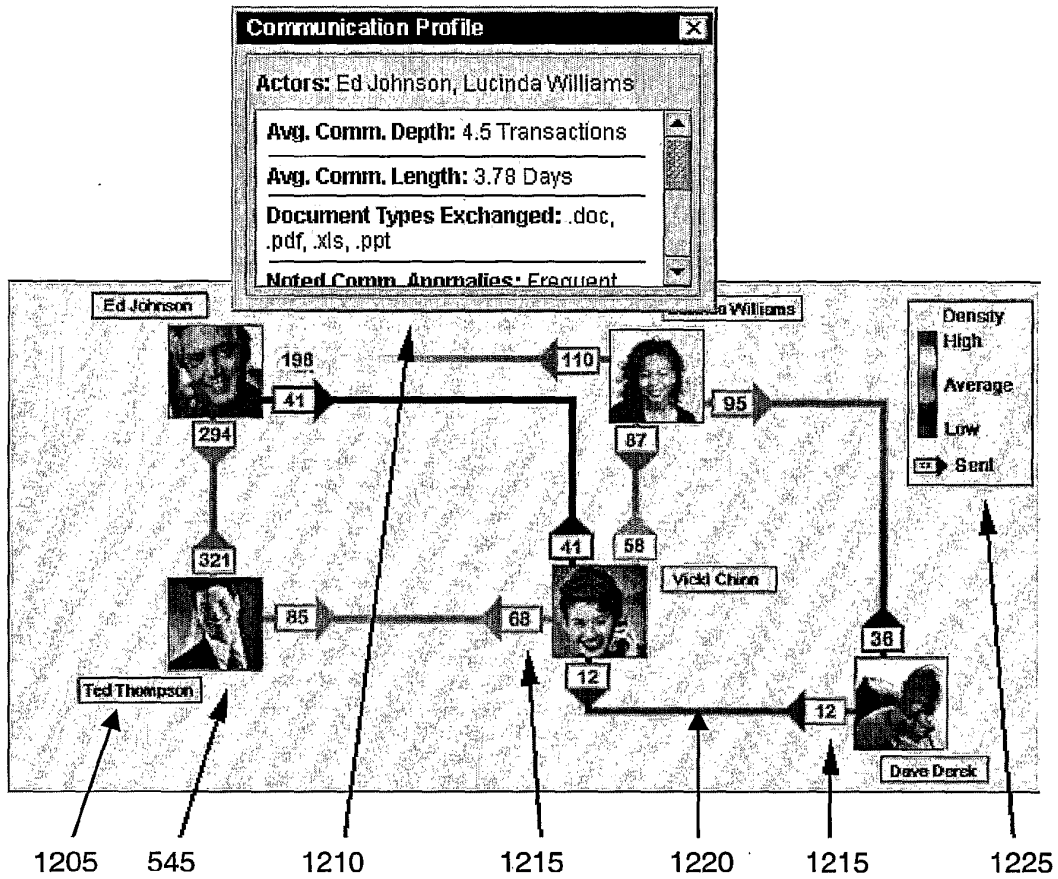
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Figure 11: Rainbow view



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Figure 12: Activity graph



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Figure 13: Discussion timeline

