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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also referred to as FORM PTO-1465)

REQUEST FOR *EX PARTE* REEXAMINATION TRANSMITTAL FORM

68354 U.S. PTO

Address to:
Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: OPEN2200-1 90009960

Date: October 18, 2011

1. ☒ This is a request for *ex parte* reexamination pursuant to 37 CFR 1.510 of patent number 7,603,674 issued October 13, 2009. The request is made by:
   ☐ patent owner. ☒ third party requester.

2. ☒ The name and address of the person requesting reexamination is:
   Ariyeh Akmal
   1301 W. 25th Street, Suite 408
   Austin, Texas 78705

3. ☐ a. A check in the amount of $_____ is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(1);
   ☒ b. The Director is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(1) to Deposit Account No. 503183 ; **or**
   ☐ c. Payment by credit card. Form PTO-2038 is attached.

4. ☒ Any refund should be made by ☐ check or ☒ credit to Deposit Account No. 503183 37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.

5. ☒ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.510(b)(4)

6. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
   ☐ Landscape Table on CD

7. ☐ Nucleotide and/or Amino Acid Sequence Submission
   If applicable, items a. – c. are required.
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM (2 copies) or CD-R (2 copies); **or**
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies

8. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.

9. ☒ Reexamination of claim(s) 1-173 is requested.

10. ☒ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.

10/20/2011 SSTEVENS 00000001 503183 90009960
01 FC:1812 2520.00 DA

11. ☐ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included.

12. ☒ The attached detailed request includes at least the following items:

a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1)
b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2).

13. ☐ A proposed amendment is included (only where the patent owner is the requester). 37 CFR 1.510(e)

14. ☒ a. It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c).
The name and address of the party served and the date of service are:

Joseph E. Chovanes

5 Great Valley Parkway, Suite 329

Malvern, PA 19355

Date of Service: October 18, 2011; **or**

☐ b. A duplicate copy is enclosed because service on patent owner was not possible. An explanation of the efforts made to serve patent owner **is attached**. See MPEP 2220.

15. Correspondence Address: Direct all communications about the reexamination to:

☒ The address associated with Customer Number: 44654

OR

☐ Firm or Individual Name

Address

City	State	Zip
Country		
Telephone	Email	

16. ☒ The patent is currently the subject of the following concurrent proceeding(s):

☐ a. Copending reissue Application No.

☐ b. Copending reexamination Control No.

☐ c. Copending Interference No.

☒ d. Copending litigation styled:

Case No. 2:11-CV-01609-JCJ, YYZ, LLC v. Metastorm, Inc. and OpenText Corporation, USDC, E.D. of Pennsylvania

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.

Authorized Signature	October 18, 2011 Date
Ariyeh Akmal Typed/Printed Name	51,388 Registration No.

☐ For Patent Owner Requester
☒ For Third Party Requester

APPENDIX "E"

UNITED STATES PATENT NO. 7,603,674

US007603674B2

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

(10) **Patent No.: US 7,603,674 B2**
(45) **Date of Patent: *Oct. 13, 2009**

(54) **APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES**

(75) Inventors: **Vincent R. Cyr**, Glen Mills, PA (US); **Kenneth Fritz**, Glen Mills, PA (US)

(73) Assignee: **YYZ, LLC**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 272 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/398,133**

(22) Filed: **Apr. 5, 2006**

(65) **Prior Publication Data**

US 2006/0200804 A1 Sep. 7, 2006

Related U.S. Application Data

(63) Continuation of application No. 09/737,494, filed on Dec. 15, 2000, now Pat. No. 7,062,749.

(51) **Int. Cl.**
G06F 13/00 (2006.01)

(52) **U.S. Cl.** **719/313**; 709/217; 707/1; 707/10

(58) **Field of Classification Search** 717/103; 705/9; 709/231, 227, 202, 206, 217; 719/314, 719/315, 316, 313; 707/3, 10, 1
See application file for complete search history.

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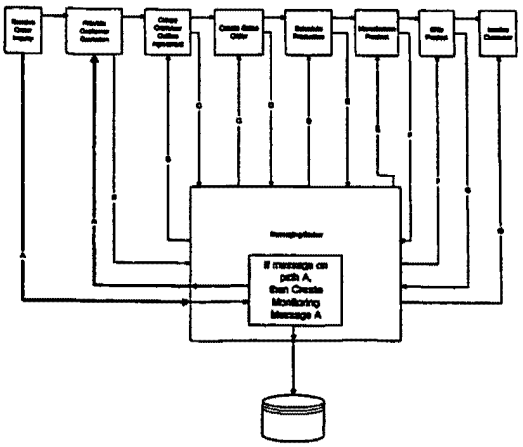
Primary Examiner—Andy Ho

(57) **ABSTRACT**

The present invention comprises apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes. A central message repository or database is constructed, comprised of monitoring messages sent from process messaging systems. The database may then be accessed or queried as desired. A simulation tool assists in reviewing present and proposed processes and subprocesses before modifying existent systems or creating new systems.

173 Claims, 6 Drawing Sheets



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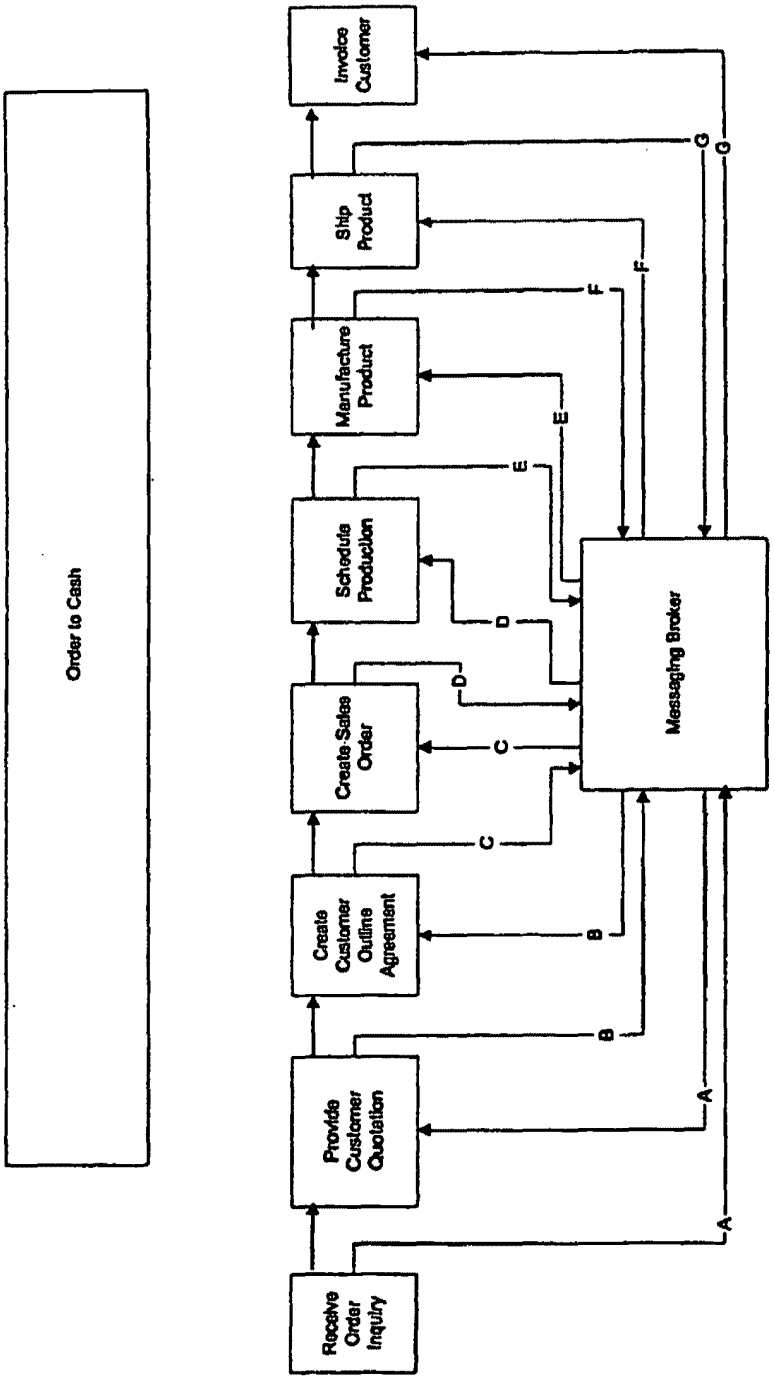

Order to Cash
Receive Order Inquiry
Provide Customer Quotation
Create Customer Outline Agreement
Create Sales Order
Schedule Production
Manufacture Product
Ship Product
Invoice Customer
Messaging Broker
A
B
C
D
E
F
G

Figure 1

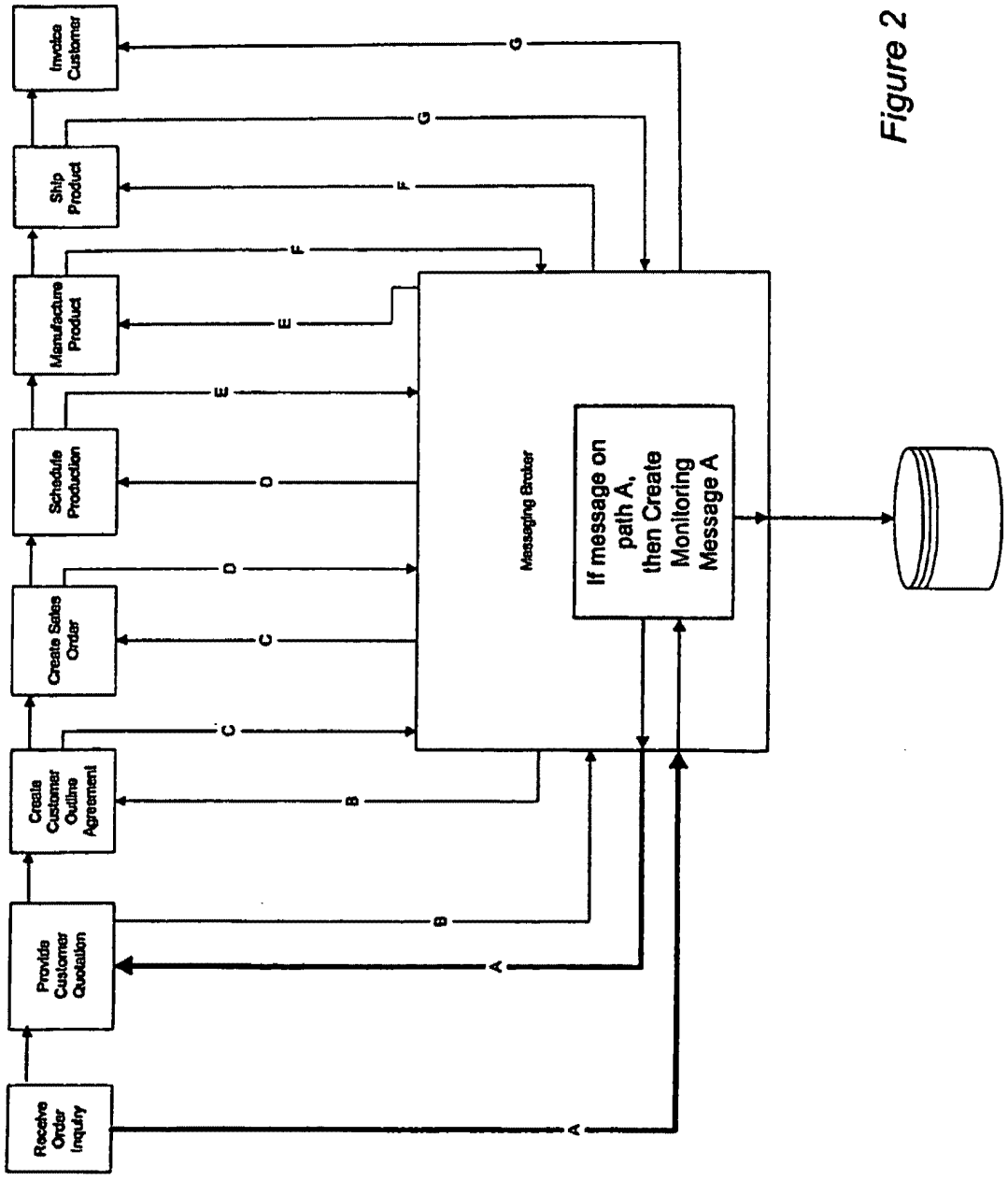

Invoice Customer
Ship Product
Manufacture Product
Schedule Production
Create Sales Order
Create Customer Outline Agreement
Provide Customer Quotation
Receive Order Inquiry
Messaging Broker
If message on path A, then Create Monitoring Message A
A
B
C
D
E
F
G

