US005502839A

United States Patent [19]

Kolnick

[11] Patent Number: 5,502,839

[45] Date of Patent: Mar. 26, 1996

[54] **OBJECT-ORIENTED SOFTWARE ARCHITECTURE SUPPORTING INPUT/OUTPUT DEVICE INDEPENDENCE**

[75] Inventor: **Frank C. Kolnick**, Willowdale, Canada

[73] Assignee: **Motorola, Inc.**, Schaumburg, Ill.

[21] Appl. No.: **361,738**

[22] Filed: **Jun. 2, 1989**

Related U.S. Application Data

[63] Continuation of Ser. No. 619, Jan. 5, 1987, abandoned.

[51] **Int. Cl.**[6] **G06F 13/00**

[52] **U.S. Cl.** **395/800**; 364/228.2; 364/237.9; 364/239.9; 364/280; 364/284.2; 364/DIG. 1

[58] **Field of Search** ..... 364/200 MS File, 364/900 MS File; 395/500

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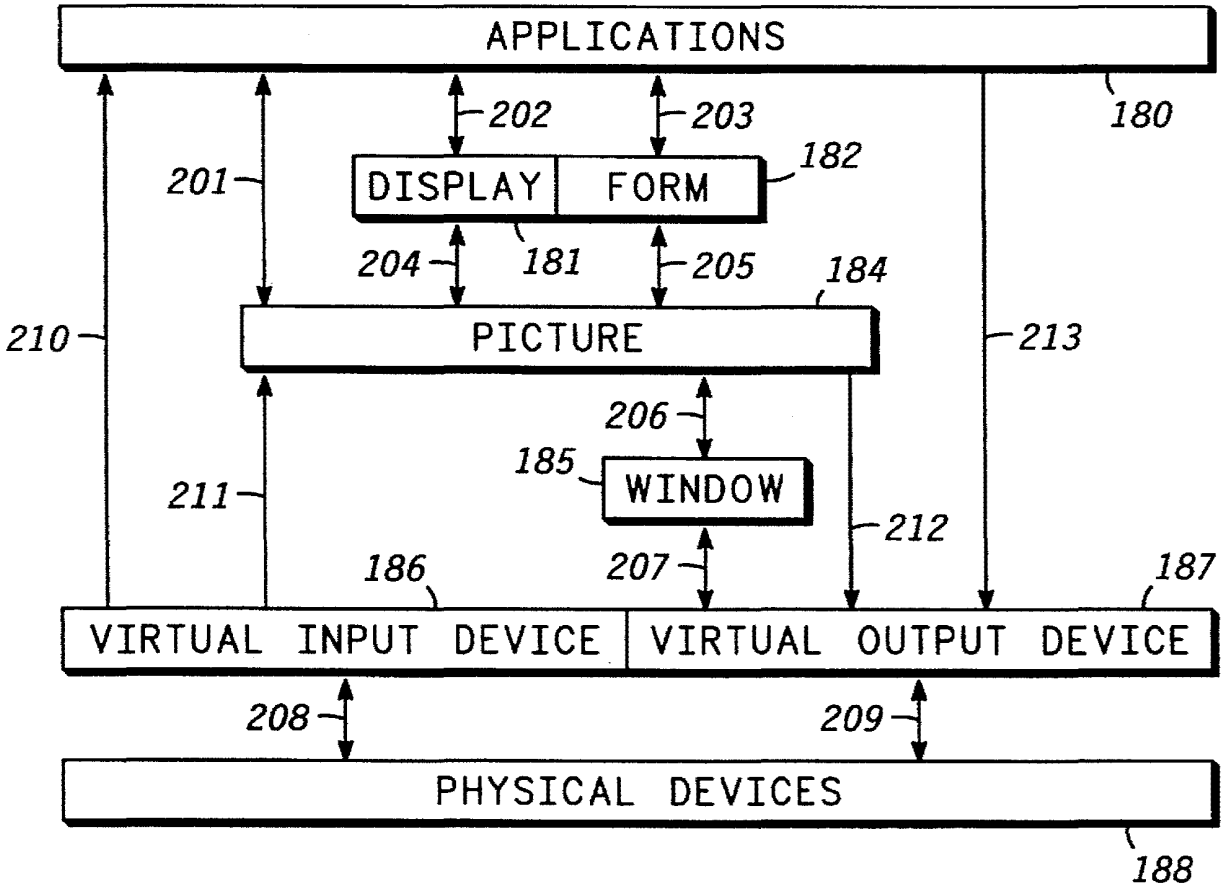
Primary Examiner—Kevin J. Teska
Assistant Examiner—Ayni Mohamed
Attorney, Agent, or Firm—Walter W. Nielsen; Harold C. McGurk; S. Kevin Pickens