Discussion Timeline

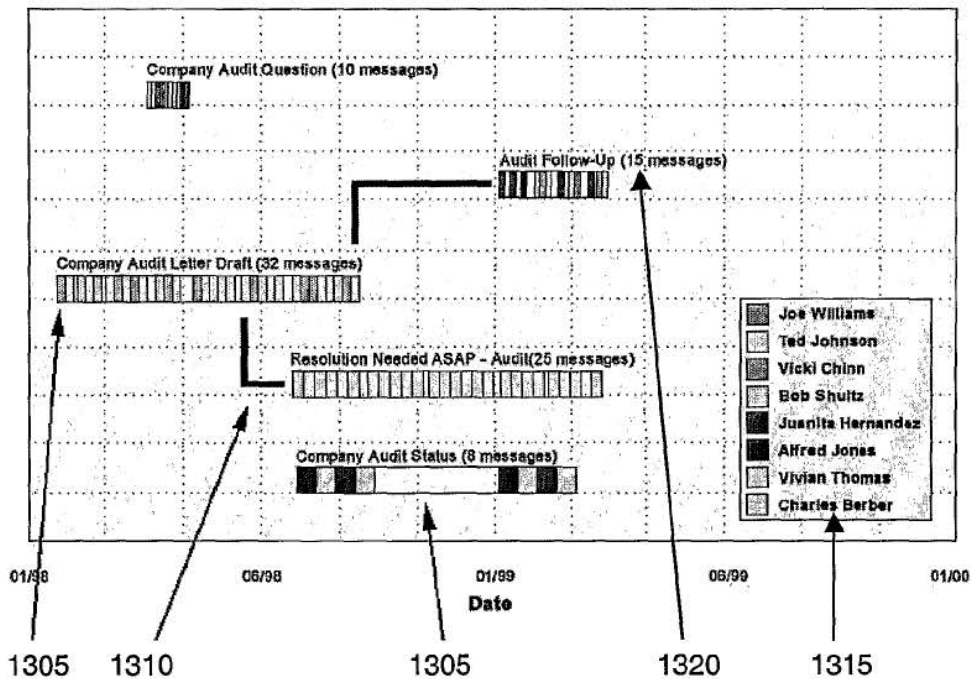


Figure 14: Discussion timeline with spider-eye panning widget

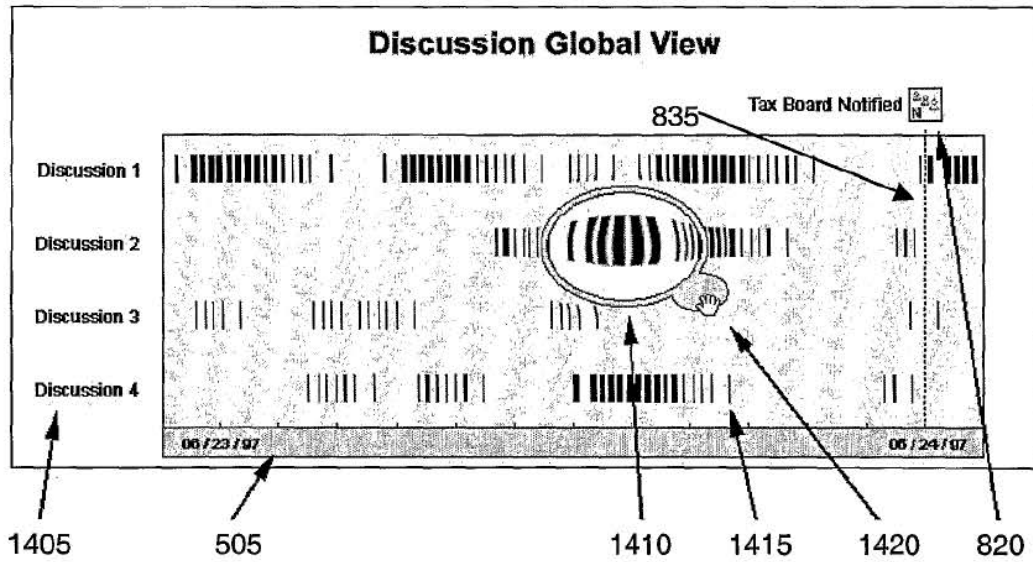


Figure 15: Discussion timeline showing individual events

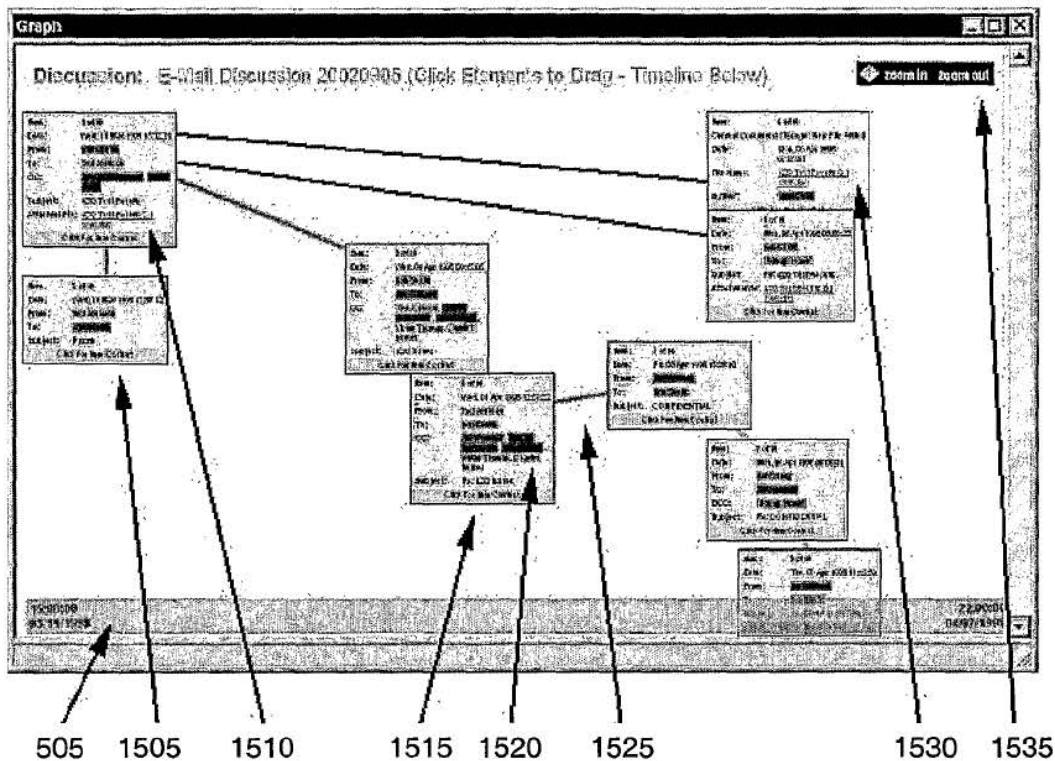
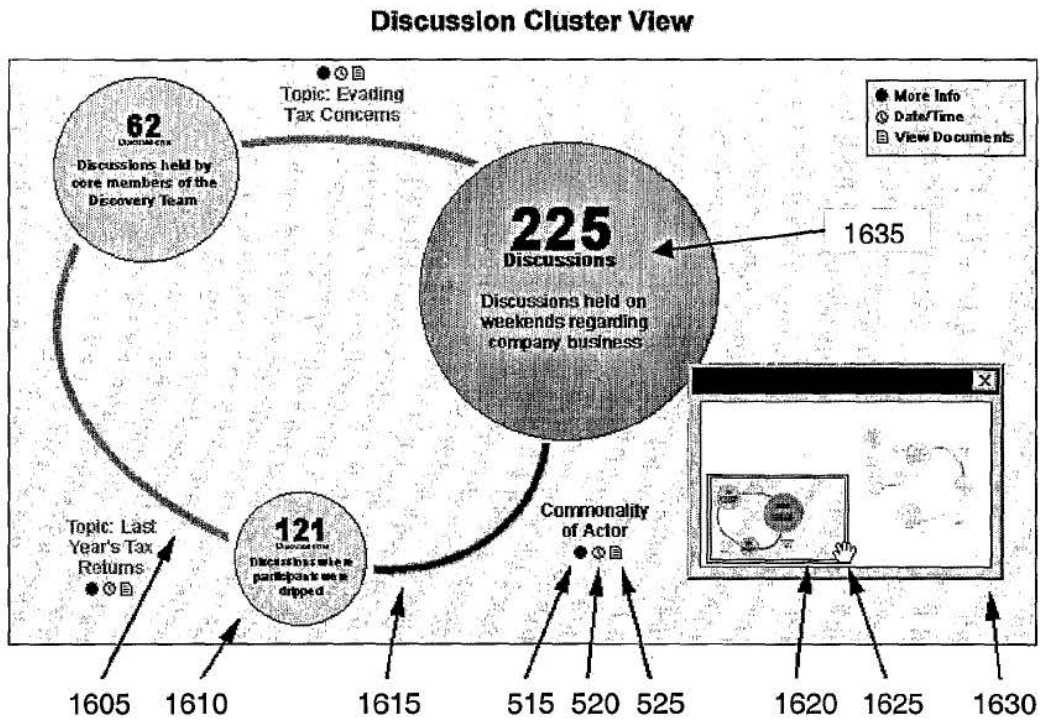


Figure 16: Cluster view



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Figure 17: Graphical Representation of Discussion Timeline