Figure 2

Summary Of Orders

Your Information

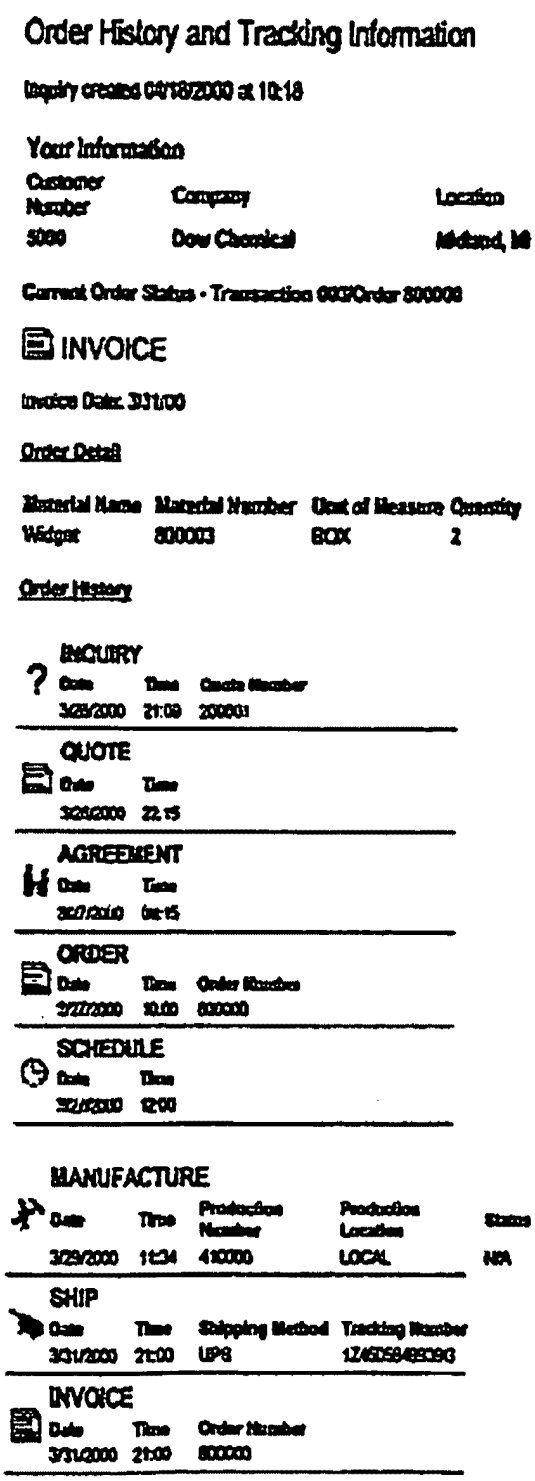
Customer Number	Company	Location
5000	Dow Chemical	Midland, MI

Current Orders, Quotes, and Inquiries

Click on an order to view its detailed status and history

Date	Transaction ID	Order Number	Current Status
3/27/2000	0003	800000	INVOICE
3/29/2000	2102	839400	MANUFACTURE
3/31/2000	2204	940302	ORDER

Figure 3



Order History and Tracking Information

Inquiry created 04/18/2000 at 10:18

Your Information

Customer Number	Company	Location
5000	Dow Chemical	Midland, MI

Current Order Status - Transaction 0003/Order 800008

INVOICE

Invoice Date: 3/31/00

Order Detail

Material Name	Material Number	Unit of Measure	Quantity	Price Each
Widget	800003	BOX	2	2.00

Order History

INQUIRY

Date	Time	Quote Number
3/28/2000	21:09	200001

QUOTE

Date	Time
3/29/2000	22:15

AGREEMENT

Date	Time
3/7/2000	0x:15

ORDER

Date	Time	Order Number
3/27/2000	10:00	800000

SCHEDULE

Date	Time
3/2/2000	12:00

MANUFACTURE

Date	Time	Production Number	Production Location	Status
3/29/2000	11:34	410000	LOCAL	N/A

SHIP

Date	Time	Shipping Method	Tracking Number
3/31/2000	21:00	UPS	1Z4059495390

INVOICE

Date	Time	Order Number
3/31/2000	21:00	800000

Figure 4

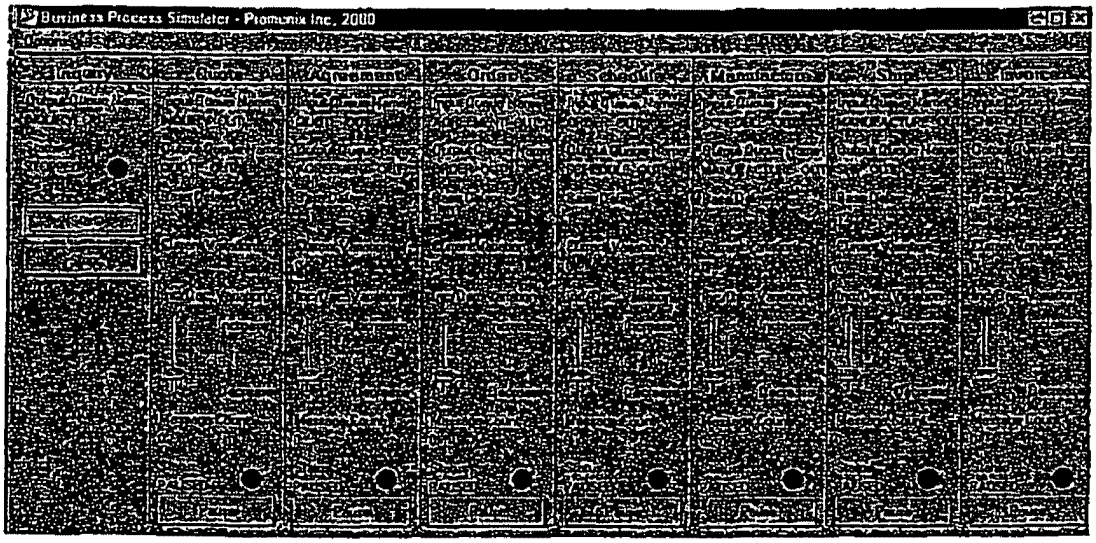


Figure 5

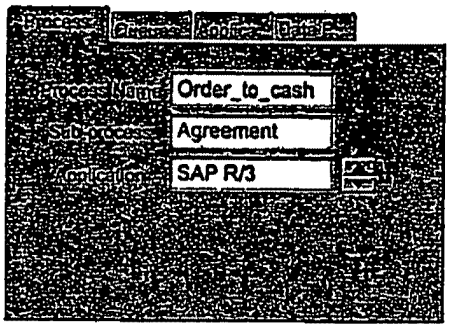


Figure 6

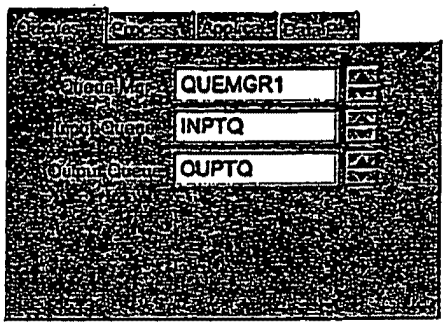


Figure 7

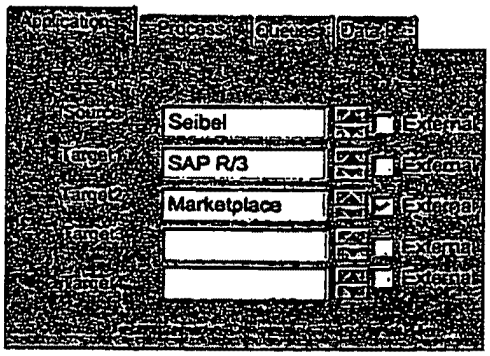


Figure 8

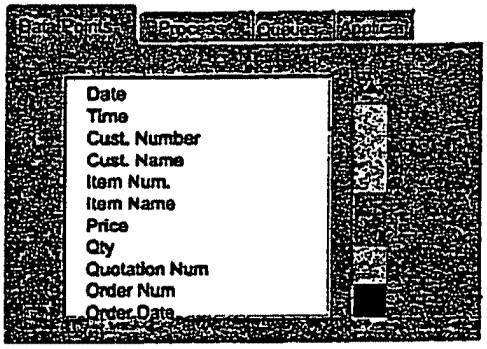


Figure 9

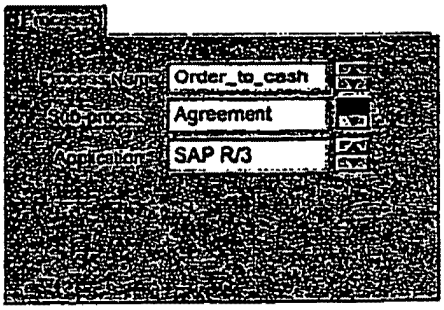


Figure 10

APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation of and claims the benefit of U.S. patent application Ser. No. 09/737,494 filed Dec. 15, 2000, entitled Apparatus and Methods for Isolating and Reviewing Data from Multiple Sources, now issued U.S. Pat. No. 7,062,749.

The present invention relates to apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes. More particularly, the present invention relates to computer-based apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes in an asynchronous messaging environment.

BACKGROUND OF THE INVENTION

The activities of a business or enterprise can be grouped into processes. Processes are business operations that are separated as desired and usually occur across business units. For example, the process of taking orders and turning those orders into revenue may be known as Order to Cash. The processes are comprised of sub-processes. For example, Order to Cash may be broken down into sub-processes such as Receive Order Inquiry, Provide Customer Quotation, Create Customer Outline Agreement, Create Sales Order, Schedule Production, Manufacture Product, Ship Product and Invoice Customer. Each sub-process may in turn be broken down into discrete activities such as providing customer number, entering that customer number, establishing pricing, determining a shipping date, etc.

The processes, sub-processes and activities operate, in part, by communicating information. For example, users may communicate through email. As another example, applications may communicate amongst themselves through electronic data interchange ("EDI") and other similar services. Communication occurs horizontally, that is, among a process, sub-process and activities, as well as vertically, that is, between processes, sub-processes and activities.

Whether communications occur horizontally or vertically, among applications or users, communications are increasingly asynchronous or message based. That is, enterprise communications were formerly primarily synchronous, or connection oriented, in which a connection is established with prior coordination between communication end points with data then being transmitted over the connection. Enterprise communications are now increasingly asynchronous, or connectionless, transmitting data without prior coordination between communication end points, such as through "event based" communications which use messages to move data instead of large files.

Asynchronous or message based communications permit loosely coupled connections among and between systems because the end points do not have to be prepared to receive the data when the message is transmitted. Loosely coupled connections permit more flexibility in assembling processes. Flexibility in assembling processes is desirable in order to permit quick reaction to changing business conditions: if a particular sub-process or activity becomes unusable, the process can be reassembled with a new sub-process or activity. For example, if a Manufacture Product sub-process in the Order to Cash process at Widget Co. enterprise has a specific factory identified to manufacture the product and that factory has a fire or other disaster, making it unusable, Widget Co. will need to substitute a new factory. The ripple effect of that substitution among all of Widget Co.'s processes will change any number of parameters. A loosely coupled asynchronous connection among Widget Co.'s processes provides rapid substitution of the new factory for the old because the end points of communication to the new factory do not have to be predetermined before communications begin with the new factory. Thus, the flexibility of the asynchronous message based communication has permitted quick response to changing business conditions.

Despite this flexibility, asynchronous or message based communications are problematic because of their loosely coupled nature. At any given time, precise information on the progress of the processes is difficult to obtain—messages may be in transit and not instantly locatable. For example, if a customer calls for the status of an order, an enterprise customer service representative may be able to determine nothing more than the fact that the order has been received and that the scheduled ship date is X. There is often no ability to drill down into the information levels and review the status in more granularity, such as the location of the good, the manufacturing status, etc., because the information required to review that status is in transit and unable to be reviewed.

Of course, if the enterprise lacks the ability to access status information, business partners of the enterprise will similarly lack that ability. Thus, asynchronous communications may well increase inefficiency among business partners as well.

The difficulty in reporting caused by message based architecture also makes it difficult for the enterprise to measure the efficiency of its processes and their sub-process. Asynchronous messaging, with its indeterminate transmission of information, means a company may not be able to easily measure the interval between each sub-process, e.g. the time between Scheduling Production and the Manufacturing of a Product, and so easily measure the efficiency of their operations.

Finally, asynchronous messaging may provide an enterprise with an ability to model and simulate processes. That is, since information flows can be readily estimated through enterprises with asynchronous messaging, and processes can be easily modeled from those flows, asynchronous messaging modeling provides the potential to model and simulate processes. That potential is not realized with present technology, however. Moreover, since as described above, enterprises lack information on the processes they have implemented, the enterprises are handicapped in their ability to modify those processes or plan new processes. A modeling and simulation tool, demonstrating processes, sub-processes and their activity or granular detail level would be extremely helpful, and would give the enterprise an opportunity to assemble, test, adjust, and simulate processes and their details.

