

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 December 2004 (09.12.2004)

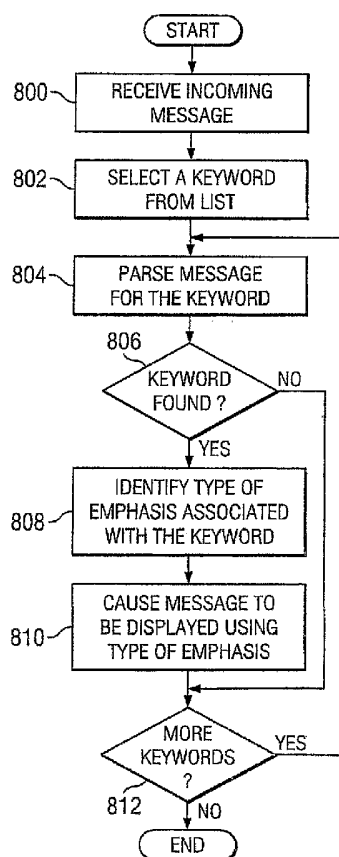
PCT

(10) International Publication Number
WO 2004/107689 A1

- (51) International Patent Classification⁷: **H04L 12/58**
- (21) International Application Number:
PCT/GB2004/002044
- (22) International Filing Date: 11 May 2004 (11.05.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/447,840 29 May 2003 (29.05.2003) US
- (71) Applicant (for all designated States except US): **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, New York 10504 (US).
- (71) Applicant (for MG only): **IBM UNITED KINGDOM LIMITED** [GB/GB]; PO Box 41, North Harbour, Portsmouth Hampshire PO6 3AU (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **JONES, Corradino** [US/US]; 2804 Winding Shore Lane, Pflugerville, Texas 78660 (US). **VAIDYANATHAN, Basu** [US/US]; 10436 Ember Glen Drive, Austin, Texas 78726 (US).
- (74) Agent: **MATHER, Belinda, Jane**; IBM United Kingdom Limited, Intellectual Property Law, Hursley Park, Winchester Hampshire SO21 2JN (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR MANAGING MESSAGES SENT DURING A MESSAGING SESSION



(57) Abstract: A method, apparatus, and computer instructions for managing messages. A message is received during a messaging session. Responsive to receiving the message, a determination is made as to whether a particular string in the message matches a selected string. Responsive to the particular string matching the selected string, a display of the string with a selected type of emphasis is caused. The displaying of the text with the emphasis occurs dynamically during the messaging session.

WO 2004/107689 A1



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

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

Published:

— *with international search report*

METHOD AND APPARATUS FOR MANAGING MESSAGES
SENT DURING A MESSAGING SESSION

5 **Technical Field**

10 The present invention relates generally to an improved data processing system and in particular to a method, apparatus, and computer instructions for processing data. Still more particularly, the present invention provides a method, apparatus, and computer instructions for managing messages sent during a messaging session.

Background to the Invention

15 Instant messaging is an online chat medium, allowing users to communicate with each other and to collaborate in real-time over a network data processing system. Instant messaging is commonly used over the Internet. Instant messaging applications monitor and report the status of users that have established each other as online contacts. This information is typically presented to a user in a window. Instant messaging applications also are often used by users conducting business. By utilizing instant messaging, business users can view each other's availability and initiate a text conversation with colleagues or customers when a desired contact becomes available. Millions of users communicate using instant messaging systems every day. With instant messaging becoming an important part of both personal and business communications, functionality and usability enhancements are important to the continued success of this type of communication tool.

30 Typically, instant messaging occurs between two parties while a chat session occurs between three or more parties. In either case, oftentimes different topics are discussed during the messaging session. With two parties, it is sometimes difficult to focus on a particular subject when one or both parties to this session are introducing new topics. Further, responses to a topic may occur during the discussion of another topic. When three or more parties are present in a messaging session, many topics are often being discussed in which some parties may only participate in a subset of those topics.

40 Oftentimes, a party may be interested only in a particular topic or in a question directed directly towards that party. The party interested in a particular topic or question is required to scroll up or down the

screen to identify messages relating to the topic or question of interest. Such a task can be frustrating when many messages have been exchanged and many different topics are being discussed during the messaging session.

Therefore, it would be advantageous to have an improved method, apparatus, and computer instructions for managing messages occurring during a messaging session.

SUMMARY OF THE INVENTION

The present invention provides a method, apparatus, and computer instructions for managing messages. A message is received during a messaging session. Responsive to receiving the message, a determination is made as to whether a particular string in the message matches a selected string. Responsive to the particular string matching the selected string, a display of the string with a selected type of emphasis is caused. The displaying of the text with the emphasis occurs dynamically during the messaging session.

Preferably receiving the message, determining whether a particular string in the message matches a selected string, and causing a display of the string with a selected type of emphasis is performed by one of a client messaging program or a server messaging program.

Optionally, responsive to the particular string matching the selected string, the message is displayed using the selected type of emphasis.

Optionally, responsive to the particular string matching the selected string, the string is highlighted.

Optionally and determination is made as to whether the particular message matches another selected string and responsive to the particular string matching another selected string, the string is displayed using another type of emphasis different from the selected type of emphasis.