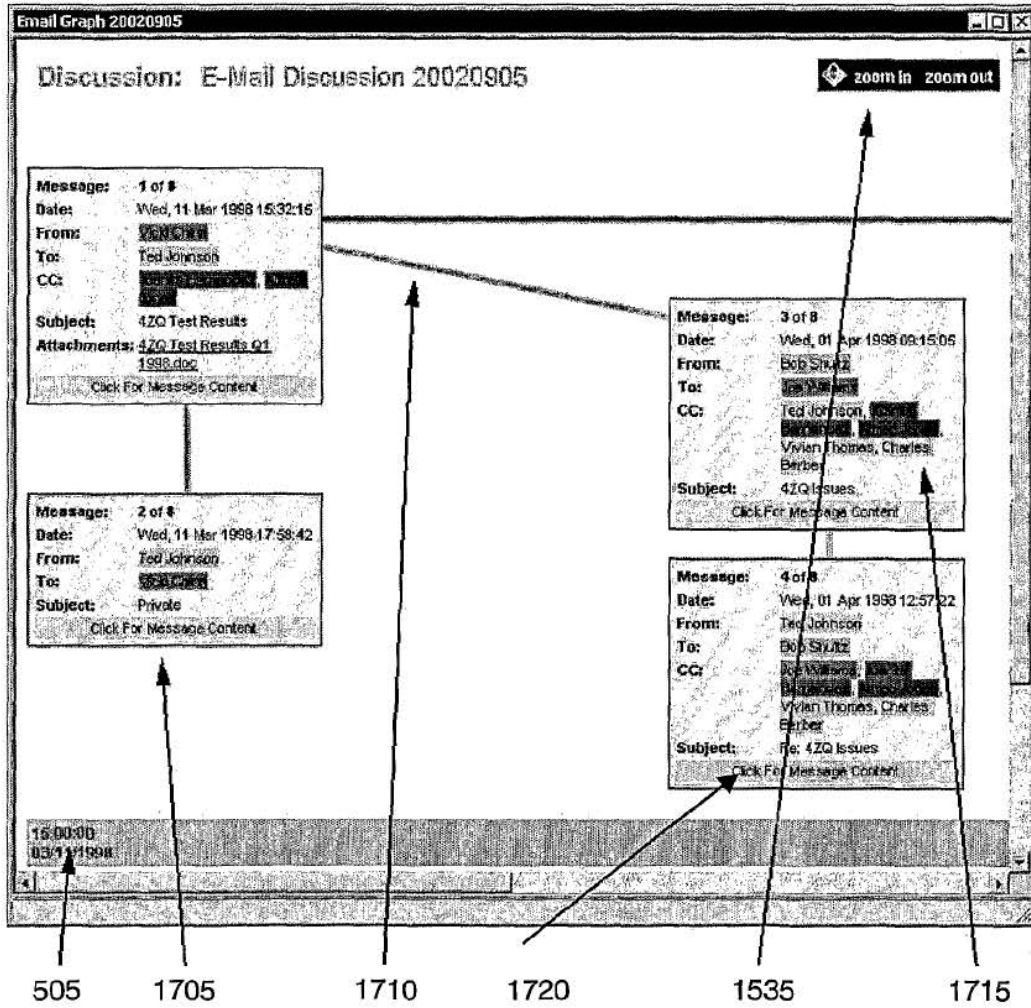


Figure 18: Transcript view, showing actor color-coding

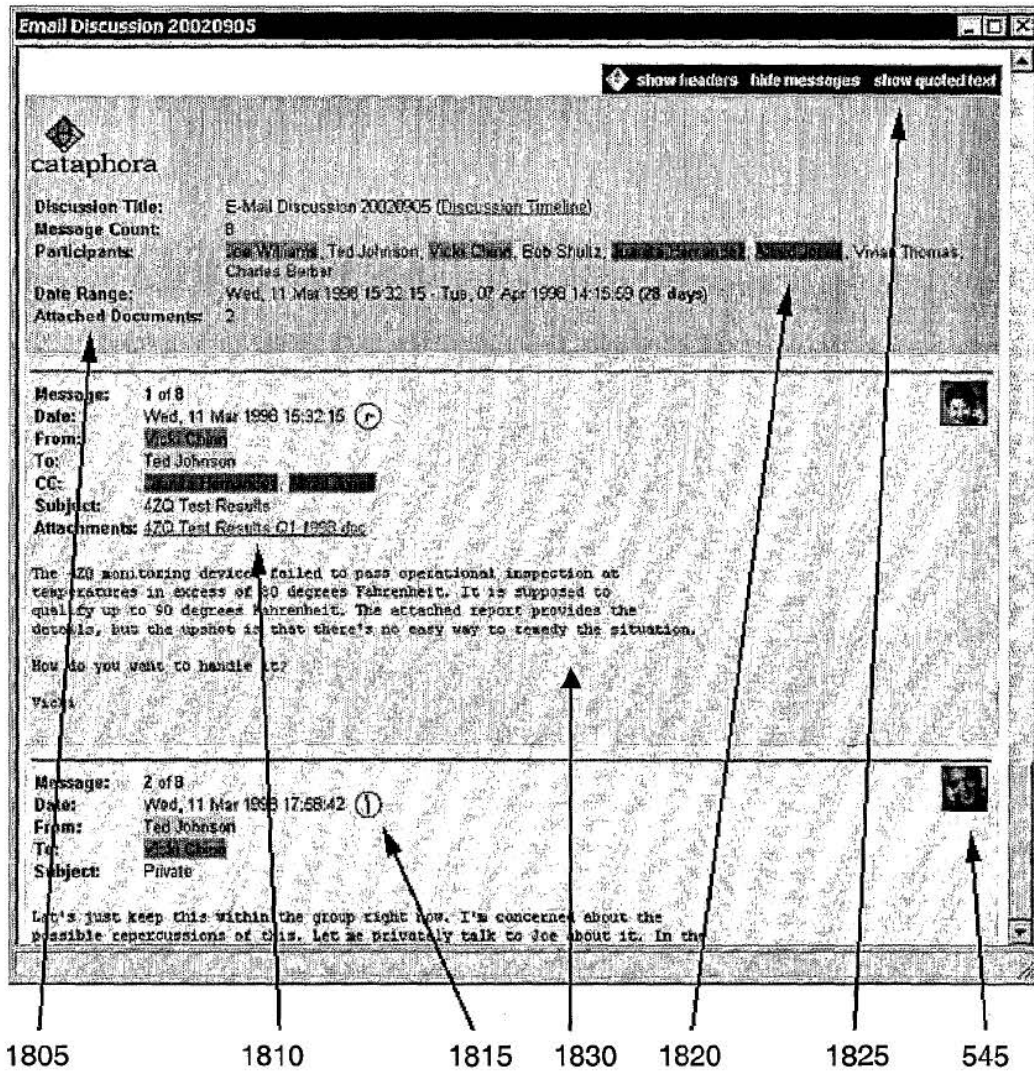


Figure 19: Transcript view, showing actor activity

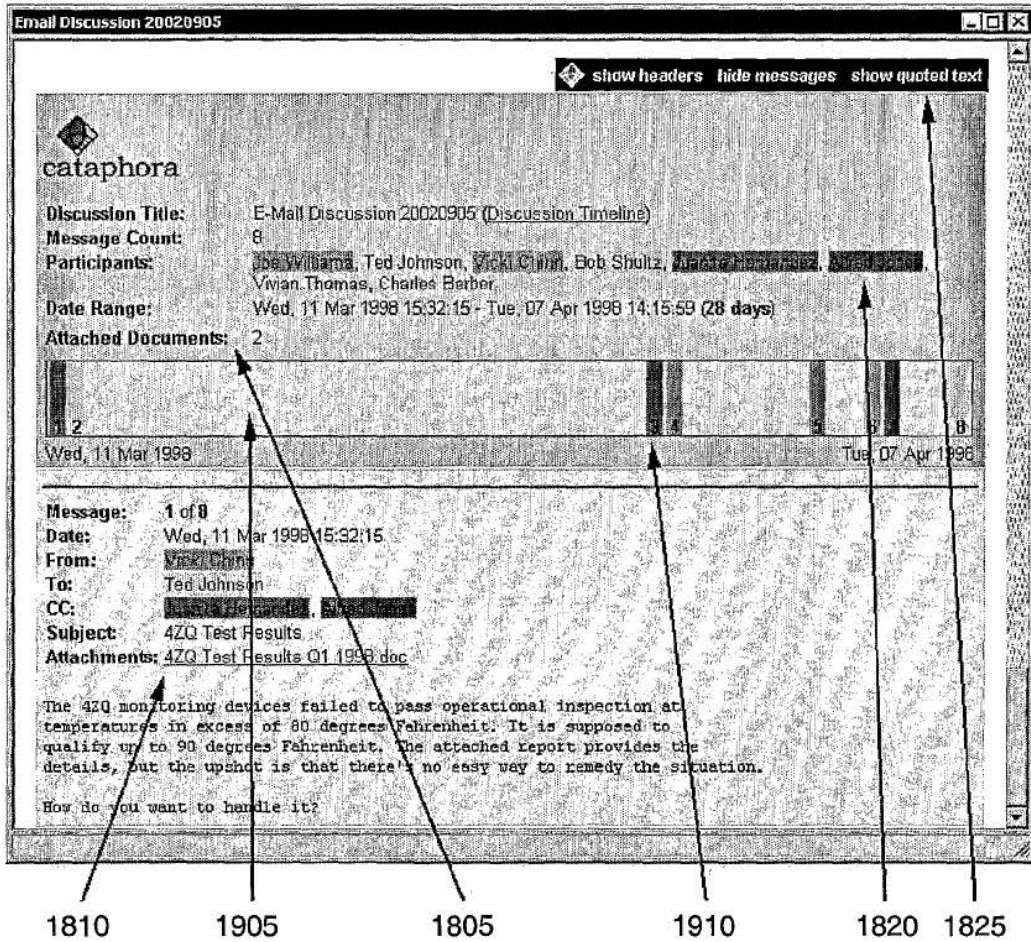


Figure 20: Transcript view, showing discussion partitions

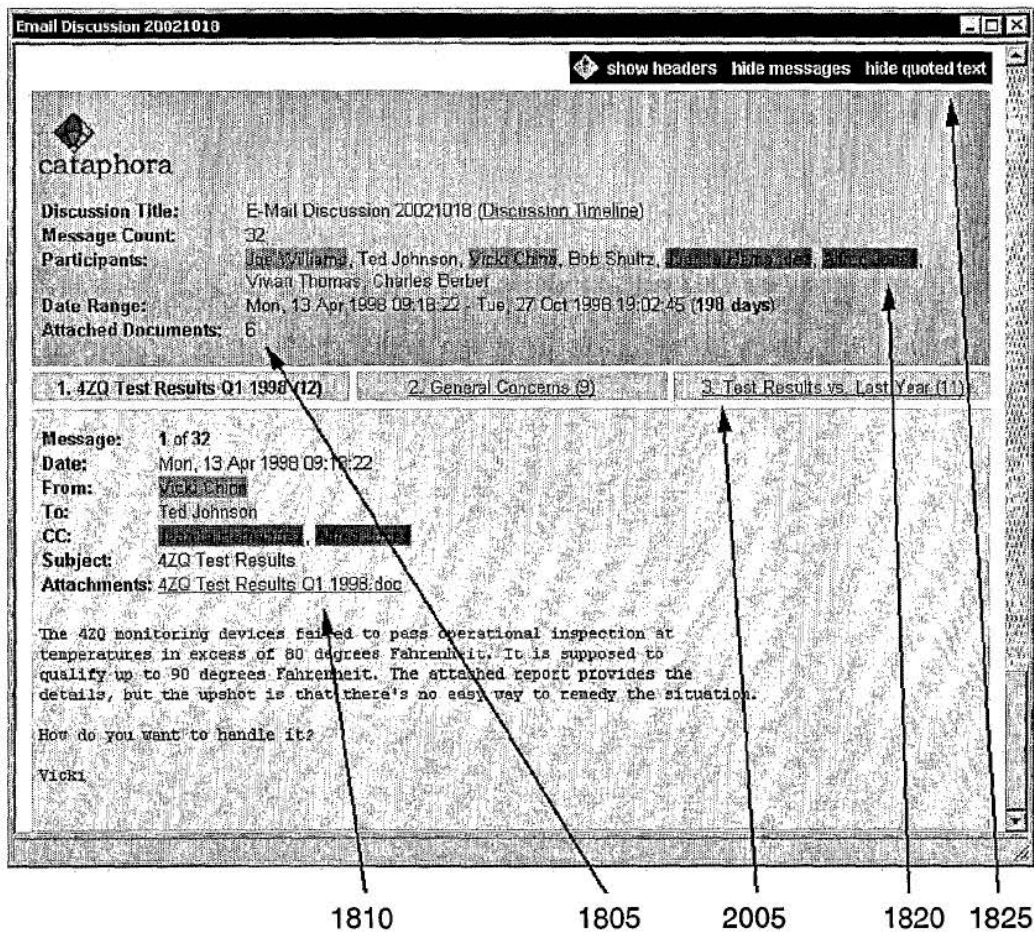


Figure 21: Transcript view, showing document type color-coding