[57] **ABSTRACT**

An object-oriented software architecture interacts with "real" input/output devices exclusively through "virtual" input/output devices. Since all human interface with the operating system is performed through such virtual devices, the system can accept any form of real input or output devices. The lowest level of the operating system converts input from any physical device to virtual form and converts virtual output into suitable physical output. Any number of physical devices can be connected to, removed from, or replaced in the system without disrupting the system.

23 Claims, 9 Drawing Sheets



US005764899A

United States Patent [19]

Eggleston et al.

[11] Patent Number: 5,764,899

[45] Date of Patent: Jun. 9, 1998

[54] **METHOD AND APPARATUS FOR COMMUNICATING AN OPTIMIZED REPLY**

[75] Inventors: **Gene Eggleston**, Cary; **Mitch Hansen**, Fox River Grove; **Anthony Rzany**, Crystal Lake, all of Ill.

[73] Assignee: **Motorola, Inc.**, Schaumburg, Ill.

[21] Appl. No.: **574,737**

[22] Filed: **Dec. 19, 1995**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 557,657, Nov. 13, 1995.

[51] **Int. Cl.**[6] **G06F 15/163**

[52] **U.S. Cl.** **395/200.33**; 348/6; 348/7

[58] **Field of Search** ..... 364/514 R, 715.02; 348/6, 7, 14, 16; 395/114, 200.33; 370/280, 353, 355

[56] **References Cited**

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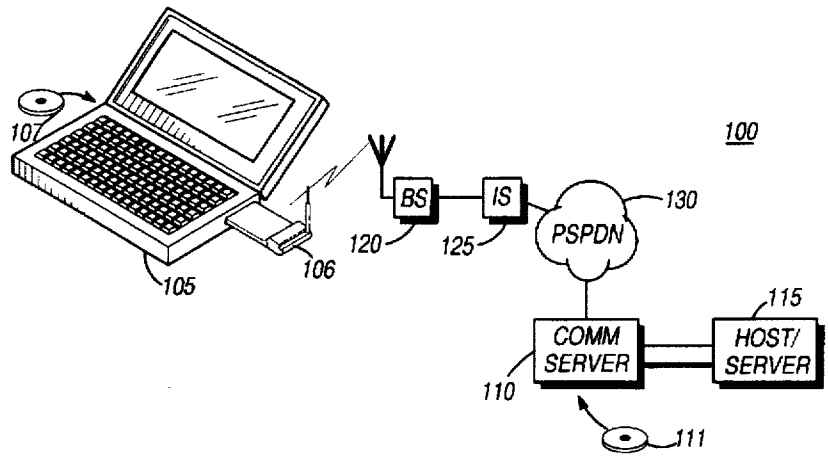
Primary Examiner—Ellis B. Ramirez
Assistant Examiner—Thomas Peeso
Attorney, Agent, or Firm—J. Ray Wood

[57] **ABSTRACT**

For optimized reply, when sending a reply (**902**) in a first embodiment a remote communication unit's controller (**206**) generates a delta between a preceding message and the reply message, and forms an optimized reply (**904**) using the delta and an identifier of the preceding message. On receiving the optimized reply, the communication server uses the data unit identifier to retrieve (**910**) the preceding message from a further server (e.g., the post office mailbox of the user associated with the remote unit), reconstructs (**914**) the full reply from the retrieved message and the delta, and forwards (**916**) the full reply to the addressee. When receiving a reply for the remote unit (**918**), an index is preferably maintained by both units of mail stored at the remote unit. From this index a preceding message forming part of the reply is identified (**920**). An optimized reply is then similarly formed (**922**) and sent to the remote unit.