Note that the selected type of emphasis could be, for example, at least one of a particular color, bold text, italicized text, underlined text, a selected font type, a selected font size, flashing text, and audio presentation, and a graphical indicator.

Optionally the selected string is a keyword.

Optionally the message is displayed in association with a user name of a user originating the message and the user name is displayed using the selected type of emphasis.

Optionally the selected string is one from a set of strings, each string in the set of strings is associated with a different color, and the selected type of emphasis is the color associated with the selected string.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described, by way of example only, with reference to a preferred embodiment thereof, as illustrated in the accompanying drawings, in which:

Figure 1 is a pictorial representation of a network of data processing systems in which the present invention may be implemented;

Figure 2 is a block diagram of a data processing system that may be implemented as a server in accordance with a preferred embodiment of the present invention;

Figure 3 is a block diagram illustrating a data processing system in which the present invention may be implemented;

Figures 4A and 4B are diagrams illustrating the flow of messages between client applications in a messaging session in accordance with a preferred embodiment of the present invention;

Figure 5 is an example of a keyword table in accordance with a preferred embodiment of the present invention;

Figure 6 is a diagram of a messaging window in a messaging client in accordance with a preferred embodiment of the present invention;

Figure 7 is a flowchart of a process for defining a keyword and an associated emphasis in accordance with a preferred embodiment of the present invention; and

Figure 8 is a flowchart of a process for handling messages in accordance with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the figures, **Figure 1** depicts a pictorial representation of a network of data processing systems in which the present invention may be implemented. Network data processing system **100** is a network of computers in which the present invention may be implemented. Network data processing system **100** contains a network **102**, which is the medium used to provide communications links between various devices and computers connected together within network data processing system **100**. Network **102** may include connections, such as wire, wireless communication links, or fiber optic cables.

In the depicted example, server **104** is connected to network **102** along with storage unit **106**. In addition, clients **108**, **110**, and **112** are connected to network **102**. These clients **108**, **110**, and **112** may be, for example, personal computers or network computers. In the depicted example, server **104** provides data, such as boot files, operating system images, and applications to clients **108-112**. Specifically, server **104** may act as a messaging server to facilitate the transfer of messages between clients **108**, **110**, and **112**. Depending on the particular implementation, server **104** may act only to provide an identification of addresses for the clients to send messages to each other directly. In other implementations, server **104** may act as a conduit through which all the messages may flow. In this type of implementation, the clients do not send messages to other clients, but send them to server **104**, which in turn sends them to the appropriate client.

Network data processing system **100** may include additional servers, clients, and other devices not shown. In the depicted example, network data processing system **100** is the Internet with network **102** representing a worldwide collection of networks and gateways that use the Transmission Control Protocol/Internet Protocol (TCP/IP) suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers, consisting of thousands of commercial, government, educational and other computer systems that route data and messages. Of course, network data processing system **100** also may be implemented as a number of different types of networks, such as for example, an intranet, a local area

network (LAN), or a wide area network (WAN). **Figure 1** is intended as an example, and not as an architectural limitation for the present invention.

Referring to **Figure 2**, a block diagram of a data processing system that may be implemented as a server, such as server **104** in **Figure 1**, is depicted in accordance with a preferred embodiment of the present invention. Data processing system **200** may be a symmetric multiprocessor (SMP) system including a plurality of processors **202** and **204** connected to system bus **206**. Alternatively, a single processor system may be employed. Also connected to system bus **206** is memory controller/cache **208**, which provides an interface to local memory **209**. I/O bus bridge **210** is connected to system bus **206** and provides an interface to I/O bus **212**. Memory controller/cache **208** and I/O bus bridge **210** may be integrated as depicted.

Peripheral component interconnect (PCI) bus bridge **214** connected to I/O bus **212** provides an interface to PCI local bus **216**. A number of modems may be connected to PCI local bus **216**. Typical PCI bus implementations will support four PCI expansion slots or add-in connectors. Communications links to clients **108-112** in **Figure 1** may be provided through modem **218** and network adapter **220** connected to PCI local bus **216** through add-in boards.

Additional PCI bus bridges **222** and **224** provide interfaces for additional PCI local buses **226** and **228**, from which additional modems or network adapters may be supported. In this manner, data processing system **200** allows connections to multiple network computers. A memory-mapped graphics adapter **230** and hard disk **232** may also be connected to I/O bus **212** as depicted, either directly or indirectly.

Those of ordinary skill in the art will appreciate that the hardware depicted in **Figure 2** may vary. For example, other peripheral devices, such as optical disk drives and the like, also may be used in addition to or in place of the hardware depicted. The depicted example is not meant to imply architectural limitations with respect to the present invention.

The data processing system depicted in **Figure 2** may be, for example, an IBM eServer pSeries system, a product of International Business Machines Corporation in Armonk, New York, running the Advanced Interactive Executive (AIX) operating system or LINUX operating system.