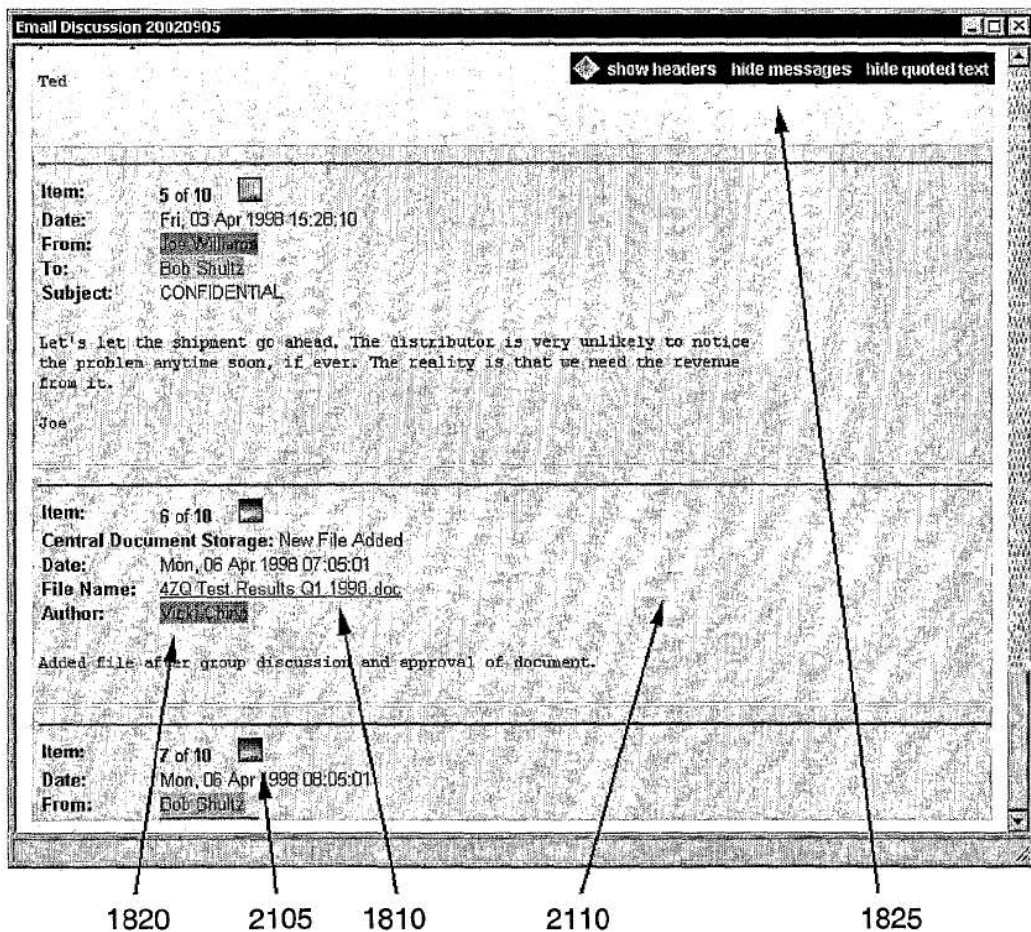


Figure 22: Transcript view, showing attachments

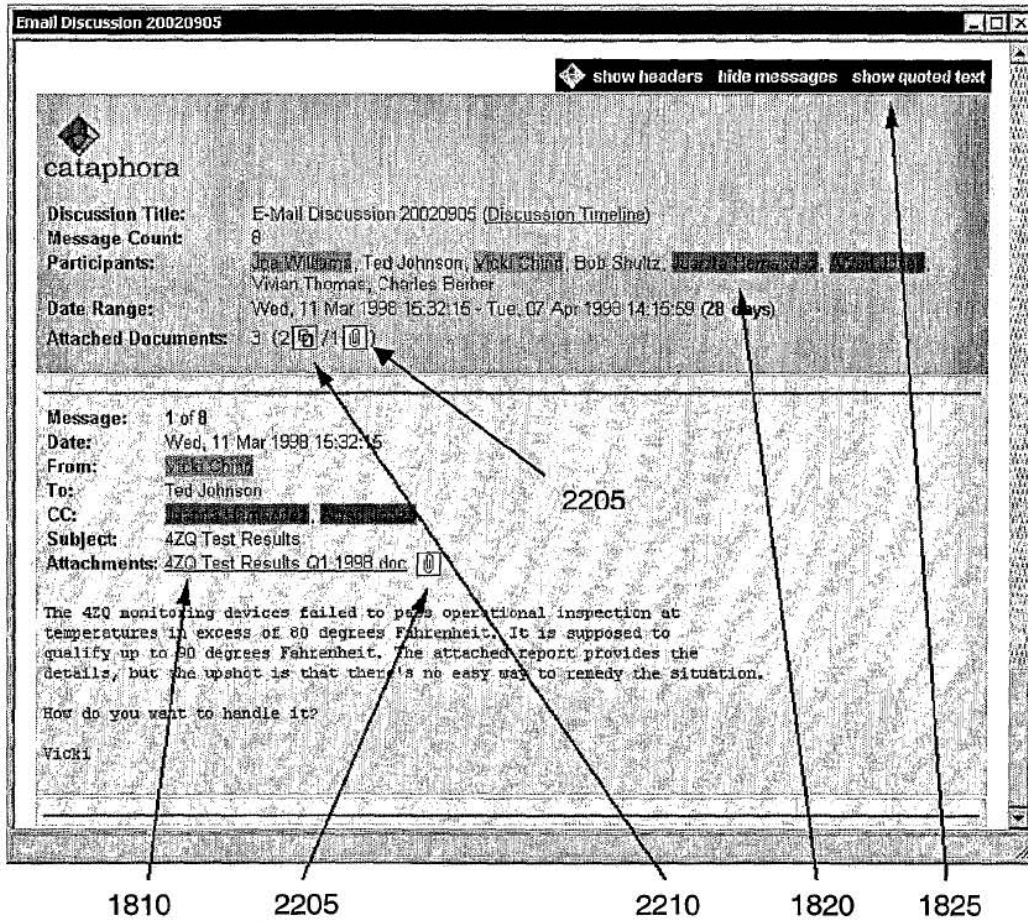


Figure 23: Transcript view, showing color-coding of quoted text

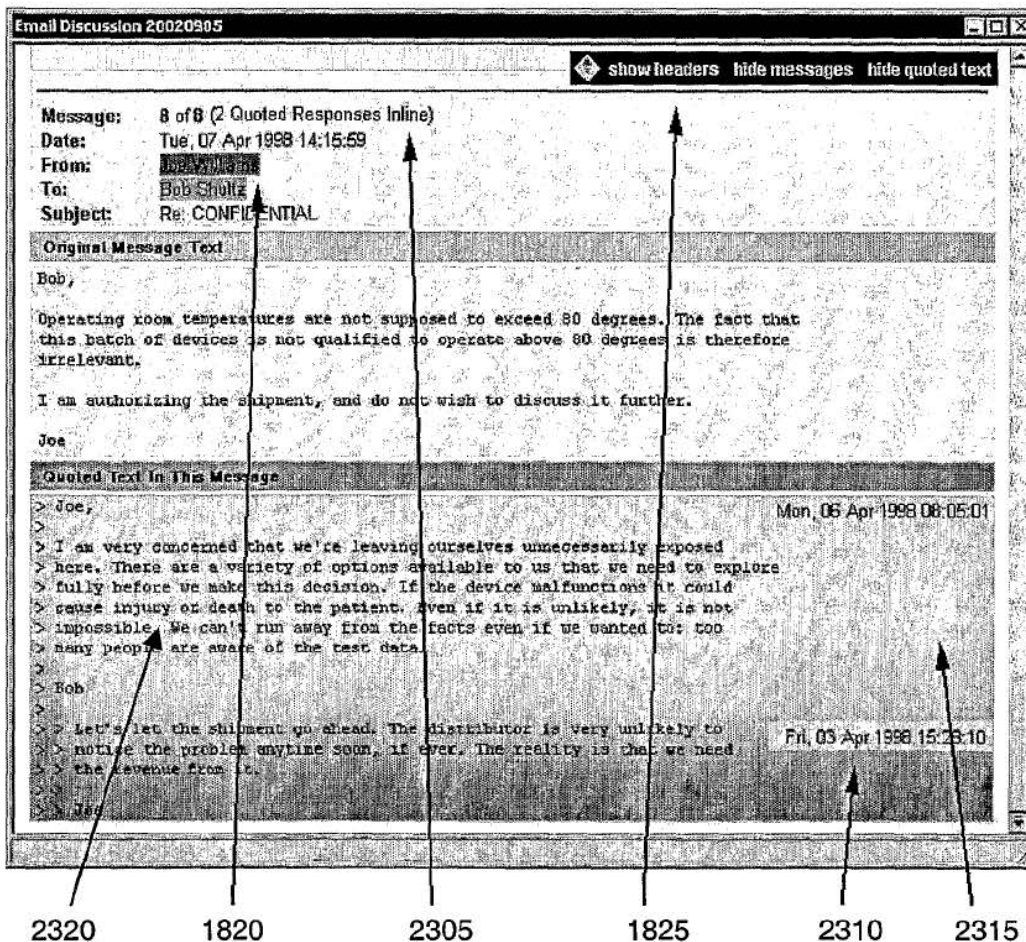


Figure 24: Transcript view showing deletion

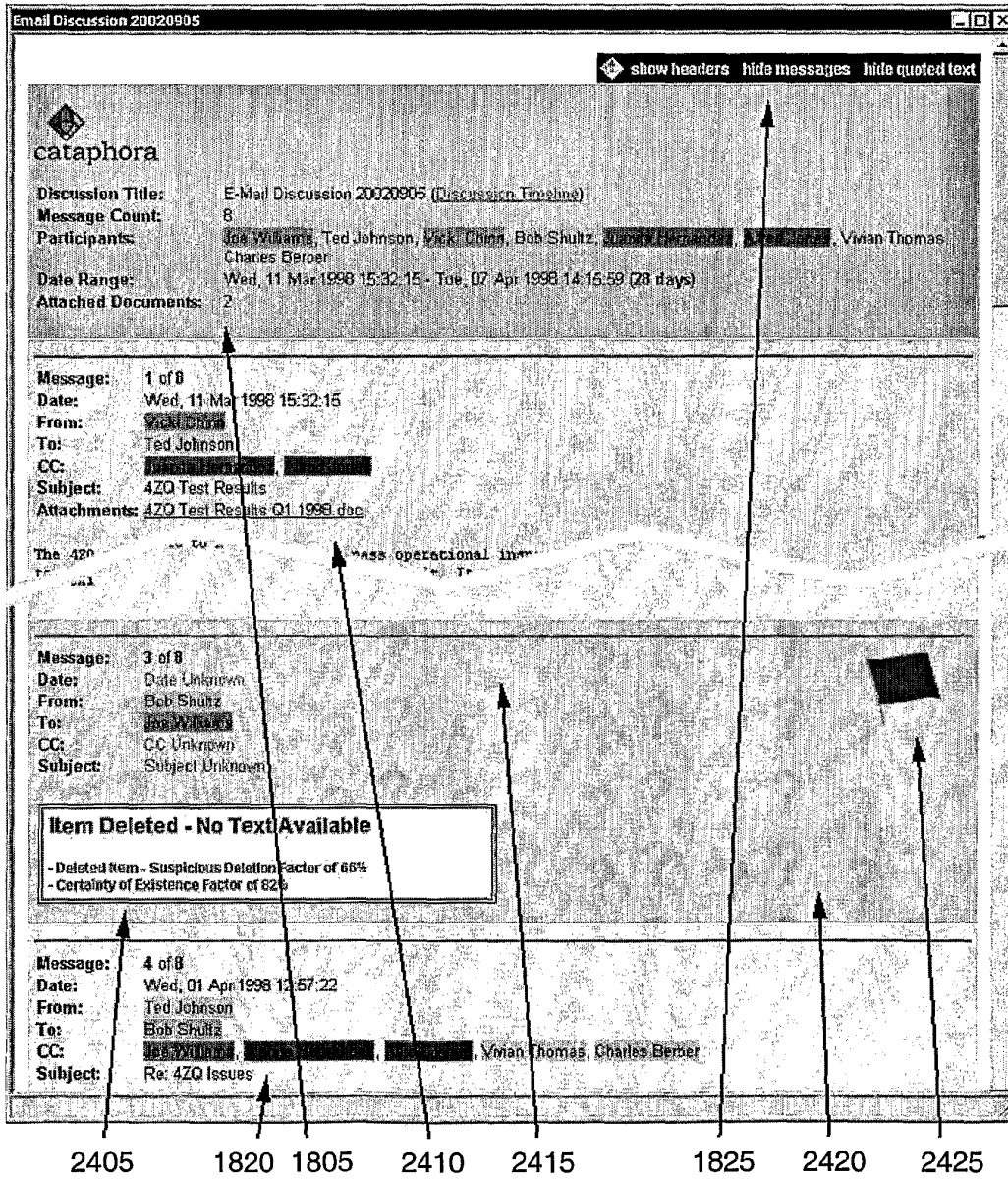


Figure 25: Transcript view showing Instant Messages (IMs)