Accordingly, it is an object of the present invention to provide a tool for simulating message based architectures.

It is a further object of the present invention to provide monitoring capabilities for enterprise processes.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a view of a process.

FIG. 2 shows a view of a process of a preferred embodiment.

FIG. 3 shows a screen of a preferred embodiment.

FIG. 4 shows a screen of a preferred embodiment.

FIG. 5 shows a screen of a preferred embodiment.

FIG. 6 shows a partial view of a preferred embodiment.

FIG. 7 shows a partial view of a preferred embodiment.
FIG. 8 shows a partial view of a preferred embodiment.
FIG. 9 shows a partial view of a preferred embodiment.
FIG. 10 shows a partial view of a preferred embodiment.

SUMMARY OF THE INVENTION

The present invention comprises apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes in an asynchronous messaging environment. For each original message sent within a process, sub-process or activity, the preferred embodiments of the present invention send a separate monitoring message containing data from the central message repository or database. This data may include date, time, customer number, materials, quantity, amount, or other information, and be copied from the original message. Other embodiments may add data to the monitoring message aside from that contained in the original message.

This central message repository or database is comprised of information passing through the enterprise. In effect, the database provides a collection point or an "end point" for the asynchronous communications, and so allows the flexibility of asynchronous communications to be combined with the precision of synchronous communications. The database can be reviewed in any number of ways. For example, the database can be queried to obtain specific information about that particular order or customer or could be examined across larger time spans such as days, weeks, or months, to gauge trends or performance. Of course, some preferred embodiments may wish to create mirror databases or other databases that can be used in various ways.

An enterprise's information flow can also be readily modeled and simulated through creating new process, sub-process and/or activities or altering existing process, sub-process or activities. The information flows from those creations or alterations can be collected in one or more databases and examined as desired.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 shows a sample process, Order to Cash, which is comprised of various sub-processes: Receive Order Inquiry, Provide Customer Quotation, Create Customer Outline Agreement, Create Sales Order, Schedule Production, Manufacture Product, Ship Product and Invoice Customer. The dashed line arrows connecting the sub-processes are the communication paths between the sub-processes. In the example shown in the figure, the sub-processes actually communicate through a messaging broker, such as an IBM MQSeries component, and the paths to and from the component are identified identically. This messaging broker permits certain sophisticated messaging uses, such as message queuing, some data translation, etc.

A messaging component is added to the messaging broker, through methods known in the art. This messaging component creates a "monitoring" message for each original message received by the broker. This monitoring message contains, in this embodiment, specific data generated from the original messages passing between the sub-processes. The monitoring message with its data is then sent from the messaging broker to a central database repository or database (the terms "repository" or "database" are used interchangeably throughout.)

The messaging component may be, in some embodiments, or may not be, in other embodiments, provided by the messaging broker. For example, IBM's MQSeries messaging broker provides a component that can be configured to perform a copying function for the messages it receives, and so create monitoring messages for the messages it receives.

The specific data contained in the monitoring messages (in this embodiment, this data is copied from the original messages passing between the sub-processes) is organized into data fields. Those data fields are path specific in this embodiment. For example, assume a customer calls the enterprise (Widget Co.) whose process is shown in FIG. 1 and asks whether or not Widget Co. has a certain product (Type A Widgets.) That customer request will begin the Receive Order Inquiry sub-process which will end with the generation of a Receive Order Inquiry message traveling to the Provide Customer Quotation sub-process through the messaging broker component. When the messaging broker receives the message on Path A, it will create a monitoring message, and send the monitoring message to the central database repository, as shown in FIG. 2. In this embodiment, the data contained in the monitoring message is generated from the message on Path A. Other preferred embodiments may alter or add data to the monitoring messages aside from that contained in the original message.

The monitoring message contains, in this embodiment, specific data fields. (Of course, other embodiments may have different data fields.) Those data fields are:

FIELDS	IDENTIFIERS
PROCESS IDENTIFIER	ProID,
SUB-PROCESS IDENTIFIER	SbProID,
CUSTOMER NUMBER	Custno,
PART NUMBER	Partno,
QUANTITY	Qty,
DATE	Date,
TIME	Time

The first field, the PROCESS IDENTIFIER field, provides the identifier for the process, for example, the value "Order to Cash" because the monitoring message is being created within the Order to Cash process. The second field, the SUB-PROCESS IDENTIFIER field, provides the identifier for the sub-process, for example, the value "Inquiry" because the monitoring message is being created within the Inquiry sub-process. This embodiment prepopulates these PROCESS IDENTIFIER and SUB-PROCESS IDENTIFIER fields, with the appropriate values.

The CUSTOMER NUMBER field is assigned to the particular customer generating the inquiry. The PART NUMBER field is the identifier for the particular part and the QUANTITY for the particular quantity. DATE and TIME are the data and time the message is generated. Other message fields for other paths of this embodiment are shown in Table 1. Of course, some, all or none of these fields may be present in other embodiments, as well as other fields as desired. For example, one or more ACTIVITY IDENTIFIER fields may be present in monitoring messages in other embodiments.

The monitoring message data populates one information flow or transaction record ("transaction record.") As monitoring messages progress through any given process and/or sub-process, the transaction record is updated. Once the monitoring messages complete the transaction record, all of the information needed to measure that transaction through the process is contained in one record in the central message database. (Of course, if the monitoring messages do not fully populate the transaction record, e.g., the transaction is

aborted in mid process, then these abandoned records may be made available as well with an indication that they were abandoned.)

The central message database can be reviewed in any number of ways, in order to measure, monitor and track enterprise communications and processes, e.g., to provide information or generate reports. Using the central message database to provide information or generate reports "off loads" the information access or reporting processes from the applications that generate messages initially, e.g., sub-processes such as those seen in FIG. 1. This off loading relieves some of the monitoring pressure from the source applications so that, for example, any queries that might have been made to the source applications and interfere with or slow down the operation of the source applications can now be made through the central message database.

The information retrieved from the central message database may include, but is not limited to, information about any particular order or customer, information about process efficiency, "snapshot" or time slice information, information across time spans such as days, weeks, or months, information to gauge trends or performance, etc. Also, in some embodiments, a "real-time" tool may be used to track the progress of transaction records and/or processes and use distribution methods such as broadcasting, WAP, etc. to provide the information to users. For example, if a process such as pipeline capacity for oil and natural gas transmissions is implemented and monitored through an embodiment of the present invention, the central message database will constantly broadcast unused pipeline capacity, which information in turn can be used to sell, trade or barter that unused capacity. As another example, information about an enterprise's processes can be made available over an intranet, extranet, the Internet, etc. to business partners or other entities. One example would be providing information to stock analysts so that they could track any particular enterprise's productivity or other areas of interest. Another example would be providing information to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest. In some embodiments, with regard to external entities, communication channels between the external entities and the enterprise might well be established, so that central message databases exist on both ends of the communication channel.

The central message database allows for broader analysis of trends that may include: time between sub-processes, variances by customer, variances by order amount, bottlenecks in the process, etc. For example, it would be possible to determine how many orders stood between Order and Invoice. This may allow for the acceleration of some orders so they could be booked by quarter close. For example, a vendor bottleneck may be identified in the course of review of the processes, sub-processes and/or activities. For example, seasonal variations in processes, sub-processes and/or activities may be identified as well.

Of course, some embodiments may create mirror databases and/or generate other databases that can be used by various entities. For example, an enterprise may create a number of central message databases which could track processes, sub-processes and/or activities in whole or part. These databases could also be combined as desired.

Monitoring message database(s) may be used, in some embodiments, in various ways, either in addition to or instead of central message database(s.) For example, a monitoring message database or a central message database may be used to generate messages and feedback to the processes, sub-processes, activities and/or applications, as well as to users and/or administrators (herein generally "users.") Various messages transmitted from sub-process applications such as error messages would generate special monitoring messages which would be added to a message monitoring database. Other events, exceptions, triggers and thresholds, could be tracked as well in various embodiments and be used to signal conditions, problems, etc. by various methods such as "flagged" or specially designated messages or other indicators.

Access to the database(s) is, in the preferred embodiments, on a secured or authorized basis, with different users obtaining different levels of access to the data in the database.

FIG. 3 shows a screen shot of an example of a preferred embodiment where access was made available to a customer over a corporate extranet. The screen shot is of a report, generated through an XML link to the central message database, of that particular customer's orders. In the preferred embodiments, the customer has the option to "drill down" through this screen to other screens for further detail. So, for example, FIG. 4 shows a result of one such operation, where the customer had drilled down from the screen of FIG. 3. Of course, these records may vary depending on the status of the transaction, that is, whether the transaction is in the middle of the process, at the beginning of the process, etc. Furthermore, other reporting options may be seen depending on the embodiments. Additionally, in some embodiments the user may have the option to drill down further into or past these levels if desired.

The preferred embodiments of the present invention also provide a simulation module for business processes. The simulation module makes possible simulation of new processes, their sub-processes and the activities that make up the sub-processes. This provides the enterprise or other user with the opportunity to assemble, test, adjust, and simulate processes before they are integrated into the enterprise.

The simulation module of the preferred embodiments provides the ability to assemble simulated processes in two primary ways. The first primary way is through provision of a toolkit or palette of predetermined sub-processes to the user. The user can then choose from that palette of sub-processes to form a process for an organization, which is then used in the simulation as is explained in further detail below.

The second primary method of assembling processes is to provide the user with activities, which are the most granular construct of a sub-process. Additionally, more sophisticated users will be given the opportunity to assemble their own activities. Either or both options of this second primary method can be offered in various embodiments. Additionally, the first and second primary methods can be combined in certain embodiments as well.

The preferred embodiments permit use of discrete activities among sub-processes, perhaps in an object oriented format, in order to save time and increase productivity. These activities can then be connected to form one or more sub-processes, which in turn can be connected to form one or more processes. The ability to create additional sub-processes would allow for the company to add their unique sub-processes to the palette.

It should be noted that in other embodiments, the simulation module may be constructed in other ways. For example, preconfigured, industry-specific processes may be supplied that can be altered and/or provided with enterprise specifics.

The simulation model is contained, in the preferred embodiments, on a corporate intranet or extranet. The underlying assumption of the simulation model in the preferred embodiments is that the completion of each sub-process will generate a message. So, for example, if a process such as that

of FIG. 1 is simulated, the completion of the first sub-process will generate a message to be sent to the next sub-process, the completion of the next sub-process will generate a message that will be sent to the next sub-process, and so on.

FIG. 5 shows a process development environment screen for an example process called "Order" of the simulation module. Sub-processes Inquiry, Quote, Agreement, Order, Schedule, Manufacture, Ship and Invoice have been joined together to comprise this process. The sub-processes, in this example, are predetermined and their activities are predetermined. The input and output queue names are identified where appropriate. For example, the output queue name in the Inquiry sub-process is INQUIRY_OUT. That output queue then feeds data into the input queue of the Quote sub-process. (These are analogous to Path A in FIG. 1.) The base delay provides the initial time of a sub-process. For example, the base delay for the Quote Sub-process is 1 or a time increment of 1. In contrast the Manufacture Sub-process base delay is 48, so that the time increment for the Manufacture Sub-process is 48. The Current Variation shows the Increase/Decrease Variation set by the slider, permitting an increase or decrease in the latency per process and thus permits the user to see the downstream effect of altering each sub-process time. (Other embodiments may use different apparatus and methods as known in the art to vary the latency of the sub-process.) In this example, the total time of the process is obtained by adding each base delay of each sub-process, however, each sub-process may not affect the other in a geometric or logarithmic progression. For example, varying the base delay by one time increment of the Quote sub-process may not lead to an exact one time increment variation in the Scheduling sub-process.

FIGS. 6 through 9 are examples of tools that are used in this embodiment to construct sub-process modules such as those used in FIG. 5. For example, FIG. 6 shows the properties of the Agreement sub-process module, which are the process, the sub-process and the application used in the sub-process. The process and sub-process are predetermined in this module. The user has the option of setting the application alternative of the sub-process to one or more predetermined alternatives. These alternatives would be used, for example, when a new application might be used to provide output from the sub-process.

FIG. 7 shows a message queue construction tool for the sub-process identified in FIG. 6. This tool, which may be another option combined with the process tool of FIG. 6 or some other tool in various embodiments, or may be stand-alone in other embodiments, provides the ability to select a queue manager (a process that manages different message queues in various machines or applications), input queue and output queue for the particular sub-process being simulated. Each of these options, queue manager, input queue and output queue, can be changed by using the arrows to access a drop-down menu of predetermined alternatives. Once the alternatives are chosen, the module can be saved. Of course, in other embodiments non-predetermined alternatives may be used.