With reference now to **Figure 3**, a block diagram illustrating a data processing system is depicted in which the present invention may be

implemented. Data processing system **300** is an example of a client computer. Data processing system **300** employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used. Processor **302** and main memory **304** are connected to PCI local bus **306** through PCI bridge **308**. PCI bridge **308** also may include an integrated memory controller and cache memory for processor **302**. Additional connections to PCI local bus **306** may be made through direct component interconnection or through add-in boards. In the depicted example, local area network (LAN) adapter **310**, SCSI host bus adapter **312**, and expansion bus interface **314** are connected to PCI local bus **306** by direct component connection. In contrast, audio adapter **316**, graphics adapter **318**, and audio/video adapter **319** are connected to PCI local bus **306** by add-in boards inserted into expansion slots. Expansion bus interface **314** provides a connection for a keyboard and mouse adapter **320**, modem **322**, and additional memory **324**. Small computer system interface (SCSI) host bus adapter **312** provides a connection for hard disk drive **326**, tape drive **328**, and CD-ROM drive **330**. Typical PCI local bus implementations will support three or four PCI expansion slots or add-in connectors.

An operating system runs on processor **302** and is used to coordinate and provide control of various components within data processing system **300** in **Figure 3**. The operating system may be a commercially available operating system, such as Windows XP, which is available from Microsoft Corporation. An object oriented programming system such as Java may run in conjunction with the operating system and provide calls to the operating system from Java programs or applications executing on data processing system **300**. "Java" is a trademark of Sun Microsystems, Inc. Instructions for the operating system, the object-oriented operating system, and applications or programs are located on storage devices, such as hard disk drive **326**, and may be loaded into main memory **304** for execution by processor **302**.

Those of ordinary skill in the art will appreciate that the hardware in **Figure 3** may vary depending on the implementation. Other internal hardware or peripheral devices, such as flash read-only memory (ROM), equivalent nonvolatile memory, or optical disk drives and the like, may be used in addition to or in place of the hardware depicted in **Figure 3**. Also, the processes of the present invention may be applied to a multiprocessor data processing system.

As another example, data processing system **300** may be a stand-alone system configured to be bootable without relying on some type of network communication interfaces. As a further example, data processing system **300** may be a personal digital assistant (PDA) device, which is configured with ROM and/or flash ROM in order to provide non-volatile memory for storing operating system files and/or user-generated data.

The depicted example in **Figure 3** and above-described examples are not meant to imply architectural limitations. For example, data processing system **300** also may be a notebook computer or hand held computer in addition to taking the form of a PDA. Data processing system **300** also may be a kiosk or a Web appliance.

With reference now to **Figures 4A and 4B**, diagrams illustrating the flow of messages between client applications in a messaging session are depicted in accordance with a preferred embodiment of the present invention. In **Figure 4A**, messaging client **400** exchanges messages with messaging client **402** and messaging client **404**. These messaging clients may be implemented using a data processing system, such as data processing system **300** in **Figure 3**.

In this example, messaging client **400** sends and receives messages directly with respect to messaging client **402** and messaging client **404** without requiring a server to exchange messages during the messaging session. In this type of implementation, the messaging server serves as a location or source to identify other users and to obtain addresses of users to establish messaging sessions.

Messaging client **400** includes highlighting process **406**, which is used to highlight portions of a message or all of a message in which selected text is found. If the user is interested in a particular topic, the user may identify one or more keywords that will be found in a message relating to the particular topic. The keyword or keywords may be stored in keyword table **408**. When a message is received from a messaging client, such as messaging client **402** or **404**, any keyword or keywords in keyword table **408** are used while the message is parsed to determine whether those keywords are present in the received message. If a keyword is present in the received message, the message is presented or displayed to the user with an emphasis. This emphasis may take various forms.

For example, each keyword may be associated with a particular color. If the keyword is present in a message, that message may be displayed

using the color associated with the keyword. Additionally, the entire message may be displayed using the entire color. If more than one keyword with different color coding is present in the message, each keyword may be displayed using the color associated with the keyword in the message.

5 Alternatively, an alternate color may be used to indicate that more than one keyword is present in the message. As a further illustration, messages may be color coded by keyword and particular participants. For example, a keyword is highlighted only if a particular person uses the keyword. Also, an entire message containing a keyword may be highlighted
10 with the keyword having a different emphasis or highlighting. These and other types of emphasis may be made, for example, by changing or adding tags in the message for the appropriate emphasis.

Another type of emphasis that may be used includes, for example,
15 flashing text, underlined text, bold text, and italicized text. Additionally, a graphical indicator may be displayed in association with the message if a keyword is present. The emphasis in presentation may be audio in addition to or in place of a visual emphasis. For example, if a cursor is positioned over a message containing a keyword, an audio
20 emphasis, such as a chime or other sound, may be presented to the user.

In **Figure 4B**, messaging client **410**, messaging client **412**, and messaging client **414** exchange messages with one another through messaging server **416**. In this example, messaging server **416** acts as a conduit for
25 all messages exchanged between these messaging clients. In other words, any message sent from messaging client **410** to messaging client **412** or messaging client **414** passes through messaging server **416**. Direct messaging does not occur in this example. As a result, the messaging clients do not need to know the IP addresses of the other messaging
30 clients.

With this type of messaging architecture, messaging server **416** may provide the message handling processes of the present invention. Messaging server **416** may be implemented using a data processing system,
35 such as data processing system **200** in **Figure 2**. Highlighting process **418** and keyword table **420** are located within messaging server **416**. With this type of implementation, keyword table **420** contains keywords defined by users at messaging client **410**, messaging client **412**, and messaging client **414**. Additionally, with a messaging server parsing keywords, each client
40 has its own keyword table and all of these tables are communicated to the messaging server **416** if this server is going to process each client's message. The processed messages are communicated back to each client

respectively. Also, any update to the keyword table is dynamically communicated to messaging server **416** as well.