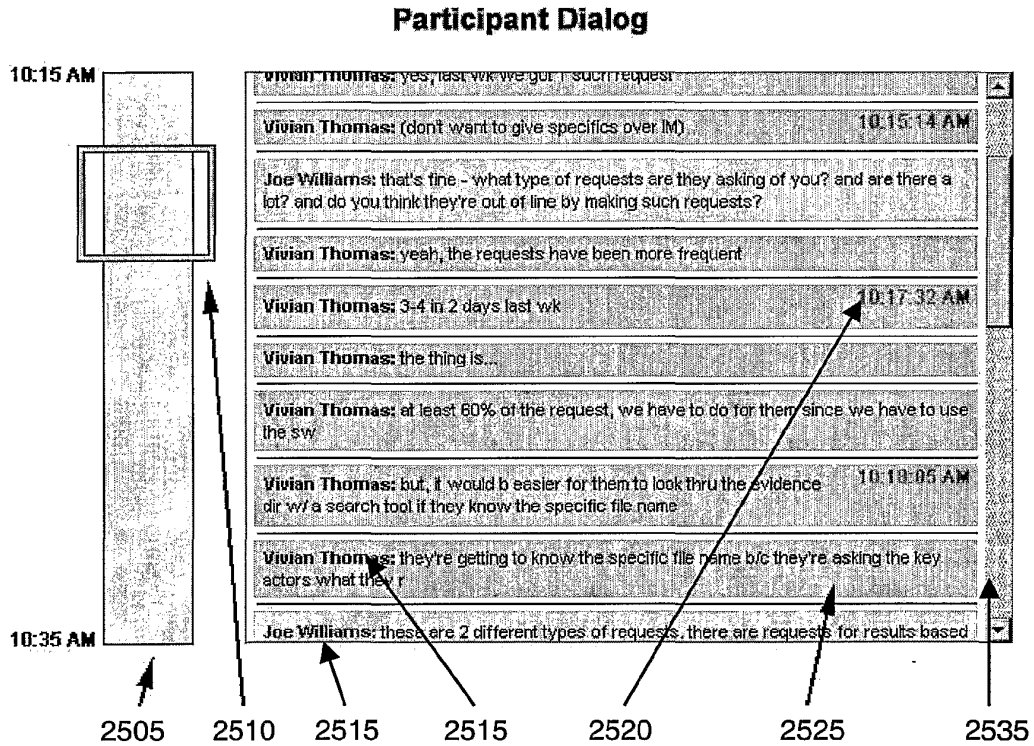











Figure 26: Query results view showing actor images

Discussion Title	Start Date	End Date	Primary Actors				
Question About Superior Audit	01/12/01	11/03/01	 Ted Johnson	 C. Berber	 Vicki Chinn		
Securitization Practices	04/23/01	09/18/01	 V. Thomas	 Vicki Chinn			
Risk Assessment Superior	03/09/01	05/05/01	 Joe Williams	 C. Berber	 V. Thomas	 Vicki Chinn	