12 Claims, 8 Drawing Sheets



US005784001A

United States Patent [19]

Deluca et al.

[11] **Patent Number: 5,784,001**

[45] **Date of Patent: Jul. 21, 1998**

[54] **METHOD AND APPARATUS FOR PRESENTING GRAPHIC MESSAGES IN A DATA COMMUNICATION RECEIVER**

[75] Inventors: **Joan Deluca**, Boca Raton; **Douglas Kraul**, Parkland; **Charles Edward Batey, Jr.**, Lake Worth, all of Fla.

[73] Assignee: **Motorola, Inc.**, Schaumburg, Ill.

[21] Appl. No.: **898,640**

[22] Filed: **Jul. 21, 1997**

Related U.S. Application Data

[63] Continuation of Ser. No. 560,604, Nov. 20, 1995, abandoned.

[51] **Int. Cl.**[6] **G08B 5/22**

[52] **U.S. Cl.** **340/825.44**; 345/133

[58] **Field of Search** 340/825.44; 345/133, 345/122

[56] **References Cited**

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9103885	3/1991	WIPO	455/154

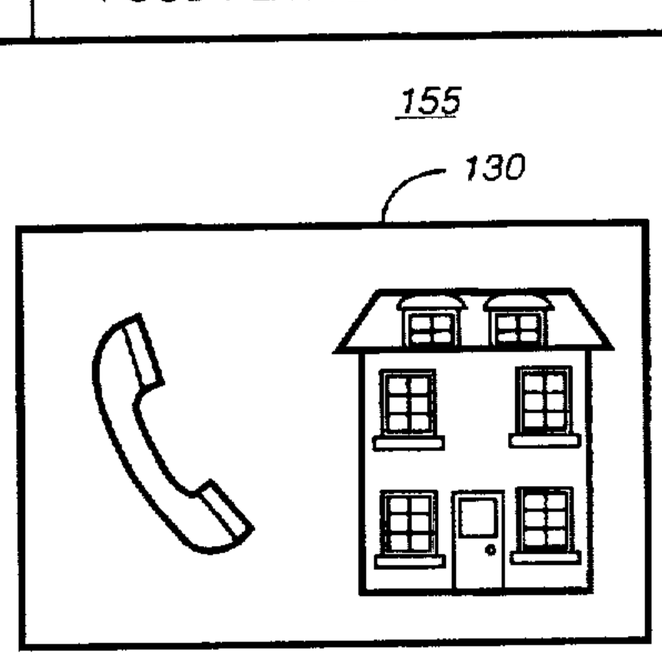
Primary Examiner—Brian Zimmerman
Assistant Examiner—Edward Merz

[57] **ABSTRACT**

A data communication receiver (**100**) includes a receiver (**110**) for receiving a message including at least one code, a database (**155**) for storing codes and image data associated with the codes, and a presentation element (**150**) for locating the at least one code in the database (**155**). The presentation element (**150**) then retrieves the image data associated with the at least one code. The image data associated with the at least one code is representative of at least one image. The data communication receiver (**100**) also includes a display (**130**) coupled to the presentation element (**150**) for presenting the at least one image as a graphic message.

6 Claims, 8 Drawing Sheets

CODE	IMAGE
#01	TELEPHONE
#02	HOUSE
#03	OFFICE
#04	FAMILY
#05	TRAIN
#06	PERSON RUNNING
#07	COFFEE MUG
#08	CLOCK FOLLOWED BY TIME
#09	FOOD PLATTER



US006272333B1

(12) **United States Patent**
Smith

(10) **Patent No.: US 6,272,333 B1**
(45) **Date of Patent: Aug. 7, 2001**

(54) **METHOD AND APPARATUS IN A WIRELESS COMMUNICATION SYSTEM FOR CONTROLLING A DELIVERY OF DATA**

(75) Inventor: **Dwight Randall Smith**, Grapevine, TX (US)

(73) Assignee: **Motorola, Inc.**, Schaumburg, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/096,664**