For example, if the user at messaging client **410** has defined
5 "invention" as a keyword, messaging server **416** will parse all messages directed towards messaging client **410** to see whether this keyword is present. If the keyword is present, an appropriate emphasis is applied to the message to emphasize the keyword or the message. The emphasis may be, for example, a tag that changes the color of the font to the color
10 associated with the keyword. The tag may be placed before and after the keyword or around the entire message. In a similar fashion, keywords defined by users at the other messaging clients may be parsed by highlighting process **418** and modified to provide an emphasis as keywords are identified in messages.

15 In **Figure 4B**, highlighting process **418** is located in messaging server **416**. Even though this example requires a messaging server as a conduit for the messages, the highlighting processes may be implemented within the messaging clients.

20 Turning next to **Figure 5**, an example of a keyword table is depicted in accordance with a preferred embodiment of the present invention. Keyword table **500** may be implemented in keyword table **408** in **Figure 4A**. In this example, keyword table **500** contains entries **502**, **504**, **506**, **508**,
25 and **510**. Each entry includes a keyword and emphasis.

For example, in entry **502**, the keyword is "invention" and the emphasis is red as a font color. In entry **504**, the keyword is "table", with the emphasis being a font color equal to green. In entry **506**, the
30 keyword is "park" and the emphasis is flashing text. In entry **508**, the keyword is "tree" and the associated emphasis is an 18-point font. In entry **510**, the keyword is "storm", with a graphical indicator used as the emphasis.

35 Turning next to **Figure 6**, a diagram of a messaging window in a messaging client is depicted in accordance with a preferred embodiment of the present invention. Window **600** includes messages in section **602**. In this example, the keyword is "invention". Messages **604** and **606** contain this keyword. The mechanism of the present invention provides an emphasis
40 defined for the keyword in response to this keyword being present in the message. In this example, dotted lines **608** and **610** encompass the keywords. Of course, this emphasis could encompass the entire message,

depending on the implementation. Further, other types of emphasis may be used to emphasize the keyword or the messages in the manner described above and in other ways known to those of ordinary skill in the art.

5 Turning now to **Figure 7**, a flowchart of a process for defining a keyword and an associated emphasis is depicted in accordance with a preferred embodiment of the present invention. The process illustrated in **Figure 7** may be implemented in a highlighting process, such as highlighting process 406 in **Figure 4B**.

10 The process begins by prompting a user for a keyword (step 700). Thereafter, user input defining the keyword is received (step 702). The keyword received and the user input is added to a keyword list (step 704). This list is a list similar to keyword list 500 in **Figure 5**. The user is
15 then prompted to select the type of emphasis for the keyword (step 706). In response, user input is received selecting the type of emphasis (step 708). This type of emphasis is stored in association with the keyword in the keyword list (step 710).

20 A determination is then made as to whether more keywords are to be defined (step 712). If more keywords are to be defined, the process returns to step 700 as described above. Otherwise, the process terminates.

25 Turning now to **Figure 8**, a flowchart of a process for handling messages is depicted in accordance with a preferred embodiment of the present invention. The process illustrated in **Figure 8** may be implemented in a highlighting process, such as highlighting process 406 in **Figure 4B**.

30 The process begins by receiving an incoming message (step 800). A keyword is selected from the list of keywords (step 802). The message is parsed to determine whether the keyword is present (step 804). A
35 determination is made as to whether the keyword is found in the message (step 806). If the keyword is found, a type of emphasis associated with the emphasis is identified (step 808). The message is caused to be displayed using the type of emphasis identified (step 810).

40 A determination is then made as to whether more keywords are present for parsing in the keyword list (step 812). If additional keywords are present, the process returns to step 804, otherwise the process

terminates. Turning back to step 806, if a keyword is not found, the process proceeds to step 812 as previously described.

5 In this example, multiple keywords may be defined. In such a case, the emphasis is typically applied to the keywords rather than the entire message.

10 Thus, the present invention provides an improved method, apparatus, and computer instructions for managing messages in a messaging session. The mechanism of the present invention allows for selected text or entire messages to be emphasized for easy reference by a user. According to the preferred embodiment this emphasis occurs dynamically during the messaging session, with the emphasis being applied as the messages are received prior to the display of the messages. If a keyword is found in the
15 message, an emphasis associated with the keyword is applied to the keyword in the message or to the entire message. In this manner, a user may identify topics of interest from other topics that may be discussed during a messaging session.

20 It is important to note that while the present invention has been described in the context of a fully functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in the form of a computer readable medium of instructions and a variety of forms and that
25 the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media, such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs, and transmission-type media, such as digital and analog communications links,
30 wired or wireless communications links using transmission forms, such as, for example, radio frequency and light wave transmissions. The computer readable media may take the form of coded formats that are decoded for actual use in a particular data processing system.