◆ Display discussion

2605 2610 2615 2620 2625

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Figure 27: Matrix Query Results View

	2705	2705	2705	2705	2705
Discussion Name	Joe Rodd	Ann Warren	Mia Keller	Sue Garson	Bo Li
Q4 Projections	2710		2715		
Setting Analyst Expectations	2710			2720	
Revenue Recognition Rules - Reminder	2710				
Major Deal Review	2710	2710			

Figure 28: Saved queries

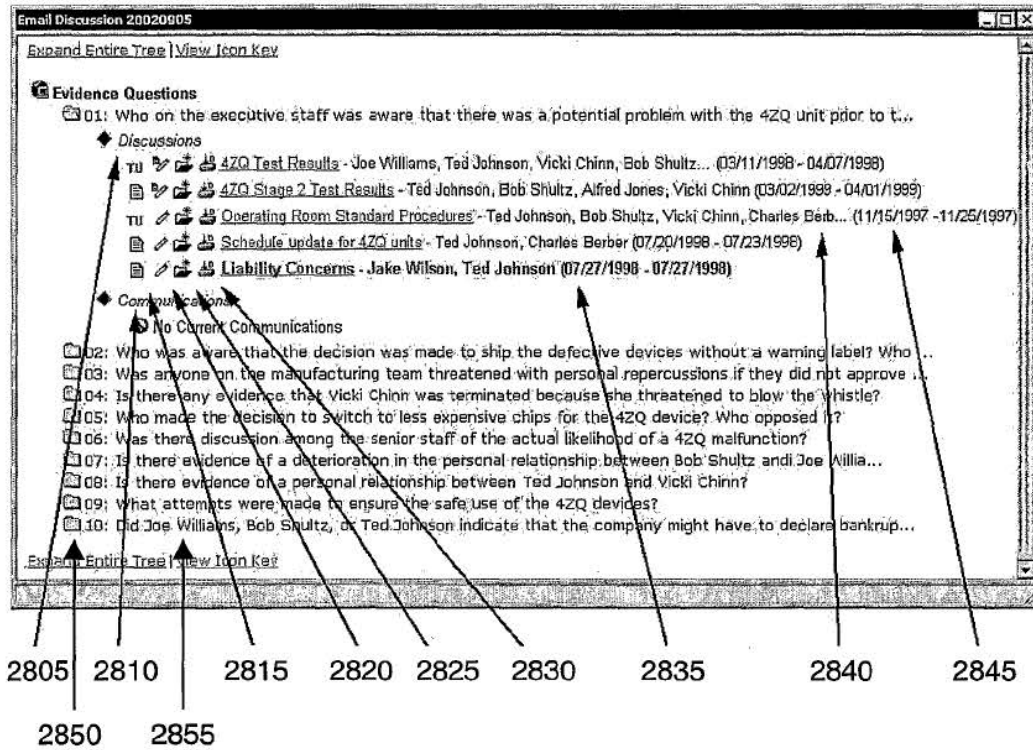





Figure 29: Querying tool


Content Terms or Phrases


People and Organizations



Ted Johnson


Joe Williams


Vivian Thomas


Charles Berber


Vicki Chinn


Acctg. Dept. 6

Events

Board Meeting (06/25/1998)
1999 Expo (03/15/1999)

Start Date **End Date**

06/24/1997 06/26/1997

Year	Month	Year	Month
1996	May	1996	May
1997	Jun	1997	Jun
1998	Jul	1998	Jul

June 1997							June 1997						
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30						29	30					

2905 2910 2915 2920 2925

Figure 30: Querying tool specifying actor involvement and using saved queries







Generate Query

Who Read Saw Received Created Changed

information related to

Additional Parameters

People and Organizations

 Ted Johnson	 Joe Williams
 Vivian Thomas	 Charles Berber
 Vicki Chinn	 Acctg. Dept. 6

Events

Board Meeting (06/25/1998)
1999 Expo (03/15/1999)

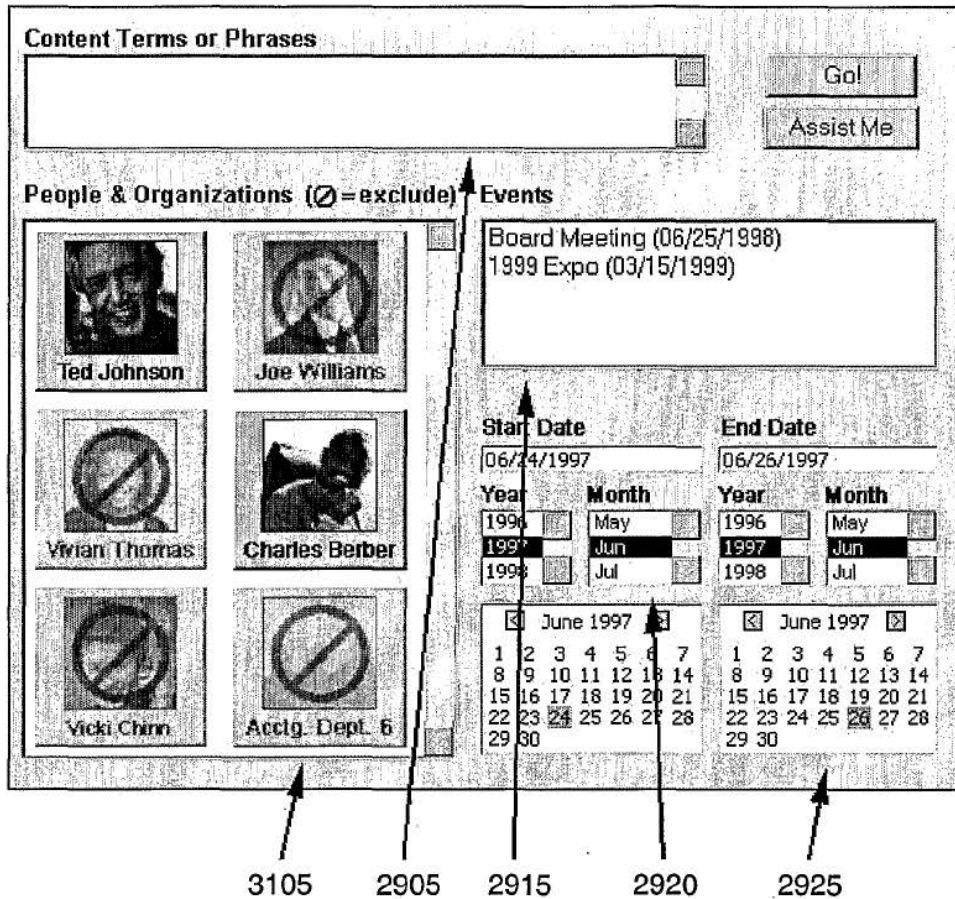
Start Date **End Date**

Year	Month	Year	Month
1996	May	1996	May
1997	Jun	1997	Jun
1998	Jul	1998	Jul

June 1997							June 1997						
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30						29	30					