(22) Filed: **Jun. 12, 1998**

(51) **Int. Cl.**[7] **H04M 3/00**
(52) **U.S. Cl.** **455/418**; 455/419; 455/575
(58) **Field of Search** 455/418, 419, 455/420, 38.1, 524, 525, 575, 551, 88, 68, 70, 186.1, 517; 375/222, 202; 395/200.15, 200.18, 200.2

(56) **References Cited**

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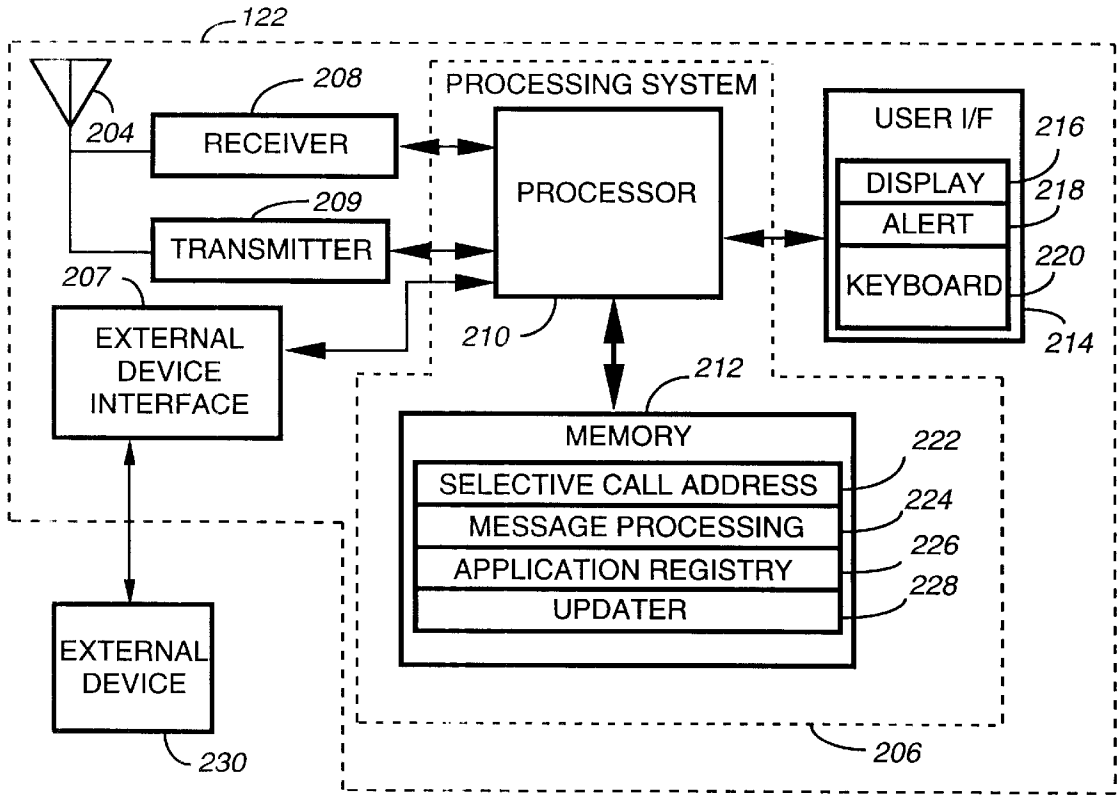
Primary Examiner—Daniel Hunter
Assistant Examiner—C. Chow
(74) *Attorney, Agent, or Firm*—R. Louis Breeden

(57) **ABSTRACT**

A subscriber unit **(122)** maintains an application registry **(226)** for registering **(404)** applications accessible to the subscriber unit. A fixed portion **(102)** of a wireless communication system keeps **(514)** a current copy **(324)** of the application registry of the subscriber unit, and checks **(520)** the current copy of the application registry in response to having data to send to the subscriber unit. The fixed portion sends **(526)** the data only when the fixed portion determines **(522)** that an application compatible with the data is accessible to the subscriber unit.