FIG. 8 shows an application construction tool, which can be used to select the applications used on either end of the queue or path. Here, there are two separate targets, one external, with a single monitoring message being sent to a central message database, before the source message is split and sent to both target applications. FIG. 9 shows the particular data fields or points that may be captured in the monitoring message. These are selected by highlighting the preferred fields in this embodiment.

Other alternatives are possible for other embodiments of the simulation module. For example, the embodiments discussed above have some alternatives as predetermined, which makes the construction of sub-process modules more convenient. In other embodiments non-predetermined alternatives may be used. Moreover, any desired processes that are not defined in predetermined modules can be developed and made available to the user. For example, a tool such as that shown in FIG. 10 provides the ability to alter the process, the sub-process, and the application, by using the arrows to access a drop-down menu of predetermined alternatives, thus facilitating creation of new processes, sub-processes and/or activities. Other embodiments may use an "open ended" format to allow the creation of new processes and sub-processes and/or activities.

The simulation module is, in the preferred embodiments, either stand-alone or contained as part of a monitoring apparatus and/or system as had been described above. If the latter, then "real-time" data and processes, sub-processes and activities can be used in the simulation apparatus and/or process. The simulator module permits processes and sub-processes to be defined, simulated, and refined before modifying existent systems or implementing new systems.

The above description and the views and material depicted by the figures are for purposes of illustration only and are not intended to be, and should not be construed as, limitations on the invention.

Moreover, certain modifications or alternatives may suggest themselves to those skilled in the art upon reading of this specification, all of which are intended to be within the spirit and scope of the present invention as defined in the attached claims.

TABLE 1

PATH	FIELDS	IDENTIFIERS
B	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	quote,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUOTE NUMBER	quote num,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
C	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	Agreement,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUOTE NUMBER	quote num,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
D	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	order,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
E	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	schedule,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	PRODUCTION NUMBER	production Number,
	PRODUCTION DATE	Production date,
	PRODUCTION LOCATION	production location,
	PRODUCTION STATUS	production status,
	CUSTOMER NUMBER	custno,

TABLE 1-continued

PATH	FIELDS	IDENTIFIERS
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
F	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	mfg,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	PRODUCTION NUMBER	production Number,
	PRODUCTION DATE	Production date,
	PRODUCTION LOCATION	Production location,
	PRODUCTION STATUS	Production status,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
G	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	ship,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	PRODUCTION NUMBER	production Number,
	PRODUCTION DATE	Production date,
	PRODUCTION LOCATION	production location,
	PRODUCTION STATUS	production status,
	CUSTOMER NUMBER	custno,
	SHIPPING DATE	ship date,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
H	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	invoice,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	CUSTOMER NUMBER	custno,
	SHIPPING DATE	ship date,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time

We claim:

1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

retrieving information from the central message repository.

2. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about an order from the central message repository.

3. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about a customer from the central message repository.

4. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving process efficiency information from the central message repository.

5. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving time slice information from the central message repository.

6. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository.

7. A method as in claim 6 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

8. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information to gauge trends from the central message repository.

9. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information to gauge performance from the central message repository.

10. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge trends.

11. A method as in claim 10 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

12. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge performance.

13. A method as in claim 12 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

14. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about process efficiency.

15. A method as in claim 1 wherein said original message data comprises a data field.

16. A method as in claim 15 wherein said data field is path specific.

17. A method as in claim 1 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process, and wherein said action provides data which is used as a data field within said monitoring message.

18. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information in order to measure, monitor and track enterprise communications and processes.

19. A method as in claim 1 wherein said retrieving information from the central message repository comprises broadcasting unused pipeline capacity.

20. A method as in claim 1 wherein retrieving said information from the central message repository provides an alternative to retrieving original message data from an application that had originally generated said original message data.

21. A method as in claim 1 further comprising relieving monitoring pressure from a source application.

22. A method as in claim 1 further comprising providing a duplicate of said central message repository.

23. A method as in claim 22 further comprising providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.

24. A method as in claim 1 further comprising providing a mirror repository of said central message repository.

25. A method as in claim 24 wherein said mirror repository is used by an external entity.

26. A method as in claim 25 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.

27. A method as in claim 24 wherein, if more than one mirror repository is used, said repositories are combined.

28. A method as in claim 24 wherein said mirror repository is used either in addition to or instead of said central message repository.

29. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.

30. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.

31. A method as in claim 30 wherein said messages comprise error messages.

32. A method as in claim 30 wherein said messages comprise event messages.

33. A method as in claim 30 wherein said messages comprise exception messages.

34. A method as in claim 30 wherein said messages comprise trigger messages.

35. A method as in claim 30 wherein said messages comprise threshold messages.

36. A method as in claim 30 wherein said messages comprise flagged indicators.

37. A method as in claim 30 wherein said messages comprise specially designated messages.

38. A method as in claim 1 wherein said retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.

39. A method as in claim 38 wherein said retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.

40. A method as in claim 1 wherein said retrieving information from the central message repository further comprises permitting a user to retrieve information over a corporate extranet.

41. A method as in claim 1 further comprising providing a report.

42. A method as in claim 41 further comprising providing said report through an XML link to said central message repository.

43. A method as in claim 42 further comprising displaying said report.

44. A method as in claim 40 wherein said user comprises a customer, and said permitting a user to retrieve information over a corporate extranet further comprises permitting said customer to retrieve information concerning said customer's orders.

45. A method as in claim 43 wherein said display provides an option to drill down through said display for further detail.

46. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.

47. A method as in claim 46 wherein said information is distributed using a distribution method selected from the group consisting of an intranet, an extranet, and the Internet.

48. A method as in claim 46 wherein said information is distributed to business partners.

49. A method as in claim 48 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.

50. A method as in claim 46 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.

51. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message;

reviewing data collected in said transaction record;

wherein said original message data comprises status information of a process and/or sub process.

52. A method as in claim 51 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.

53. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.

54. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.

55. A method as in claim 51 further comprising providing the status of a process by providing access to said central message repository.

56. A method as in claim 51 further comprising adding, to said monitoring message, data other than said original message data.

57. A method as in claim 51 further comprising updating said transaction record.

58. A method as in claim 57 further comprising updating said transaction record by:

providing, through a second monitoring message, a second original message data to said transaction record; and,

populating said transaction record with said second original message data provided by said second monitoring message.

59. A method as in claim 51 further comprising completing a process.

60. A method as in claim 51 further comprising completing said transaction record.

61. A method as in claim 51 further comprising aborting a process.

62. A method as in claim 61 further comprising providing, in said transaction record, an indication that the process has been aborted.

63. A central message repository created by the method of claim 51.

64. A transaction record created by the method of claim 51.

65. A method as in claim 51 wherein said process is a simulated process.

66. A method as in claim 51 wherein said sub process is a simulated sub process.

67. A method as in claim 51 wherein said original message data is simulated original message data.

68. A method as in claim 51 further comprising providing the status of a sub process by providing access to said central message repository.

69. A method as in claim 51 further comprising providing the status of an activity by providing access to said central message repository.

70. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;

transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;

storing said original message data from said first activity, in a transaction record in said central message repository;

transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,

storing said original message data from said second activity, in said transaction record in said central message repository;

wherein said original message data comprises the status of said activity.

71. A method as in claim 70 further comprising determining the status of said sub process.

72. A method as in claim 70 wherein said original message data from each of said first and second activities comprises an activity specific set of data.

73. A method as in claim 70 wherein said first monitoring message further comprises altered original message data.

74. A method as in claim 70 wherein said first monitoring message further comprises data added to said original message data.

75. A method as in claim 70 further comprising reviewing said central message repository.

76. A method as in claim 75 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.

77. A method as in claim 70 further comprising distributing process progress information in real time.

78. A method as in claim 70 further comprising distributing said process progress information through broadcasting.

79. A method as in claim 70 further comprising distributing said process progress information through the Internet.

80. A method as in claim 70 further comprising analyzing said central message repository in order to determine a process trend.

81. A method as in claim 80 wherein said process trend is selected from the group consisting of: time between subprocesses: variances by customer, variances by order amount, bottlenecks and seasonal variations.

82. A method as in claim 81 wherein orders may be accelerated as a result of said analysis.

83. A method as in claim 70 further comprising providing a monitoring message repository.

84. A method as in claim 70 further comprising providing a report via an XML link to said central message repository.

85. A method as in claim 70 wherein said second monitoring message further comprises altered original message data.

86. A method as in claim 70 wherein said second monitoring message further comprises data added to said original message data.

87. A method as in claim 70 further comprising distributing said process progress information through Wireless Application Protocol.

88. A method as in claim 70 further comprising distributing said process progress information through an intranet.

89. A method as in claim 70 further comprising distributing said process progress information through an extranet.

90. An apparatus for use in an asynchronous messaging environment in a communications system or systems wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, through a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

means for retrieving information from the central message repository.

91. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about an order from the central message repository.

92. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about a customer from the central message repository.

93. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving process efficiency information from the central message repository.

94. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving time slice information from the central message repository.

95. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository.

96. An apparatus as in claim 95 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

97. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge trends from the central message repository.

98. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge performance from the central message repository.

99. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge trends.

100. An apparatus as in claim 99 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

101. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge performance.

102. An apparatus as in claim 101 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

103. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about process efficiency.

104. An apparatus as in claim 90 wherein said original message data comprises a data field.

105. An apparatus as in claim 104 wherein said data field is path specific.

106. An apparatus as in claim 90 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process an sub process, or process, and wherein said action provides data which is used as a data field within said monitoring message.

107. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information in order to measure, monitor and/or track enterprise communications and processes.

108. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises broadcasting unused pipeline capacity.

109. An apparatus as in claim 90 wherein said means for retrieving said information from the central message repository provides an alternative to means for retrieving original message data from an application that had originally generated said original message data.

110. An apparatus as in claim 90 further comprising means for relieving monitoring pressure from a source application.

111. An apparatus as in claim 90 further comprising means for providing a duplicate of said central message repository.

112. An apparatus as in claim 111 further comprising means for providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.

113. An apparatus as in claim 90 further comprising means for providing a mirror repository of said central message repository.

114. An apparatus as in claim 113 wherein said mirror repository is used by an external entity.

115. An apparatus as in claim 113 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.

116. An apparatus as in claim 113 wherein, if more than one minor repository is used, said repositories are combined.

117. An apparatus as in claim 113 wherein said mirror repository is used either in addition to or instead of said central message repository.

118. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.

119. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.

120. An apparatus as in claim 119 wherein said messages comprise error messages.

121. An apparatus as in claim 119 wherein said messages comprise event messages.

122. An apparatus as in claim 119 wherein said messages comprise exception messages.

123. An apparatus as in claim 119 wherein said messages comprise trigger messages.

124. An apparatus as in claim 119 wherein said messages comprise threshold messages.

125. An apparatus as in claim 119 wherein said messages comprise flagged indicators.

126. An apparatus as in claim 119 wherein said messages comprise specially designated messages.

127. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.

128. An apparatus as in claim 127 wherein said means for retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.

129. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises means for permitting a user to retrieve information over a corporate extranet.

130. An apparatus as in claim 90 further comprising means for providing a report.

131. An apparatus as in claim 130 further comprising means for providing said report through an XML link to said central message repository.

132. An apparatus as in claim 130 further comprising means for displaying said report.

133. An apparatus as in claim 129 wherein said user comprises a customer, and said means for permitting a user to retrieve information over a corporate extranet further comprises means for permitting said customer to retrieve information concerning said customer's orders.

134. An apparatus as in claim 132 wherein said means for displaying said report provides an option to drill down through a display generated by said means for displaying said report for further detail.

135. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, though a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least

one action selected from the group consisting of activity, sub process and process; and,

means for distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.

136. An apparatus as in claim 135 wherein said means for distributing information comprises a means for distributing information selected from the group consisting of an intranet, an extranet, and the Internet.

137. An apparatus as in claim 136 wherein said information is distributed to business partners.

138. An apparatus as in claim 137 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.

139. An apparatus as in claim 136 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.

140. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, through a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,

means for updating said transaction record;

wherein said original message data comprises stares information of a process and/or sub process.

141. An apparatus as in claim 140 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.

142. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.

143. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.

144. An apparatus as in claim 140 further comprising updating said transaction record by:

means for providing, through a second monitoring message, a second original message data to said transaction record; and,

means for populating said transaction record with said second original message data provided by said second monitoring message.

145. An apparatus as in claim 140 further comprising completing a process.

146. An apparatus as in claim 140 further comprising completing said transaction record.

147. An apparatus as in claim 140 further comprising aborting a process.

148. An apparatus as in claim 140 further comprising providing, in said transaction record, an indication that the record has been abandoned.