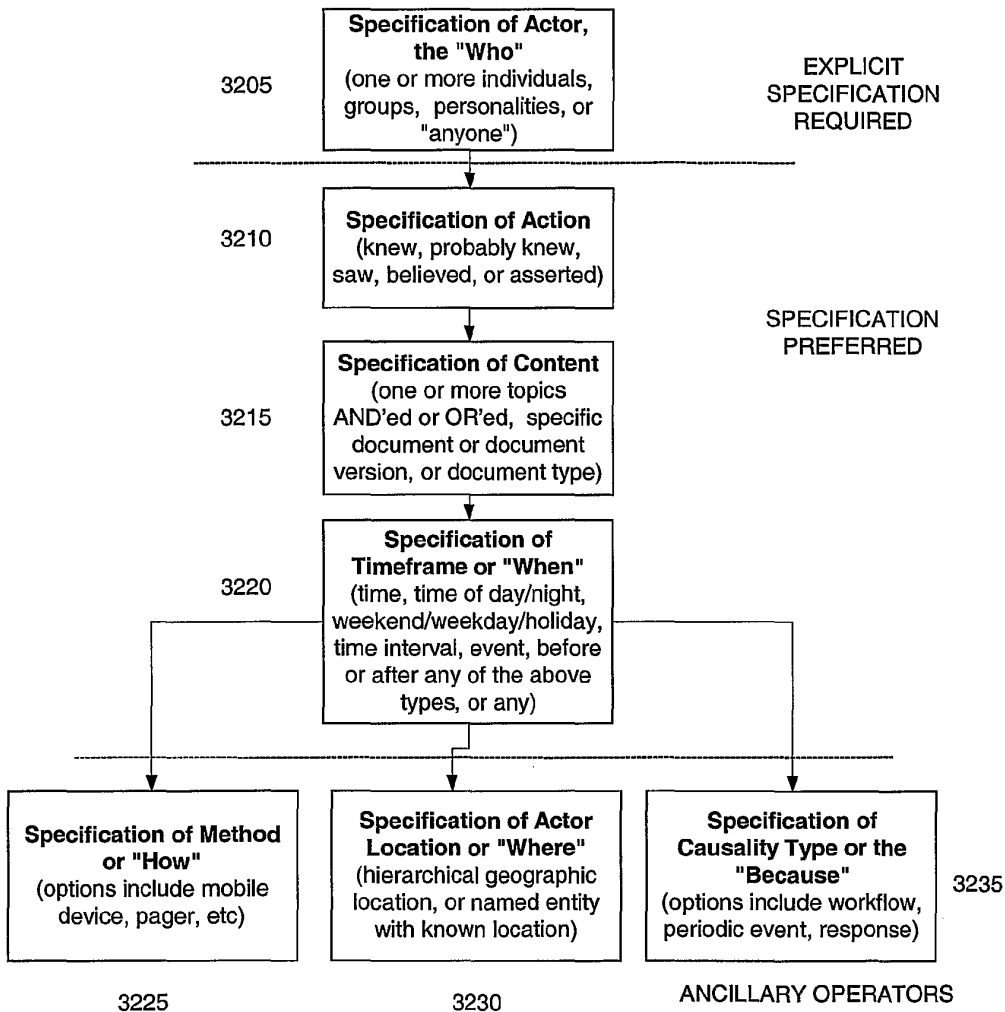
2910 3005 3010 2920 2925 2930

Figure 31: Querying tool specifying actors to exclude from the query



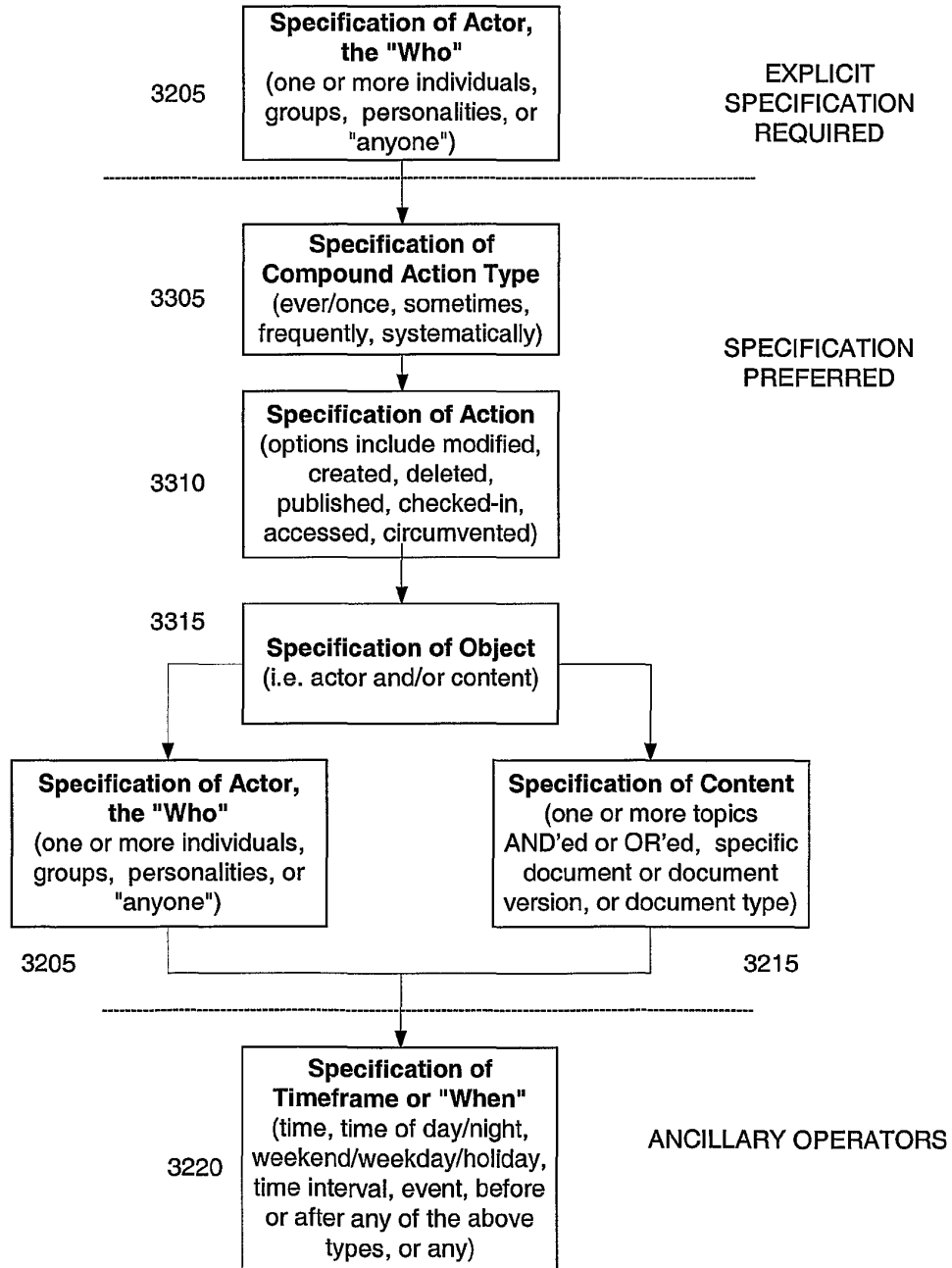
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Figure 32: Query Template 1