CLAIMS

1. A method in a data processing system for managing messages, the
5 method comprising:

receiving a message during a messaging session;

responsive to receiving the message, determining whether a
10 particular string in the message matches a selected string; and

responsive to the particular string matching the selected string,
causing a display of the string with a selected type of emphasis, wherein
the displaying occurs dynamically during the messaging session.

2. The method of claim 1 further comprising:

responsive to the particular string matching the selected string,
displaying the message using the selected type of emphasis.

3. The method of claim 2, further comprising:

responsive to the particular string matching the selected string,
highlighting the string.

4. The method of claim 1 further comprising:

determining whether the particular message matches another selected
string; and

responsive to the particular string matching another selected
string, displaying the string using another type of emphasis different
from the selected type of emphasis.

5. The method of claim 1, wherein the selected type of emphasis
includes at least one of a particular color, bold text, italicized text,
underlined text, a selected font type, a selected font size, flashing
text, and audio presentation, and a graphical indicator.

6. The method of claim 1, wherein the selected string is a keyword.

7. The method of claim 1, wherein the message is displayed in association with a user name of a user originating the message and further comprising:

5 causing a display of the user name using the selected type of emphasis.

8. The method of claim 1 wherein the selected string is one from a set of strings, each string in the set of strings is associated with a
10 different color, and the selected type of emphasis is the color associated with the selected string.

9. The method of claim 8 further comprising:

15 responsive to the string matching the selected string, displaying the message in the color associated with the selected string.

10. A data processing system for managing messages, the system comprising:

20 receiving means for receiving a message during a messaging session;

determining means, responsive to receiving the message, for
determining whether a particular string in the message matches a selected
25 string; and

causing means, responsive to the particular string matching the
selected string, for causing a display of the string with a selected type
of emphasis, wherein the displaying occurs dynamically during the
30 messaging session.

11. The data processing system of claim 10 further comprising:

35 displaying means, responsive to the particular string matching the selected string, for displaying the message using the selected type of emphasis.

12. The data processing system of claim 11, further comprising:

40 highlighting means, responsive to the particular string matching the selected string, for highlighting the string.

13. The data processing system of claim 10, wherein the determining means is a first determining means and further comprising:

second determining means for determining whether the particular message matches another selected string; and

displaying means, responsive to the particular string matching another selected string, for displaying the string using another type of emphasis different from the selected type of emphasis.

14. The data processing system of claim 10, wherein the selected type of emphasis includes at least one of a particular color, bold text, italicized text, underlined text, a selected font type, a selected font size, flashing text, an audio presentation, and a graphical indicator.

15. The data processing system of claim 10, wherein the selected string is a keyword.

16. The data processing system of claim 10, wherein the causing means is a first causing means and wherein the message is displayed in association with a user name of a user originating the message and further comprising:

second causing means for causing a display of the user name using the selected type of emphasis.

wherein the selected string is one from a set of strings, each string in the set of strings is associated with a different color;; and the selected type of emphasis is the