13 Claims, 4 Drawing Sheets



US006408176B1

(12) **United States Patent**
Urs

(10) **Patent No.: US 6,408,176 B1**
(45) **Date of Patent: Jun. 18, 2002**

(54) **METHOD AND APPARATUS FOR INITIATING A COMMUNICATION IN A COMMUNICATION SYSTEM**

(75) Inventor: **Kamala D. Urs**, Bartlett, IL (US)

(73) Assignee: **Motorola, Inc.**, Schaumburg, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/114,508**

(22) Filed: **Jul. 13, 1998**

(51) **Int. Cl.**[7] **H04Q 7/20**; H04Q 7/38

(52) **U.S. Cl.** **455/413**; 455/412; 455/403; 455/414; 379/88.13; 379/100.08

(58) **Field of Search** 455/413, 412, 455/403, 466, 414, 31.1, 31.2, 38.1, 38.4, 460, 517, 550; 379/88.13, 88.22, 100.08

(56) **References Cited**

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Primary Examiner—Lee Nguyen
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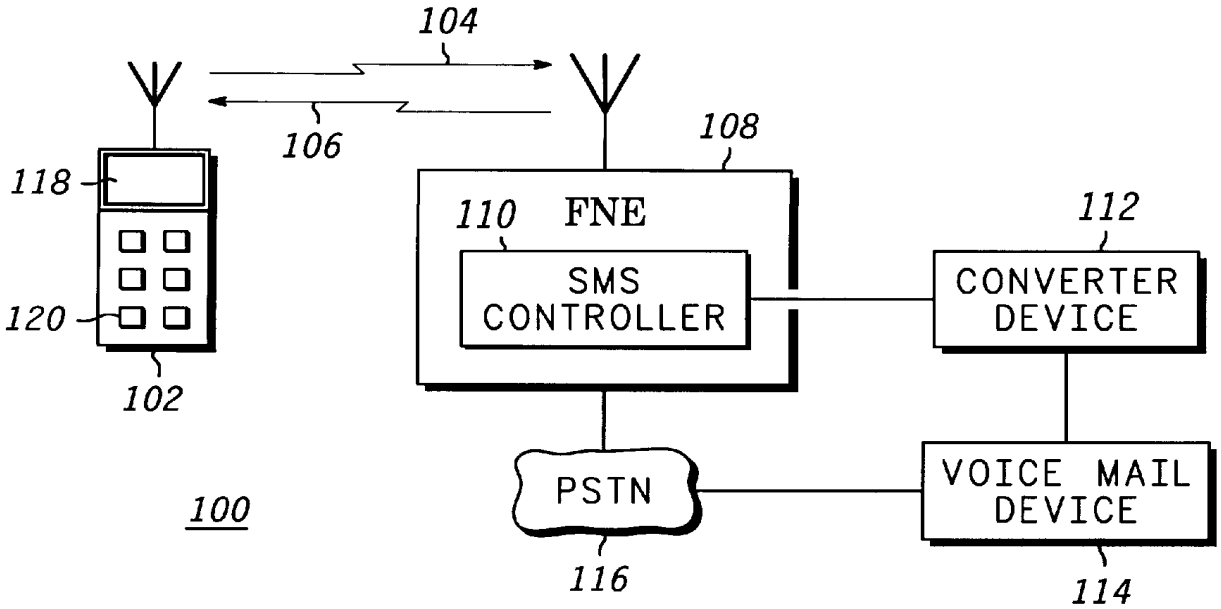
(74) *Attorney, Agent, or Firm*—Daniel C. Crilly; Jeffrey K. Jacobs

(57) **ABSTRACT**

Caller-related information, such as a telephone number, in a voice mail message intended for a communication unit **(102)** is extracted from the voice mail message and converted into an alpha-numeric string by a converter device **(112)**. The alpha-numeric string is conveyed by a messaging device **(110)** to the communication unit and stored in the communication unit. Using the stored caller-related information, a user of the communication unit is able to repeatedly initiate a call to the caller identified by the caller-related information without having to access a voice mail device or enter the caller-related information manually.

15 Claims, 2 Drawing Sheets



US006757544B2

(12) **United States Patent**
Rangarajan et al.