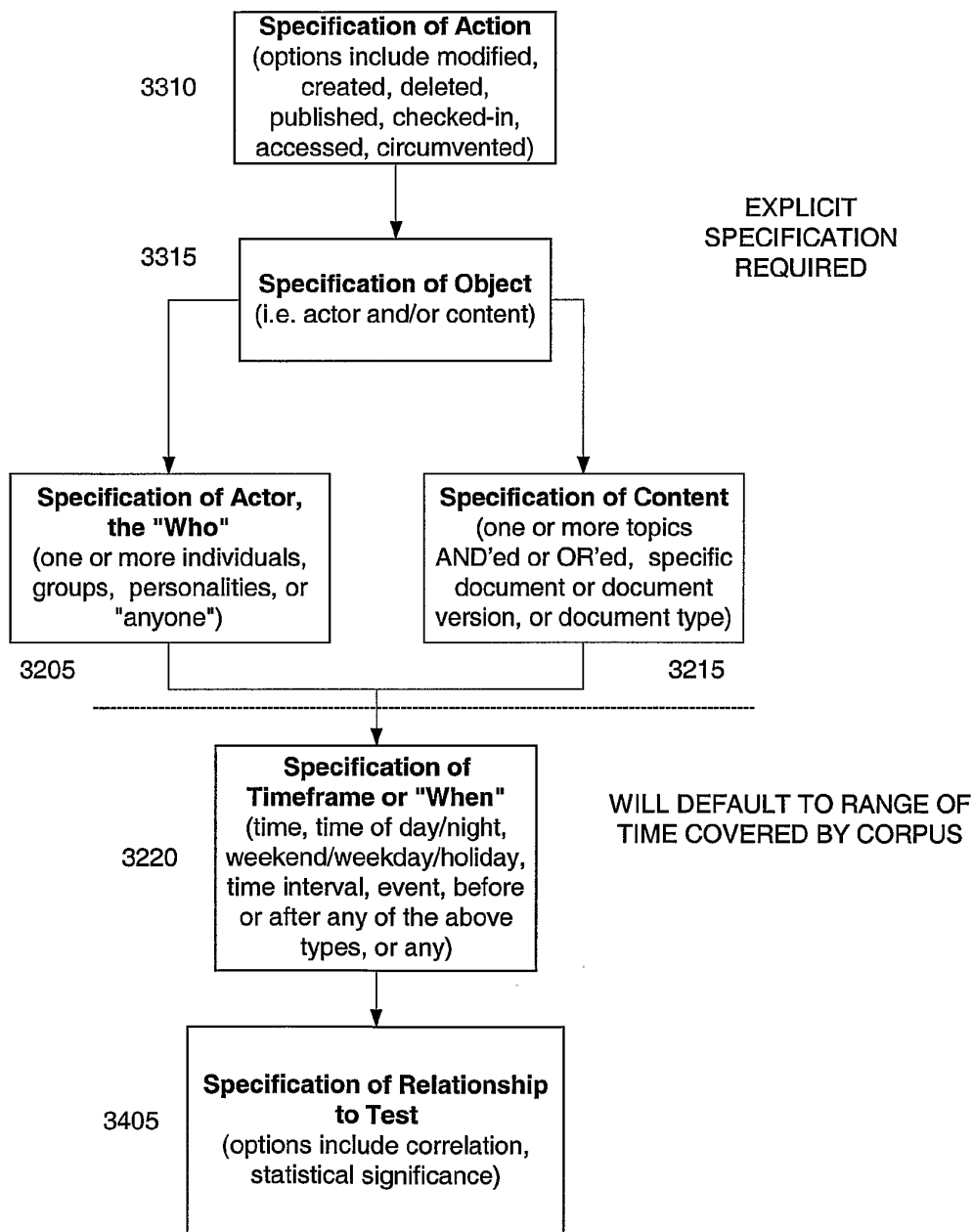
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Figure 33: Query Template 2



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Figure 34: Query Templates 3 & 4



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Figure 35: Query Components (document and operator types)

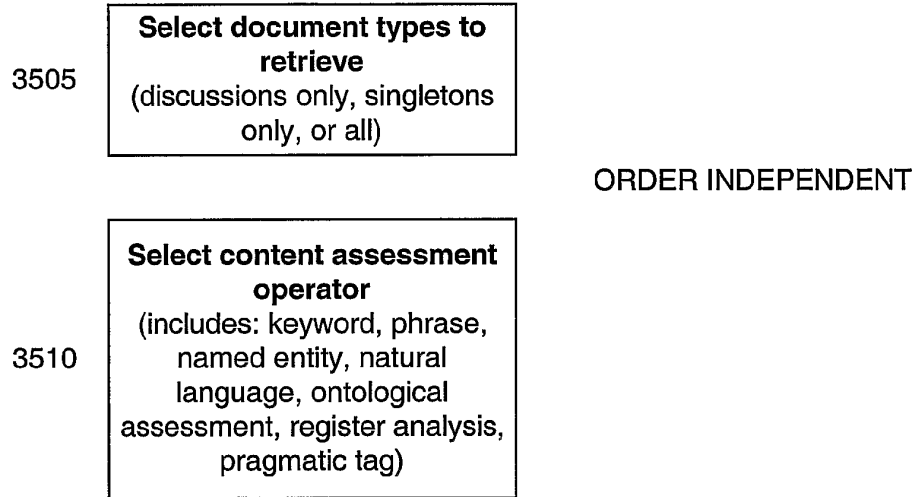
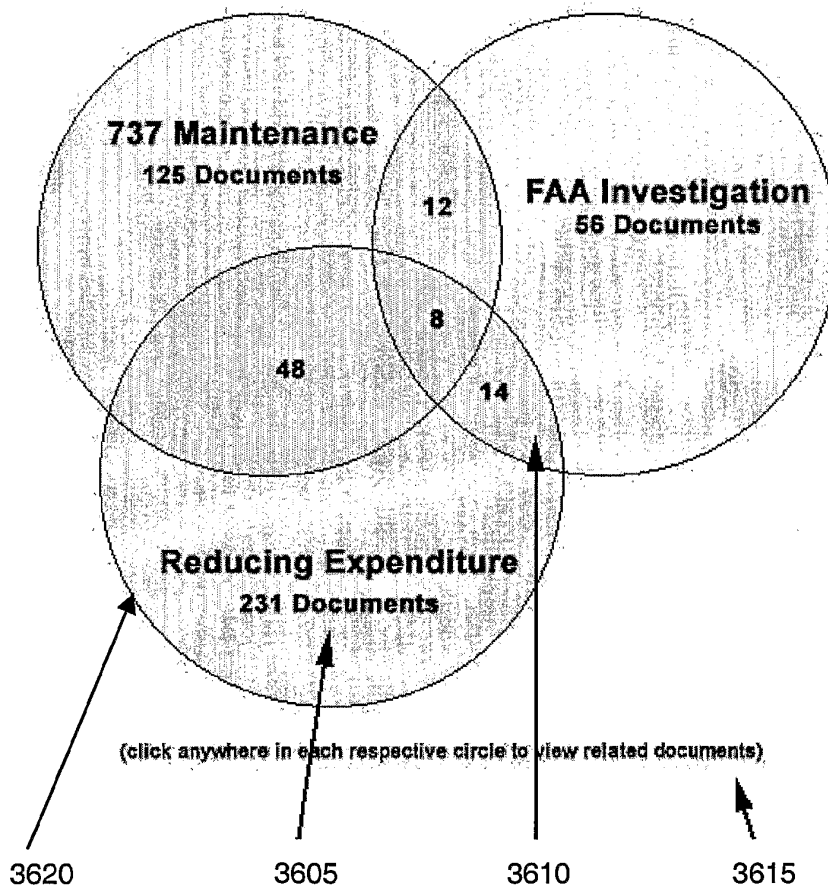


Figure 36: Venn diagram view of document categories

Data Breakdown By Document Category



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Figure 37a: Query by Example, Step 1

The screenshot shows a query interface with the following components:

- Content Terms or Phrases:** A large empty text box at the top.
- People and Organizations:** A grid of six items, each with a portrait and name:
 - Ted Johnson
 - Joe Williams
 - Vivian Thomas
 - Charles Berber
 - Vicki Chinn
 - Accg. Dept. 6
- Topics:** A list of topics in a scrollable box:
 - Company (General)
 - Corporate
 - Employees
 - Fraud
 - Hidden Information
- Content Type:** A dropdown menu currently set to "Spreadsheets".
- Ontology:** A dropdown menu currently set to "Financial".
- Time Range:** A horizontal bar with a range from 01/01/1999 to 01/01/2001. Below the bar are navigation buttons: "<< Back" and "Next >>".

Below the interface is a horizontal timeline with markers at 2910, 2905, 3705, 3710, 3715, and 3720. Arrows point from these markers to the interface:

- 2910 points to the "Vicki Chinn" portrait.
- 2905 points to the "People and Organizations" header.
- 3705 points to the "Accg. Dept. 6" item.
- 3710 points to the "Time Range" bar.
- 3715 points to the "Time Range" bar.
- 3720 points to the "Next >>" button.

Figure 37b: Query by Example, Step 2