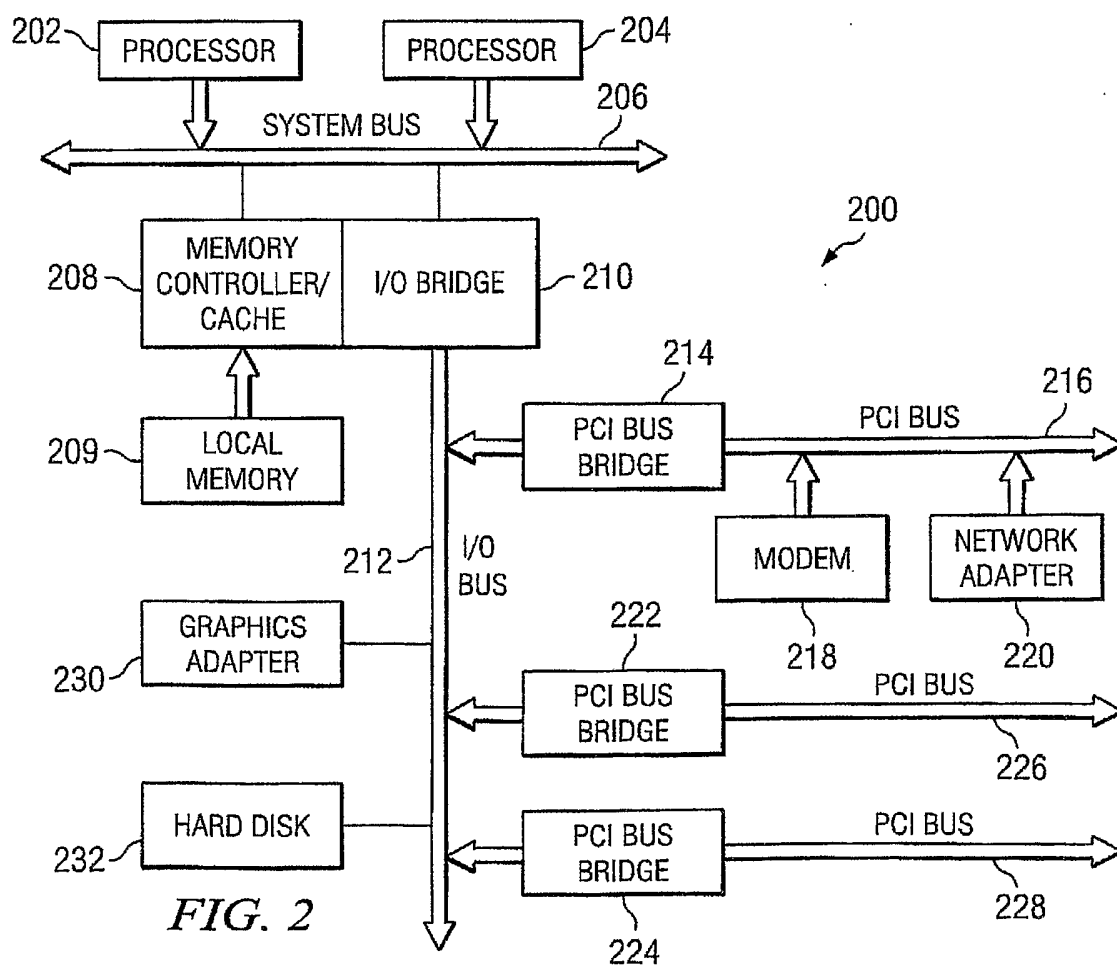
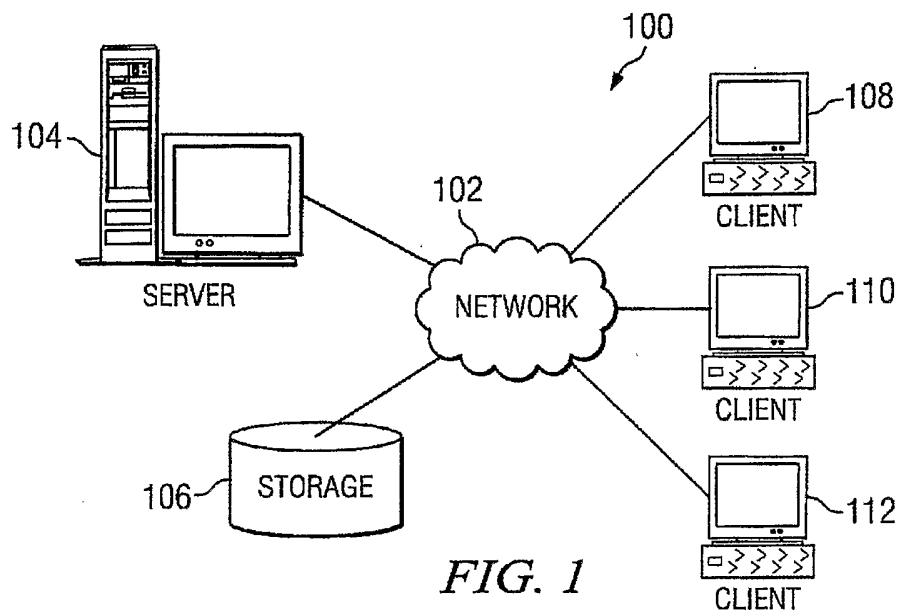
17. The data processing system of claim 10 wherein the selected string is one from a set of strings, each string in the set of strings is associated with a different color, and the selected emphasis is the color associated with the selected string.

18. The data processing system of claim 17 further comprising:

displaying means, responsive to the string matching the selected string, for displaying the message in the color associated with the selected string.

19. A computer program product in a computer readable medium for managing messages, the computer program product comprising instruction for carrying a method according to any one of claim 1 to 9