149. A central message repository created by the method of claim 140.

150. A transaction record created by the method of claim 140.

151. An apparatus as in claim 140 wherein said process is a simulated process.

152. An apparatus as in claim 140 wherein said sub process is a simulated sub process.

153. An apparatus as in claim 140 wherein said original message data is simulated original message data.

154. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;

means for transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;

means for storing said original message data from said first activity, in a transaction record in said central message repository;

means for transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,

means for storing said original message data from said second activity, in said transaction record in said central message repository;

wherein said original message data comprises the status of said activity.

155. An apparatus as in claim 154 further comprising determining the status of said sub process.

156. An apparatus as in claim 154 wherein said original message data from each of said first and second activities comprises an activity specific set of data.

157. An apparatus as in claim 155 wherein said first monitoring message further comprises altered original message data.

158. An apparatus as in claim 155 wherein said first monitoring message further comprises data added to said original message data.

159. An apparatus as in claim 155 further comprising means for reviewing said central message repository.

160. An apparatus as in claim 159 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.

161. An apparatus as in claim 155 further comprising distributing process progress information in real time.

162. An apparatus as in claim 161 further comprising distributing said process progress information through broadcasting.

163. An apparatus as in claim 161 further comprising distributing said process progress information through the Internet.

164. An apparatus as in claim 155 further comprising analyzing said central message repository in order to determine a process trend.

165. An apparatus as in claim 154 wherein said process trend is selected from the group consisting of: time between sub-processes, variances by customer, variances by order amount, bottlenecks and seasonal variations.

166. An apparatus as in claim 165 wherein orders may be accelerated as a result of said analysis.

167. An apparatus as in claim 155 further comprising providing a monitoring message repository.

168. An apparatus as in claim 155 further comprising providing a report via an XML link to said central message repository.

169. An apparatus as in claim 155 wherein said second monitoring message further comprises altered original message data.

170. An apparatus as in claim 155 wherein said second monitoring message further comprises data added to said original message data.

171. An apparatus as in claim 155 further comprising distributing said process progress information through Wireless Application Protocol.

172. An apparatus as in claim 155 further comprising distributing said process progress information through an intranet.

173. An apparatus as in claim 155 further comprising distributing said process progress information through an extranet.

* * * * *

APPENDIX "F"

COPY OF CERTIFICATE OF SERVICE AND STATEMENT REGARDING SERVICE

CERTIFICATE OF SERVICE UNDER 37 C.F.R. 1.248

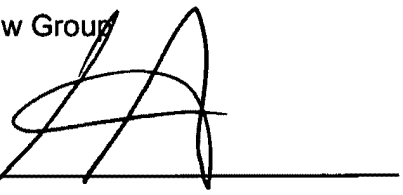
Applicant hereby serves the Notification under 37 C.F.R. 4.565 in the above referenced case to:

Joseph E. Chovanes
5 Great Valley Parkway, Suite 329
Malvern, PA 19355

As per U.S.C. §1.248 service is made via first class mail on October 18, 2011.

Respectfully submitted,

Sprinkle IP Law Group



Ariyeh Akmal
Reg. No. 51,388

Dated: October 18, 2011

1301 West 25th Street, Suite 408
Austin, Texas 78705
Tel. (512) 637-9220
Fax. (512) 371-9088

Enclosures: Appendix A - G

APPENDIX "G"

COPY OF
PTO/SB/08a AND PTO/SB/08b
FORMS WITH CITED REFERENCES

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Requester's Name and Address: ARIYEH AKMAL
SPRINKLE IP LAW GROUP
1301 W. 25TH STREET, SUITE 408
AUSTIN, TX 78705

Patent Number: 7,603,674 Request Receipt Date: 10-18-2011 Control Number:90/009,960 Date Mailed: 11-02-2011

NOTICE OF FAILURE TO COMPLY WITH *EX PARTE* REEXAMINATION REQUEST FILING REQUIREMENTS (37 CFR 1.510(c))

The Central Reexamination Unit (CRU) in the United States Patent and Trademark Office (USPTO) has received a request for *ex parte* reexamination. The request cannot be processed, because the below-identified filing date requirements for an *ex parte* reexamination request have not been satisfied. If a fully compliant response is not received within 30 days of the mailing date of this notice, the request will be treated as a prior art citation under 37 CFR 1.501 or closed from public view, at the Office's option. A **filing date** will **NOT** be assigned to the request until the deficiencies noted below are corrected (37 CFR 1.510(d)):

The following items required by **37 CFR 1.510(a) and (b)** are missing:

☐ 1. The *ex parte s* reexamination filing fee under 37 CFR 1.20(c)(1) – see attached Form PTO-2057.

☐ 2. An identification of the patent by its patent number, and of every claim of the patent for which reexamination is requested.

☐ 3. A citation of the patents and printed publications that are presented to raise a substantial new question of patentability.

☒ 4. A statement pointing out each substantial new question of patentability based on the cited patents & printed publications, and a detailed explanation of the pertinency and manner of applying the patents & printed publications to every claim for which reexamination is requested.

☐ 5. A legible copy of every patent or printed publication (other than U.S. patents or U.S. patent publications) relied upon or referred to in (3) and (4) above, accompanied by an English language translation of all the necessary and pertinent parts of any non-English language document.

☐ 6. A legible copy of the entire patent including the front face, drawings, and specification/claims (in **double** column format) for which reexamination is requested, and a legible copy of any disclaimer, certificate of correction, or reexamination certificate issued in the patent. All copies must have each page plainly written on only one side of a sheet of paper.

☐ 7. A certification by the third party requester that a copy of the request has been served in its entirety on the patent owner at the address provided for in 37 CFR 1.33(c). The name and address of the party served must be indicated. If service was not possible, a duplicate copy of the request must be supplied to the Office.

☐ 8. Other:

☒ Explanation of above item(s): See Attachment.

Any written correspondence in response to this notice must include a submission pursuant to the attached instructions. **The instructions for a detailed explanation for an *ex parte* reexamination request differ from those for an *inter partes* reexamination request.** Any written correspondence in response to this notice should be mailed to the Central Reexamination Unit (CRU), ATTN: "Box *Ex Parte* Reexam" at the USPTO address indicated at the top of this notice. Any "replacement documents" may be facsimile transmitted to the CRU at the FAX number indicated below. A REPLACEMENT STATEMENT AND EXPLANATION UNDER 37 CFR 1.510(b)(1) and (2) MAY NOT BE FACSIMILE TRANSMITTED.

Michelle Jackson
Paralegal Specialist, Central Reexamination Unit
(571) 272- 2783; FAX No. (571) 273-9900

cc: Patent Owner's Name and Address: JOSEPH E. CHOVANES
5 GREAT VALLEY PARKWAY
SUITE 329
MALVERN, PA 19355

ATTACHMENT TO PTOL 2077

Control Number: 90/009,960
Patent Number: 7,603,674
Request Receipt Date: October 18, 2011

The request for *Ex Parte* Reexamination of U.S. Patent 7,603,674 filed on October 18, 2011, does not comply with the filing requirements of *ex parte* reexamination proceedings under 37 CFR 1.510(b)(1) and (2).

Reexamination was requested for U.S. Patent No. 7,603,674 (in this instance claims 1 – 173 are requested). The request does not provide a "statement pointing out each substantial new question of patentability based on the prior patents and printed publications" for each cited document, as is required by 37 CFR 1.510(b)(1).

The request is incomplete as to compliance with 37 CFR 1.510(b)(1) for the following reason:

The request has failed to provide the requisite identification and explanation, in compliance with 37 CFR 1.510(b)(1), of what substantial new questions of patentability (SNQs) are being raised by the cited prior art documents under 37 CFR 1.510(b). In other words, the request fails to clearly point out and explain how each asserted SNQ is substantially different from those raised in the previous examination of the patent before the Office. **It is not sufficient to merely state that the references were not of record in the prior prosecution of the '674 patent.** Also, as pointed out in MPEP 2216, "[i]t is not sufficient that a request for reexamination merely proposes one or more rejections of a patent claim or claims as a basis for reexamination. It must first be demonstrated that a patent or printed publication that is relied upon in a proposed rejection presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the patent for which reexamination is requested, and during prosecution of any other prior proceeding involving the patent for which reexamination is requested." [Emphasis added]

While the request does address what the references teach individually, the request does not clearly explain, for each identified SNQ, which teachings are substantially different than those considered in the previous examination of the patent by the Office.

Accordingly, any corrected request filed in response to this decision must clearly establish, for each substantial new question/proposed rejection identified, what is the new technical teaching being provided by the citation of the newly cited references. See MPEP 2242.

Additionally, the request does not include a detailed explanation of how the reference listed below and cited on the Information Disclosure Statement (Substitute Form PTO/SB/08a) applies to every claim of U.S. Patent No. 7,603,674 for which reexamination was requested.

NON PATENT LITERATURE DOCUMENTS

C3 WACKEROW, DIETER, *MQSeries Primer*, MQSeries Enterprise Application Integration Center, October 1999, 34 pgs., IBM Corp., NY.

If the requester were permitted to omit an explanation of the SNQs raised and how such documents cited in the request are applied to the patent claims, an undue burden would be placed on the Office to address each document in the determination on the request, without an explanation of the relevance to the patent claims. Accordingly, such an omission is prohibited by law.

The request is incomplete as to compliance with 37 CFR 1.510(b)(2) for the following reason:

The request does not provide a "detailed explanation of the pertinency and manner of applying the cited prior art to every claim for which reexamination is requested," as is required by 37 CFR 1.510(b)(2).

Specifically, the request is not clear as to the proposed rejections that are being set forth, because it fails to provide a clear explanation of the proposed rejections due to the ambiguity of the proposed rejections. For example, at page 3 of the request it is stated:

" C. ADVANCED WORKFLOW SOLUTIONS (Hoffmann, Marc, Shute, David and Ebbers, Mike. *Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark*. International Business Machines Corporation, January, 1999). Claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 are Anticipated under 35 U.S.C. § 102 by Advanced Workflow Solutions; Claims 42, 43, 45, 52-58, 68, 73, 74, 77-78, 84-87, 131, 132, 134, 141-144, 157, 158, 161, 162 and 168-171 are rendered obvious under 35 U.S.C. § 103(a) by Advanced Workflow Solutions in view of Leymann '633 **or** Leymann '111"

See MPEP 2217, which states:

The explanation **must not** lump together the proposed rejections or proposed combinations of references.

Examples of inappropriate language:

- Claim 1 is unpatentable under 35 U.S.C. 103 as being obvious over Smith **and/or** Charles.

- Claim 2 is unpatentable under 35 U.S.C. 103 as being obvious over Smith in view of Jones **or** Harvey. (This could however be used if both

Jones and Harvey provide a minor teaching which can be articulated in a sentence or two.)

- Claims 3 - 10 are unpatentable under 35 U.S.C. 103 as being obvious over Smith in view of either Jones **and** Cooper **or** Harvey **and** Cooper.

Examples of appropriate language:

- Claim 1 is unpatentable under 35 U.S.C. 103 as being obvious over Smith.
- Claim 1 is unpatentable under 35 U.S.C. 103 as being obvious over Charles.
- Claim 2 is unpatentable under 35 U.S.C. 103 as being obvious over Smith in view of Jones.
- Claim 2 is unpatentable under 35 U.S.C. 103 as being obvious over Smith in view of Harvey.
- Claims 3 - 10 are unpatentable under 35 U.S.C. 103 as being obvious over Smith in view of Jones, and further in view of Cooper.
- Claims 3 - 10 are unpatentable under 35 U.S.C. 103 as being obvious over Smith in view of Harvey, and further in view of Cooper

In accordance with 37 CFR 1.510(c), a filing date for the reexamination request will not be granted **at this time**.

To assist requesters in filing compliant Requests for Reexamination, a helpful guide "Best Practices and FAQs for filing compliant reexamination requests" can be found at:

www.uspto.gov/patents/stats/Reexamination_Information.jsp

Requester has the option to respond to this identification of defects in the request papers by applying the appropriate option(s) set forth below:

Providing an explanation of the manner and pertinence of applying each cited document to the patent claims for which reexamination is requested, as required by 37 CFR 1.510(b)(2). Every limitation in each patent claim for which reexamination is requested must be addressed. Where references are applied in combination, each combination must be individually identified, and the basis for forming each combination of references must be supplied.

For any document for which no explanation is to be provided for any of the patent claims, explicitly withdrawing the reference from the request and replacing the presently-submitted listing of documents with a new listing confined to the documents for which a discussion required by 37 CFR 1.510(b)(2) has been provided via the request papers.

Serving the corrected request (including all supporting documents such as the listing of references, copies of the references, appendices, etc...) on the patent owner at the current correspondence address under 37 CFR 1.33(a) in the patent record at the time the corrected request was filed, or alternatively, if such service cannot be made, providing an explanation of the efforts taken to provide service and why those efforts were not successful, and a second copy of the request papers.

The existing forms PTO1449 would be expressly withdrawn by requester, and replaced with a newly provided form or forms.

Failure to submit a proper response to this Notice may result in the termination of the request, with no filing date accorded.