(10) **Patent No.: US 6,757,544 B2**
(45) **Date of Patent: Jun. 29, 2004**

(54) **SYSTEM AND METHOD FOR DETERMINING A LOCATION RELEVANT TO A COMMUNICATION DEVICE AND/OR ITS ASSOCIATED USER**

(75) Inventors: **Jayanthi Rangarajan**, Naperville, IL (US); **David Ladd**, Downers Grove, IL (US); **Senaka Balasuriya**, Westmont, IL (US); **Curtis Tuckey**, Chicago, IL (US)

(73) Assignee: **Motorola, Inc.**, Schaumburg, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/930,049**

(22) Filed: **Aug. 15, 2001**

(65) **Prior Publication Data**

US 2003/0050075 A1 Mar. 13, 2003

(Under 37 CFR 1.47)

(51) **Int. Cl.**[7] **H04Q 7/20**

(52) **U.S. Cl.** **455/456.1**; 455/414.2; 455/414.3; 455/404.1

(58) **Field of Search** 455/456.1, 457, 455/414.1–414.3, 404.1, 456.2, 404.2, 522.1, 456.3; 342/357.01–357.06, 357.08, 357.09, 357.1–357.17; 701/207–210, 213, 214, 200

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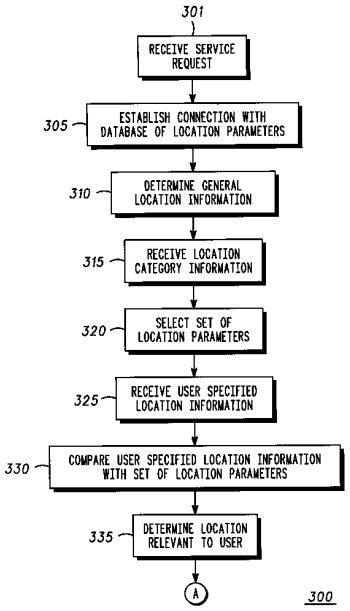
Primary Examiner—Erika Gary
(74) *Attorney, Agent, or Firm*—Randall S. Vaas; Hisashi D. Watanabe

(57) **ABSTRACT**

A method of determining a location relevant to a user of a communication device is provided. The method involves determining general location information of the location relevant to the user and determining a list of location parameters from the general location information. Specific location of the communication device is also determined. The location relevant to the user is then determined by comparing the list of location parameters with the specific location information. Systems and programs for using the method are also provided.

10 Claims, 4 Drawing Sheets



US006983370B2

(12) **United States Patent**
Eaton et al.

(10) **Patent No.: US 6,983,370 B2**
(45) **Date of Patent: Jan. 3, 2006**

(54) **SYSTEM FOR PROVIDING CONTINUITY BETWEEN MESSAGING CLIENTS AND METHOD THEREFOR**

(75) Inventors: **Eric Thomas Eaton**, Lake Worth, FL (US); **David Jeffery Hayes**, Lake Worth, FL (US); **Von Alan Mock**, Boynton Beach, FL (US)

(73) Assignee: **Motorola, Inc.**, Schaumberg, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 875 days.

(21) Appl. No.: **09/995,338**

(22) Filed: **Nov. 27, 2001**

(65) **Prior Publication Data**

US 2003/0101343 A1 May 29, 2003

(51) **Int. Cl.**
G06F 1/26 (2006.01)

(52) **U.S. Cl.** **713/182**; 713/153; 713/161; 713/189; 713/193; 713/200; 713/201

(58) **Field of Classification Search** 713/182, 713/153, 161, 189, 193, 200, 201
See application file for complete search history.

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Primary Examiner—Thomas R. Peeso
(74) *Attorney, Agent, or Firm*—Randi L. Karpinia; Sylvia Chen

(57) **ABSTRACT**

A messaging communication system **(10)** includes a plurality of messaging clients **(12)**. A first messaging client **(14)** establishes a first communication connection **(16)** operating using a plurality of client data **(25)**. The first messaging client **(14)** transfers the plurality of client data **(25)** to a second messaging client **(20)**. The second messaging client **(20)** establishes a second communication connection **(22)** operating using the plurality of client data **(25)**.

67 Claims, 24 Drawing Sheets