1/4



2 / 4

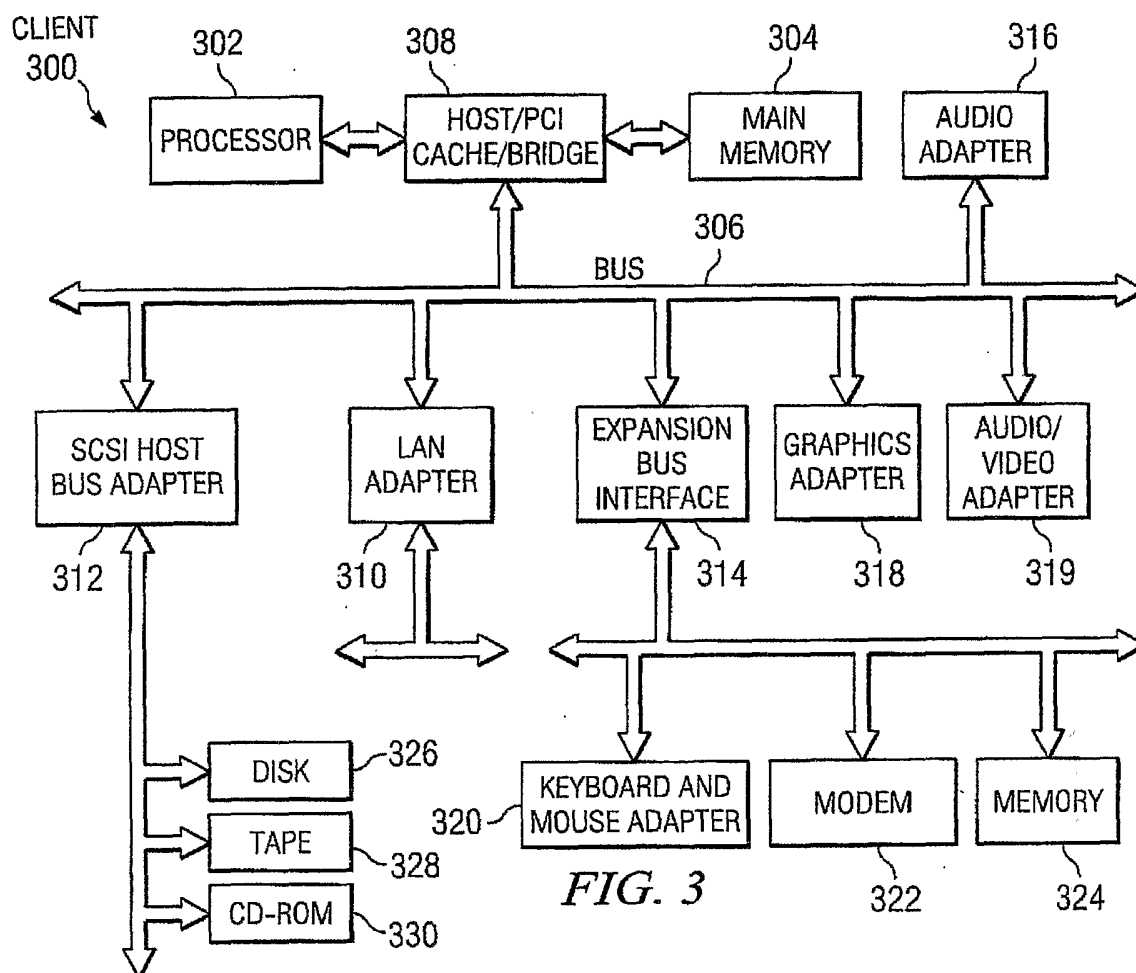


FIG. 3

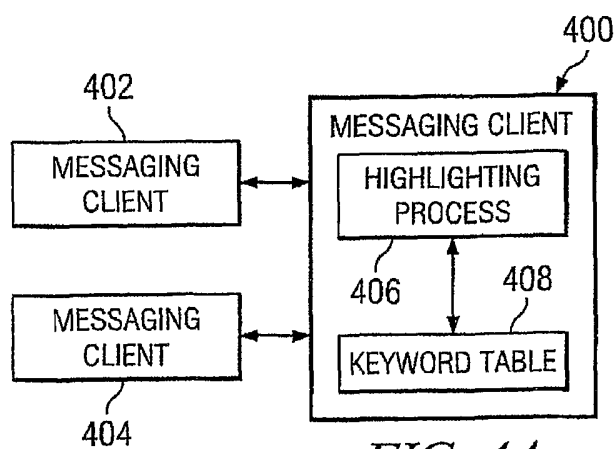
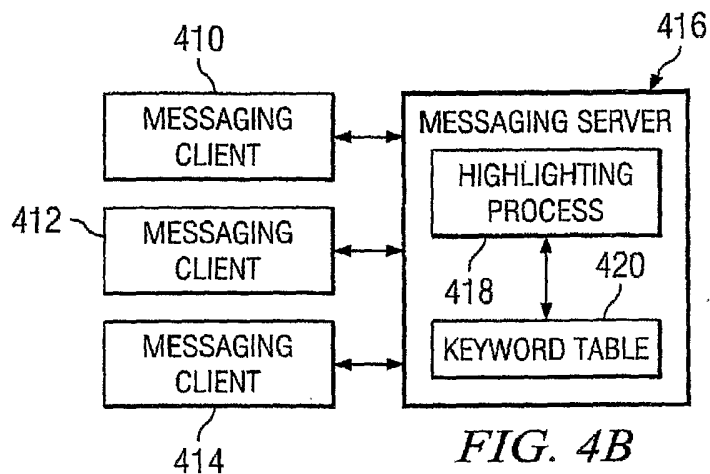
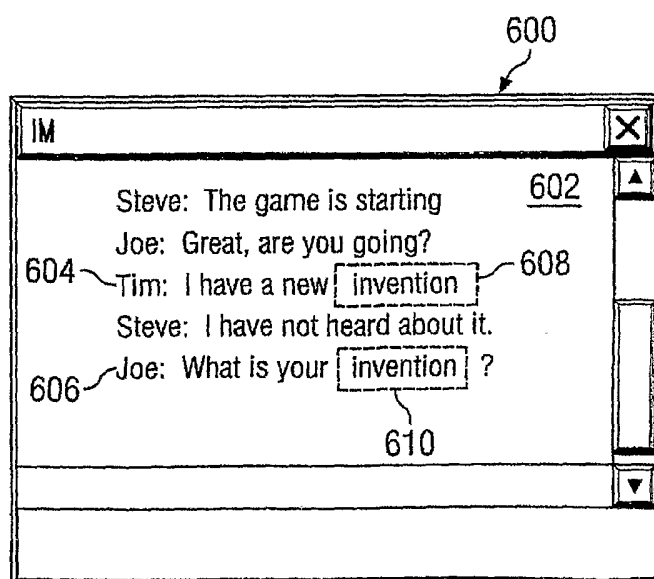