All correspondence related to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at http://sportal.gov/authenticate/authenticateuserlocalepf.html.

By Mail to: Mail Stop Ex Parte Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By Hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
CORRECTED REQUEST FOR *EX PARTE* REEXAMINATION TRANSMITTAL FORM	Atty Docket No. **OPEN2200-1**

Control No. **90/009,960**	
Patent No. **7,603,674**	Date Issued **10/13/2009**
In the Application of: **Vincent R. Cyr**	
Application No. **11/398,133**	Date Filed: **04/05/2006**
Title: **APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES**	

Mail Stop: Central Reexamination Unit *Attention:* Box *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Certificate of Transmission Under 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited electronically with the U.S. Patent and Trademark Office using the United States Patent and Trademark Office's EFS-Web system on **November 7, 2011.**

Delia Narvaiz

1. Filed contemporaneously is a corrected request for *ex parte* reexamination pursuant to 37 CFR 1.510 of U.S. Patent No. 7,603,674, which issued on October 13, 2009 (the '674 patent). The corrected request responds to the Notice of Failure to Comply with Ex Parte Reexamination Request Filing Requirements, mailed on November 2, 2011.

2. The Commissioner is authorized to charge any fees beyond that amount which may be required, or to credit any overpayment, to Deposit Account No. 50-3183.

3. **Reexamination of claims 1-173 is requested.**

4. The corrected *ex parte* request for reexamination contemporaneously filed includes at least the following items:

   a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1) (*See*, e.g. Sections **I**, **V** and **VI** of the corrected request and **Appendices A, B, C and D**);

   b. An identification of every claim for which reexamination is requested and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2)

(See, e.g. Sections **IV** and **VI** of the corrected request and **Appendices A, B, C and D**); and

c. A replacement listing of documents (e.g. PTO SB/08 Form) containing documents for which a discussion as required by 37 CFR 1.510(b)(2) has been provided. Previously-cited Reference C3, WACKEROW, DIETER, *MQSeries Primer*, MQSeries Enterprise Application Integration Center, October 1999, 34 pgs., IBM Corp., NY, and the previous listing of documents is hereby expressly withdrawn from the Request. (See Appendix G.)

5. It is certified that a copy of the corrected *ex parte* request has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c). Applicant hereby serves the Notification under 37 C.F.R. 4.565 in the above referenced case to:

Joseph E. Chovanes
5 Great Valley Parkway, Suite 329
Malvern, PA 19355

As per U.S.C. §1.248 service is made via first class mail on November 7, 2011.

6. The other items included with the original request for *ex parte* reexamination filed on October 18, 2011, have not been filed because they have not changed.

Respectfully submitted,
SPRINKLE IP LAW GROUP

Dated: November 7, 2011

Ari G Akmal
Reg. No. 51,388

1301 W. 25th Street, Suite 408
Austin, Texas 78705
Phone: 512-637-9220
Fax: 512-371-9088

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Ex Parte* Reexamination of: Vincent R. Cyr et al. U.S. Patent No. 7,603,674 Issued: October 13, 2009	CONTROL NO. 90/009,960 Examiner: HO, Andy (Prior) Attorney Docket No. OPEN2200-1
For: **APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES**	**CORRECTED REQUEST FOR *Ex Parte* REEXAMINATION UNDER 37 CFR § 1.510** Date: November 7, 2011

CERTIFICATION UNDER 37 C.F.R. §1.10

I hereby certify that this document is being deposited electronically with the U.S. Patent and Trademark Office using the United States Patent and Trademark Office's EFS-Web system on **November 7, 2011.**

Delia Narvaiz

Mail Stop: *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

I. INTRODUCTION

This Request for *Ex Parte* Reexamination of U.S. Patent No. 7,603,674 (the "'674 Patent") raises substantial new questions of patentability based on, among other things, prior art not disclosed or considered during the prosecution of the '674 Patent, which was filed on April 5, 2006, claiming priority to U.S. Patent Application No. 09/737,494 (the "'494 Application"), filed on December 15, 2000, and which issued on October 13, 2009.[1]

Specifically, during the prosecution of the '674 Patent, the following prior art references were neither disclosed to nor considered by the Examiner: (1) U.S. Patent No. 7,003,781 to Blackwell et al.; (2) *Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark* by Marc Hoffmann, David Shute, and Mike Ebbers; (3) U.S. Patent No. 6,073,111 to Leymann et al.; and (4) U.S. Patent Publication No. 2002/0038276 to Buhannic et al. During prosecution of the '674 Patent, portions of the following prior art reference were cited by the Applicant but were never cited by the Examiner nor discussed on the record during prosecution: *Production Workflow Concepts and Techniques* by Frank Leymann and Dieter Roller. During prosecution of the '674 Patent, the following prior art reference was cited by the Applicant but was never cited by the Examiner nor discussed on the record during prosecution: U.S. Patent No. 6,122,633 to Leymann et al. Each of the above referenced patents or printed publications presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.

[1] Requestor is also aware of the following patents and patent applications related to the '674 Patent: (i) U.S. Patent No. 7,062,749 (the "'749 Patent"), which issued on June 13, 2006, from the '494 Application, to which the '674 Patent claims priority; and, (ii) U.S. Patent Application No. 11/356,538 (U.S. Pub. No. 2006/0150156) which is a divisional of the '494 Application. As noted below, the Requestor is aware of a separate request for reexamination which was submitted contemporaneously with this request with respect to the '749 Patent.

II. BACKGROUND

As the '674 Patent generally involves the use of messages in a computer environment, some background information regarding messaging may be useful. In a distributed computing environment, different applications or other programs (which may or may not be on different physical computers) often need to communicate with one another (*e.g.*, to provide data to another application, receive data from another application, invoke another application, etc.). One approach to implementing such communication is through the use of "messaging."

Messaging can be either synchronous or asynchronous. In synchronous messaging, the application (the "sender") that sends a communication (the "message") waits for a response from the recipient of the message (the "receiver") before continuing on with further processing. In asynchronous messaging, the sender may immediately continue other processing after the message is sent.

One common approach to implementing an asynchronous messaging system is through the use of queuing. In an asynchronous messaging system that employs queuing, applications do not communicate with one another directly. Instead, messages are sent to, and retrieved from, queues. As it is asynchronous, an application can place messages into a queue, even if the intended recipient application is not available to retrieve messages from the queue at that time. Moreover, the recipient application can retrieve the message from the queue when that application is available and ready for the message.

Message queues can also be used for what is generally known as "publish and subscribe" messaging. In this type of messaging, which is also asynchronous, it is not the sender application that is directing the message to a specific recipient application. Rather, it is the recipient applications that actually "subscribe" or declare to the messaging system that they are interested in receiving messages containing particular content. A sending application "publishes" a message by providing it to the messaging system through a particular queue. The

messaging system can then deliver the message to the various destination queues associated with any recipient applications that have subscribed to messages of the type received from the sender, and when it is available and ready for the message. The recipient application can then retrieve the message from its associated destination queue.

Messaging systems provide a powerful and flexible way for allowing communications between distributed applications in an asynchronous manner. Accordingly, these asynchronous messaging systems were employed as the communication mechanism in a variety of contexts. One particular context in which such messaging systems were employed was that of workflow management systems.

A workflow management system is designed to facilitate the implementation of a business (or other type of) process. Examples of business processes include such things as a product ordering process, a loan approval process, and a travel reservation process. Generally, processes are made up of a number of separate activities or subprocesses which must occur in a particular order. A subprocess is simply an activity of a process which is, itself, implemented as a separate process (*e.g.*, it can be made up of its own set of activities or subprocesses). For example, a loan process may include an "Asses Risk" activity and a "Credit Check" activity, while a product ordering process may include a "Check Inventory" activity and a "Bill Customer" activity.

A workflow management system attempts to facilitate the implementation of such processes by (i) determining which activity of a process needs to execute; (ii) communicating with the activity to provide the activity with the input data that it needs; (iii) receiving output data from the activity after the activity has completed; and (iv) determining the next activity in the process that needs to execute, based on the output data received from the activity. This can continue until the process is completed or otherwise halted.

In most workflow management system architectures, the workflow management system serves as a central location from which all communications to activities originate and to which all communications from activities are sent. In many cases, the various activities of a process are implemented in a distributed computing environment, where they may be performed on a number of computers in a variety of locations. For example, a "Check Inventory" activity may be performed by a computing device in a warehouse, while the "Bill Customer" activity may be performed by a computing device in the accounting department. The messaging systems described above were utilized by workflow management systems to effectuate the communications between the workflow management system and the various activities of a process. In other words, the workflow management systems used messaging to pass data to and receive data from the various activities of a process.

These workflow management systems also leveraged their position as the central location through which all communications to and from activities flow to maintain a database of the data generated by or about the execution of a process, including data communicated to and received from the various activities of a process. This data is referred to by many workflow management systems as the audit trail or audit log. This audit trail was leveraged by users of workflow management systems to a variety of ends, including process monitoring, process modeling, process design, process derivation, process analysis, and legal auditing/compliance requirements.

III. CONCURRENT PROCEEDINGS

To the knowledge of the undersigned, there are currently no co-pending reissue, reexamination, or interference proceedings concerning the '674 Patent. The undersigned is aware of a separate request for reexamination which was submitted contemporaneously with this request with respect to U.S. Patent No. 7,062,749 (the "'749 Patent"), which issued from the '494 Application to which the '674 Patent claims priority and which shares the same

specification as the '674 Patent.

The '674 Patent (along with the '749 Patent) is currently in litigation in the District Court for the Eastern District of Pennsylvania in a case styled YYZ, LLC v. Metastorm, Inc. and OpenText Corporation, Civil Action No. 2:11-CV-01609-JCJ. The case is currently set for trial, beginning on May 29, 2012. A Markman hearing has not yet been set by the Court.

IV. CLAIMS FOR WHICH REEXAMINATION IS REQUESTED

Reexamination is requested for all claims of the '674 Patent, Claims 1-173.

V. PRIOR ART PATENTS AND PUBLICATIONS

Pursuant to 37 C.F.R. § 1.555, the undersigned brings to the attention of the Examiner the following references, all of which are listed on the Form PTO/SB/08 contemporaneously filed.[2] **As no prior art references were discussed on the record during the prosecution of the application that resulted in the '674 Patent, each of the below referenced patents or printed publications presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.**

Reference Name	Reference Description
"Production Workflow"	Printed Publication: Leymann, Frank, and Roller, Dieter. *Production Workflow Concepts and Techniques*. Upper Saddle River: Prentice-Hall, Inc., July 30, 1999. ISBN 0-13-021753-0.
"Blackwell"	U.S. Patent No. 7,003,781 to Blackwell et al., which was filed on May 5, 2000 and which issued on February 21, 2006.
"Advanced Workflow Solutions ("AWS")	Printed Publication: Hoffmann, Marc, Shute, David, and Ebbers, Mike. *Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark*. International Business Machines Corporation, January, 1999. SG24-5371-00.
"Leymann '633"	U.S. Patent No. 6,122,633 to Leymann et al., which was filed on April 20, 1998, and which issued on September 19, 2000.
"Leymann '111"	U.S. Patent No. 6,073,111 to Leymann et al., which was filed on April 15, 1998, and which issued on June 6, 2000.

[2] Copies of the references are attached hereto as Appendix G.

"Buhannic"	U.S. Patent Application Publication No. 2002/0038276 to Buhannic et al., which was filed on June 26, 2001 as a non-provisional of U.S. Provisional Patent Application No. 60/214,256 filed on June 26, 2000 and U.S. Provisional Patent Application No. 60/298,083 filed on June 15, 2001.

For the reasons discussed below, the prior art patents and printed publications submitted herein raise substantial new questions of patentability as to claims 1 through 173 of the '674 Patent.

VI. STATEMENT POINTING OUT SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY AND DESCRIPTION OF THE RELEVANT PRIOR ART

This Request for *Ex Parte* Reexamination of the '674 Patent raises the following substantial new questions of patentability. Each of the references or combinations of references detailed below presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.

A. Production Workflow

1. Whether claims 1-18, 20, 38-49, 51-107, 109, 127-138 and 140-173 are anticipated under 35 U.S.C. § 102 by Production Workflow.

2. Whether claims 19, 21-37, 50, 108, 110-126 and 139 are rendered obvious under 35 U.S.C. § 103(a) by Production Workflow in view of One of Ordinary Skill in the Art.

B. Blackwell

1. Whether claims 1, 3, 5-7, 10-13, 15, 17-18, 20, 30, 40-41, 44-48, 52-55, 57-60, 63-65, 67, 69-70, 72, 75, 77, 79, 88-90, 92, 94-96, 99-102, 104, 106-107, 109, 119, 129-130, 133-137, 141-146, 149-151, 153-154, 156, 159, 161, 163 and 172-173 are anticipated under 35 U.S.C. § 102 by Blackwell.

2. Whether claims 2, 22-28, 38-39, 51, 71, 87, 91, 111-117, 127-128, 140, 155 and 171 are rendered obvious under 35 U.S.C. § 103(a) by Blackwell in view of One of Ordinary Skill in the Art.

C. Advanced Workflow Solutions (AWS)

1. Whether claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 are anticipated under 35 U.S.C. § 102 by AWS.

2. Whether claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170 are rendered obvious under 35 U.S.C. § 103(a) by AWS in view of Leymann '111.

3. Whether claims 42, 43, 45, 52-55, 57, 58, 77, 78, 84, 87, 131, 132, 134, 141-144, 161, 162, 168, and 171 are rendered obvious under 35 U.S.C. § 103(a) by AWS in view of Leymann '633.

D. Buhannic

1. Whether claims 1, 46, 51, 70, 135, 140 and 154 are anticipated under 35 U.S.C. § 102 by Buhannic.

A. PRODUCTION WORKFLOW (Leymann, Frank, and Roller, Dieter. *Production Workflow Concepts and Techniques*. Upper Saddle River: Prentice-Hall, Inc., July 30, 1999). Claims 1-18, 20, 38-49, 51-107, 109, 127-138 and 140-173 are Anticipated under 35 U.S.C. § 102 by Production Workflow. Claims 19, 21-37, 50, 108, 110-126 and 139 are Rendered Obvious under 35 U.S.C. § 103(a) by Production Workflow in View of One of Ordinary Skill in the Art.

Production Workflow Concepts and Techniques ("Production Workflow") was first published on July 30, 1999 (more than a year prior to the filing of the '494 Application to which the '674 Patent claims priority) as evidenced by copyright registration number TX0005060483 in the copyright catalog of the Library of Congress (a copy of which is included with the cited reference). Portions of Production Workflow were cited by the applicant during prosecution of the '674 Patent but were never cited by the Examiner nor discussed on the record during prosecution. Other portions of Production Workflow which are discussed herein were not cited by the applicant nor discovered by the Examiner during prosecution of the '674 Patent. Consequently, with respect to the '674 Patent, portions of Production Workflow are prior art which was not previously considered while other portions were never discussed on the record. Production Workflow presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.

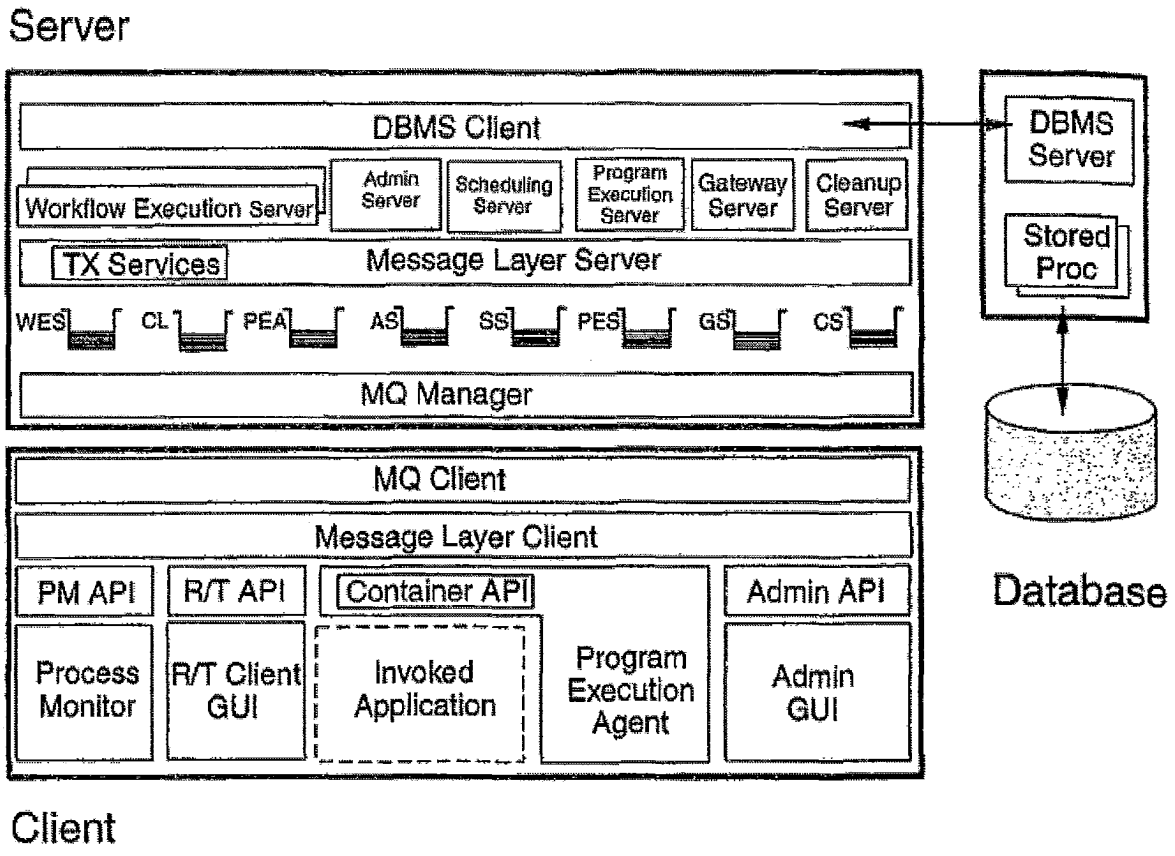
Generally speaking, Production Workflow describes various concepts, techniques, architectures and implementations of workflow management systems as they existed in 1999. In general, such workflow management systems were used to design, model, simulate, execute and monitor the execution of processes. During the execution of a process, the workflow management system passes input to an activity of the process, receives output from the activity, and determines which activity of the process to execute next, based on the output from the previous activity. The passing of such input and output data can be done through the use of

messaging. Workflow management systems also maintain a database with data tracking the status of the processes executed by the system.

1. Production Workflow's Application to Claim 1.

More specifically, with reference to claim 1 of the '674 Patent, Production Workflow discloses a workflow management system comprised of components that communicate using a messaging system, such as IBM's MQSeries (**an asynchronous messaging environment**). The workflow management system disclosed by Production Workflow is comprised of a workflow server for managing a process and various clients that execute the activities of such process. In executing a process, messages are passed between the workflow server and these clients; these messages are **original messages**. The messages returned from these clients at the completion of an activity contain output data (**original message data**). This output data (**original message data)** can include **status information of an activity, a sub process or the process,** such as activityState, Location, Finished, Confirmed, etc. The output data from the activity (**original message data**) is sent from the workflow server to a database (**a central message repository**) using a separate message (**a monitoring message**) over the MQSeries messaging system. The output data for that activity (**original message data**) is stored in the database (**central message repository**) in association with the output data from other activities of the same process (**a transaction record**). The **status information** stored in the database (central message repository) can subsequently be **retrieved** from such database (**central message repository**).

The architecture of a workflow management system with a workflow server and various clients executing activities of a given process is shown in FIGURE 10.10 of Production Workflow (pg. 366) and described in the accompanying text.



As shown in Figure 10.10, the workflow server ("Sever") communicates with a client ("Client") implementing an activity of a given process, using a message over the MQSeries messaging system. After completing the activity, the Client sends a message (**an original message**) to the Server with the output data (**original message data**) of that activity. The Server sends this output data (that includes **status information of the activity, a sub process or the process**) to the DBMS Server using a separate message (**a monitoring message**) over the MQSeries messaging system. The output data of the activity is stored in the database ("Database") (**central message repository**) where it is associated with the output data from other activities of the same process (**a transaction record**). The **status information** in the database (central message repository) can then be **retrieved** from such database (**central message repository**). *See*, Production Workflow, Chapter 10, beginning at 364.

a. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising

As described in Production Workflow, a messaging system such as MQSeries may provide the infrastructure that is needed for communication between different components of the workflow management system. Thus, the components of the workflow management system are able to communicate asynchronously (**an asynchronous messaging environment**) in executing a process. *See,* Production Workflow, Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379.

The execution of such a process is based on a "process model" which includes the set of activities to be carried out as part of that process and the logic to determine which activities to execute. Each of the activities of a process is associated with an input container for input data required by the activity and an output container for output data from the activity. *See*, Production Workflow, Sec. 1.4, pg. 7; Sec. 2.2, pgs. 33-35; Sec. 3.1, pgs. 62-63; Sec. 3.4.2, pgs. 78-79; Sec. 4.2.3, pg. 126; Sec. 4.3, pg. 128; and Sec. 4.4, pgs. 136-137.

During the execution of a particular instance of a process (referred to in Production Workflow as both a "process" and a "process instance") the workflow management system (i) assembles an input container for an activity of that process (also referred to variously in Production Workflow as an "activity implementation," "program," or "subprocess"); (ii) communicates the input container to that activity; (iii) receives a communication from that activity containing the output container (with the output data from that activity); and (iv) determines which activity (or activities) to execute next based on the process model and the data contained in the output container received from that activity. *See*, Production Workflow, Sec. 1.4, pg. 7; Sec. 2.2, pgs. 33-35; Sec. 3.1, pgs. 62-63; Sec. 3.4.2, pgs. 78-79 and 84-86; Sec. 3.4.4, pg. 92; Sec. 4.2.3, pg. 126; Sec. 4.3, pg. 128; Sec. 4.3.2, pgs.131-132; Sec. 4.4,

pgs. 136-137; Sec. 5.4, pgs. 196-198; Sec. 7.6, pgs. 274-278; Sec. 10.3.5, pgs. 372; and Sec. 10.5, pgs. 378-379.

An activity may be invoked asynchronously by the workflow management system using a message passed over a messaging system. More specifically, a message comprising the input container for the activity may be sent to the activity implementation. After completing the activity, the activity implementation returns a message (**an original message**) that contains the output container with the output data of the activity (**original message data**) to the workflow management system. *See*, Production Workflow, Sec. 1.11, pg. 16; Sec. 3.4.4, pg. 92; Sec. 9.4.2, pgs. 319-336; and Sec. 10.14, pg. 419.

b. providing, through a monitoring message, at least part of said original message data to a central message repository;

As noted above, after the completion of an activity, the activity implementation returns a message (**an original message**) to the workflow management system that contains the output container with the output data of the activity (**original message data**). Production Workflow also teaches that, during the execution of a process instance, all important events, including the output containers of each completed activity of the process, are stored in a database.

To store such events in the database, a separate message (**monitoring message**) is sent to the database server via the MQSeries messaging system, where this message (**monitoring message**) includes the output container (**original message data**) returned in a message (**original message**) from a client executing an activity. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.4.4, pg. 92; Sec. 7.6.1, pgs. 274-277; Sec. 9.3, pg. 317; Sec. 10.2, pgs. 364-366; Sec. 10.2.1, pg. 368; and Sec. 10.12.2, pgs. 410-412. The database server enters the data it receives into the database (**central message repository**).

Referring to FIGURE 10.10 above, the use of messaging to communicate with the database is further described at Sec. 10.2, pg. 366 of Production Workflow. Access to the

database of the workflow management system is accomplished through the DBMS server, using the DBMS client. Messaging (*e.g.*, MQSeries) is the underlying communication mechanism used between clients and servers and between servers and servers, as discussed at Sec. 10.2, pg. 364. Thus, data to be stored in the database (**central message repository**) is provided to the DBMS Server using a message (**a monitoring message**).

The use of messaging to communicate data to be stored in the database is also explained at Sec. 9.3.1, pg. 317, which notes that the database management client is responsible for handling messages related to stored procedure invocation and returning responses. *See*, Production Workflow, Sec. 9.4.2, pgs. 319-336; Sec. 10.2, pgs. 364-366; and Sec. 10.3, pgs. 369-374.

c. populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, subprocess and process; and,

The database server stores the data it receives via the message (**monitoring message**) discussed above, including the output container (**original message data**) from an activity, into an entry (**transaction record**) in the database (**central message repository**) associated with the process instance for which the activity was performed. In particular, the database (**central message repository**) maintains one or more entries for each process instance, including dates and times of the occurrence of activities, identifiers of activities and processes, states of activities, the output containers of each of the activities and other information. Particular processes and their current state and processing history, including the current state of each of the activities and the output containers of the activities, can thus be queried. *See*, Production Workflow, Sec. 1.17.1, pg. 25; Sec. 3.6, pgs. 105-108; Sec. 3.7.1, pg. 113; Sec. 4.3.2, pg.132; Sec. 7.6.1, pgs. 274-277; and Sec. 11.4, pgs. 440-441.

As shown in Production Workflow, an entry for a process instance can be made in a "process instance table," where the process entry includes an associated "process identifier" field (PID). Moreover, each activity instance associated with that process (*i.e.*, each activity performed as part of that process) can have an entry in an "activity instance table," where each activity entry also includes the PID for the corresponding process instance. Thus, all of the activity entries for a given process instance can be associated. *See*, Production Workflow, Sec. 10.13, pgs. 412-417. The output containers (**original message data**) for completed activities are associated with the corresponding entry in the activity instance table.