FIG. 4A

3/4



KEYWORD	EMPHASIS	500
INVENTION	RED	502
TABLE	GREEN	504
PARK	FLASHING TEXT	506
TREE	18 POINT	508
STORM	☺	510

FIG. 5

4 / 4

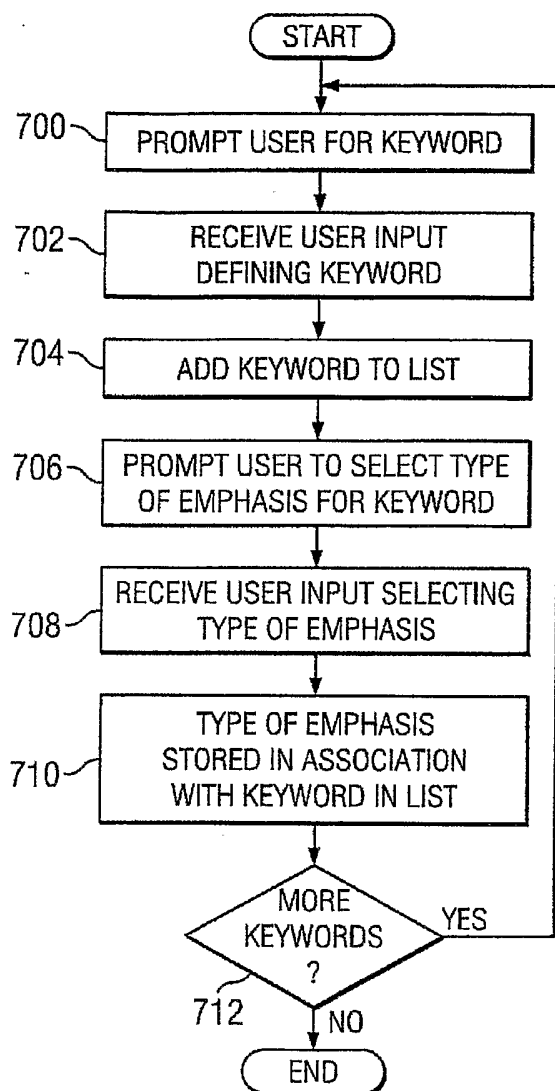


FIG. 7

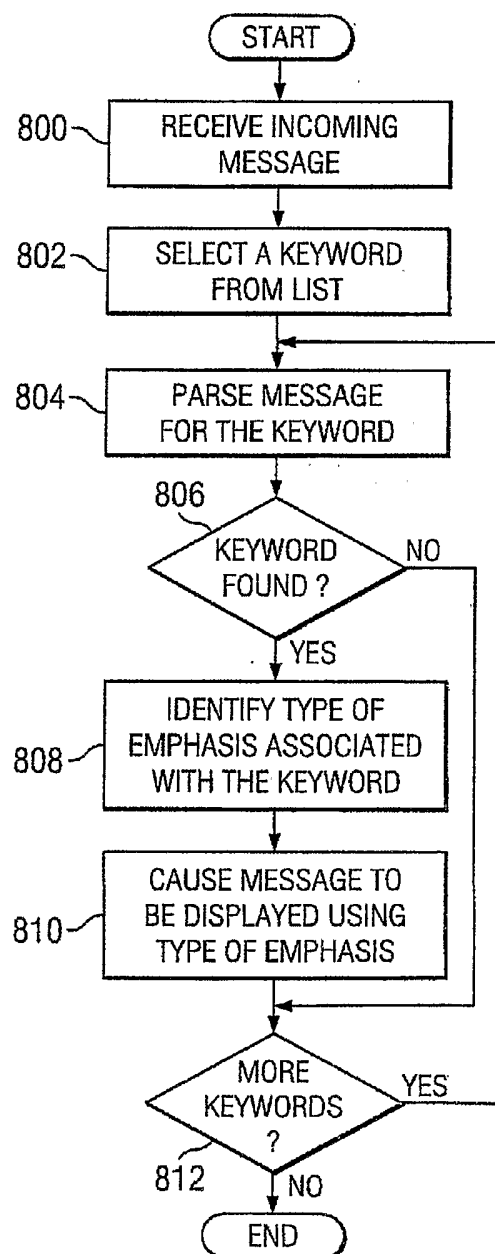


FIG. 8

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2004/002044

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L12/58

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04L G06F

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

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

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/023684 A1 (BROWN MICHAEL WAYNE ET AL) 30 January 2003 (2003-01-30) abstract page 1, column 1, line 23, paragraph 9 - page 3, column 1, line 43, paragraph 52 page 6, column 1, line 38, paragraph 84 - column 2, line 2, paragraph 85 page 7, column 2, line 35, paragraph 103 - page 8, column 2, line 25, paragraph 115; figures 6-9	1-19
A	US 2003/009459 A1 (PAUL CHRISTOPHER JOSEPH ET AL) 9 January 2003 (2003-01-09) abstract page 4, column 1, line 19 - page 5, column 1, line 34; figures 8-13	1-19

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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

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

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

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

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

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

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

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

* & * document member of the same patent family

Date of the actual completion of the international search

15 July 2004

Date of mailing of the international search report

26/07/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Plata-Andres, I

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/002044

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003023684	A1	30-01-2003	NONE	
US 2003009459	A1	09-01-2003	NONE	