The output container (**original message data**) for an activity may contain values such as: activityState, Return Code, Location, Flight Price Limit, Hotel Price Limit, Finished, Error Report Number, All Flights Confirmed, Fare, All Hotels Confirmed, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pg. 105-106; Sec. 4.3.2, pg.132; Sec. 7.6.1, pgs. 274-277; Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462. These values can indicate a state or status of a step in the process (**status information of the activity, a sub process or the process**).

d. Retrieving information from the central message repository.

Production Workflow discloses that information from the database (**central message repository**), including **status information of an activity, a sub process or the process,** can be **retrieved** in order to be analyzed, examined or used for other purposes (*e.g.*, for process modeling, display, etc.) *See*, Production Workflow, Sec. 2.7.1, pgs. 44-45; Sec. 2.7.2, pgs. 45-46; Sec. 2.11, pgs. 59-60; Sec. 3.7.1, pg. 107; and Sec. 10.2, pg. 366.

2. Claims Chart Mapping of Production Workflow to the Claim Limitations of Claims 1- 18, 20, 38-49, 51-107, 109, 127-138 and 140-173 of the '674 Patent.

As demonstrated above, Production Workflow raises substantial new questions of patentability with respect to the claims of the '674 Patent. A full claims chart mapping Production Workflow to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "A-1."** For the convenience of the Examiner, the portion of the claims chart for representative claim 1 is reproduced below.

Claim Language of '674 Patent	Portion of Production Workflow That Meets the Limitation[3]
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** At Sec. 10.2, pgs. 364-367 and FIGURE 10.10, Production Workflow discloses a workflow management system having a server with multiple server components which interface with various clients for implementing activities that make up certain processes. The workflow system is implemented using messaging as the underlying communication mechanism both between the servers of the workflow management system and between such servers and the clients of the workflow management system. *See also*, Sec. 1.11, pg. 16. As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used to asynchronously invoke activity implementations on the clients of the workflow management system. At Sec. 9.4.2, pgs. 319-335, Production Workflow describes asynchronous messaging systems and points out (at pg. 320) that one example of such a messaging system is MQSeries. Communication between the various pieces of an application can happen in two inherently different manners: synchronously and asynchronously. Production Workflow at Sec. 9.4, pg. 317. *See also*, FIGURES 9.9, Sec. 9.13.

[3] According to the USPTO Examination Guidelines for Patent Applications, claims are to be given their broadest reasonable interpretation and limitations appearing in the specification but not recited in the claims should not be read into the claims. *See, e.g.*, M.P.E.P. 2100.

	"[T]he appropriate component is invoked by sending a message to the component. The target component...sends back a message that contains the output container and other appropriate information, such as a return code. It should be noted that this...works asynchronously." Production Workflow at Sec. 3.4.4, pg. 92. The concept of message queuing as the underlying communication mechanism is not only used between clients and the server but also between the servers. When a component needs services from another component, it sends a message using the queue name of the appropriate component. Production Workflow at Sec. 10.2, pg. 364; *see also*, Secs. 9.4.2-9.6.3, pgs. 319-335; FIGURES 10.9, 10.10. **Original Message** As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used by a workflow management server to asynchronously invoke activity implementations on clients by sending a message containing input data. When the activity implementation is complete, a message containing an output container is communicated to the workflow management server by the activity implementation. Each of these messages is an original message. **Original Message Data** As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used by a workflow management server to asynchronously invoke activity implementations on clients by sending a message containing input data. When the activity implementation is complete, a message containing an output container is communicated to the workflow management server by the activity implementation. Thus, the output container included in a message communicated to the workflow management server is original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** As described at Sec. 10.2, pg. 366 of Production Workflow, access to the database of the workflow management system is accomplished through the DBMS server using a DBMS client. Messaging is the underlying communication mechanism used between clients and servers and between servers and servers, as discussed at Sec. 10.2, pg. 364. The use of messaging to communicate data to be stored in

	the database is further explained at Sec. 9.3.1, pg. 317, which notes that a database management client is responsible for handling messages related to stored procedure invocation and returning responses. Production Workflow further describes how the output container received in a message from the activity implementation is stored in this database. For example, at Sec. 2.7.1, pg. 45, Production Workflow describes how the workflow management system stores an entry in the audit trail for all relevant actions, such as the start and completion of an activity. The entry in the audit trail contains all of the important information about the event, such as the type of event, the activity associated with the event, the input passed to the activity, the output produced by the activity and the time the event occurred. As another example, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. *See also,* pg. 57. Thus, the message sent from the workflow management system to the DBMS server with the output container (original message data) is a monitoring message. **Central Message Repository** At Sec. 10.2, pgs. 364-367 and FIGURE 10.10, Production Workflow discloses a workflow management system that has a server with multiple server components and clients for implementing activities. One of the server components is a DBMS server used to access a centralized database
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** Sec. 10.13, pgs. 412-419 gives an example of a simple schema for the central database, such that a record is stored for a process instance and a record is stored for each activity instance associated with that process instance, where the record for the process instance and the record for each of the activity instances are associated using a process identifier (PID). Production Workflow describes at Sec. 2.7.1, pg. 45 how entries contain information such as the input passed to the activity and the output produced by the activity. Additionally, at Sec. 7.6, pgs. 274-277, Production Workflow describes

	how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. Thus, it can be known which activities have been completed, which activities are active, etc. Accordingly, the input data passed to each activity in a message and the output container received from each activity in a message (original message data) is stored in association with the record for a given process. **Status Information of an Activity, Sub Process or Process** Production Workflow discusses various examples of statuses that may be contained in an output container received in a message (original message) from an activity implementation. For example, the output containers for an activity may contain such values as activityState, Return Code, Location, Flight Price Limit, Hotel Price Limit, Finished, Error Report Number, All Flights Confirmed, Fare, All Hotels Confirmed, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pgs. 105-106;, Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462. Data member activityState holds the state of the activity instance. Production Workflow at Sec. 10.15, pg. 421. Moreover, Sec. 3.5.3, pgs 101-102 describe, and FIGURES 3.18 and 3.19 graphically depict that the status of an activity is in the input container passed to an activity or an output container received from an activity. Note that in FIGURE 3.18 this status, as viewed by a user, is "Running," while in FIGURE 3.19 the activity is "Collect Customer Information" and the status is listed as "Ready."
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** Production Workflow discloses that information stored in the database (centralized message repository), including status information of an activity, sub process or process, can be retrieved in order to be analyzed, examined or used for other purposes (*e.g.*, for process modeling, display, etc.). For example: At Sec. 2.7.1, pgs. 44-45, Production Workflow describes how the audit trail written by the workflow management system can be analyzed using data mining technology. At

	Sec. 2.9, pg. 55, Production Workflow describes how the results of analysis are presented in graphical form or in output files that can be process be data analysis tools. At Sec. 2.9, pg. 55, Production Workflow also describes various formats for the presentation of data for monitoring business processes. At Sec. 2.7.2, pgs. 45-46, Production Workflow describes how the audit trail, including information on each of the activities, is processed to derive a process model. At Sec. 2.11, pgs. 59-60, Production Workflow describes how the audit trail can be examined. At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. At Sec 2.9.3, pg. 52, Production Workflow describes the derivation of probabilities through the processing of the audit trail written by the workflow management system. At Sec.10.2, pg. 366, Production Workflow describes how a workflow management system's database is accessed and how queries are made against objects in the database. At Sec. 2.11, pg. 59, Production Workflow describes how monitoring of a business process is performed by obtaining information from the audit trail that the workflow management system writes in the database and how the audit trail in the database can be examined using APIs, SQL calls or messaging.

3. Claims Chart Mapping of Production Workflow to the Claim Limitations of Claims 19, 21-37, 50, 108, 110-126 and 139 of the '674 Patent.

In addition to being anticipated by Production Workflow, certain claims of the '674 Patent are also rendered obvious under 35 U.S.C. § 103(a) by Production Workflow, in view of the knowledge of one of ordinary skill in the art. A full claims chart mapping Production Workflow in view of one of ordinary skill in the art to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "A-2."** The combination

of Production Workflow with the knowledge of one or ordinary skill in the art raises substantial new questions of patentability with respect to the claims of the '674 Patent.

B. BLACKWELL (U.S. Patent No. 7,003,781). Claims 1, 3, 5-7, 10-13, 15, 17-18, 20, 40-41, 44, 46-48, 70, 72, 75, 77, 79, 88-90, 92, 94-96, 99-102, 104, 106-107, 109, 129-130, 133, 135-137, 154, 156, 159, 161, 163 and 172-173 are Anticipated under 35 U.S.C. § 102 by Blackwell; Claims 2, 22-28, 30, 38-39, 42-43, 45, 51-55, 57-60, 63-65, 67, 69, 71, 87, 91, 111-117, 119, 127-128, 131-132, 134, 140-146, 149-151, 153, 155 and 171 are rendered obvious under 35 U.S.C. § 103(a) by Blackwell in view of One of Ordinary Skill in the Art.

Blackwell was filed on May 5, 2000, before the filing of the '494 Application to which the '674 Patent claims priority. Blackwell issued on February 21, 2006. Blackwell was not cited by the applicant nor discovered by the Examiner during prosecution of the '674 Patent. Consequently, with respect to the '674 Patent, Blackwell is prior art which was not previously considered. Blackwell presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.

Generally speaking, Blackwell describes a system for monitoring the operation of a distributed system that includes a plurality of applications communicating with one another through the same MQSeries messaging system described in the '674 Patent. An interface provided by the MQSeries messaging system is monitored to capture events, which include data from the messages passing through the messaging system. The events are sent to a database where they are grouped into transactions which can be subsequently displayed to a user. *See*, Blackwell, Abstract, col. 1, lines 47-51 and col. 2, lines 5-11.

1. Blackwell's Application to Claim 1.

Blackwell discloses the use of an MQSeries messaging system (**an asynchronous messaging environment**) to pass messages between user applications. The messages passed between the user applications are **original messages**. Blackwell further teaches the use of sensors, located between the user applications and the MQSeries messaging system, to intercept these original messages and create events containing data (**original message data**)

from the intercepted original messages. This original message data can include **status information of an activity or the process** such as 'approved', 'disapproved', 'conditionally approved,' the current state of a transaction, etc. The sensors use the same MQSeries messaging system to send a separate message (**a monitoring message**) with the event to a database (**a central message repository**). The event with the original message data is then stored in the database, where it is correlated with other events in the database (**a transaction record**) and where **status information of an activity or the process** can subsequently be **retrieved**.

The operation of Blackwell, as described above, is graphically demonstrated in FIGURES 13 and 14 of Blackwell.

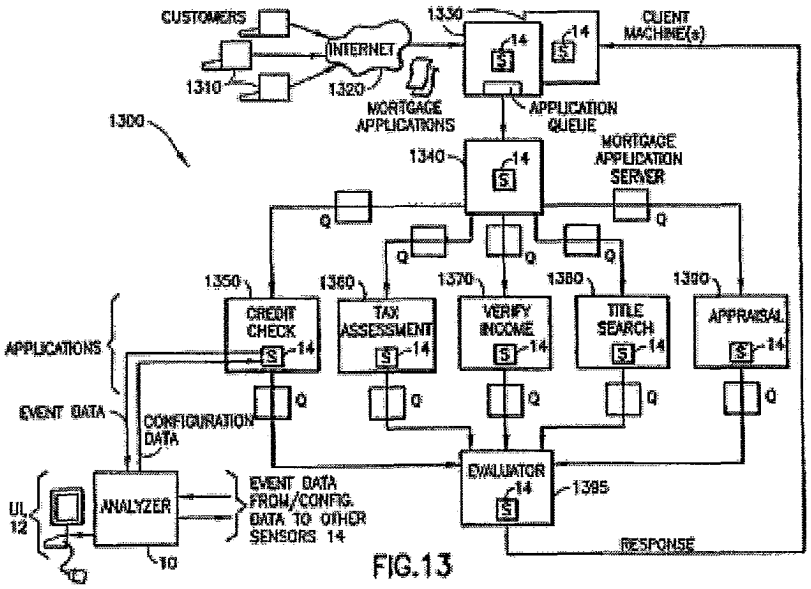


FIG.13

Specifically, as shown in FIGURE 13, user applications (*e.g.*, Credit Check 1350, Tax Assessment 1360, etc.) process a mortgage request by passing messages (**original messages**). Sensors 14 intercept these original messages and create events containing data (**original message data**) from these original messages. These sensors 14 send these created events to the analyzer 10 using a separate message (**a monitoring message**). FIGURE 14

(shown below) graphically depicts a sensor 14 sending a message with an event to analyzer 10.

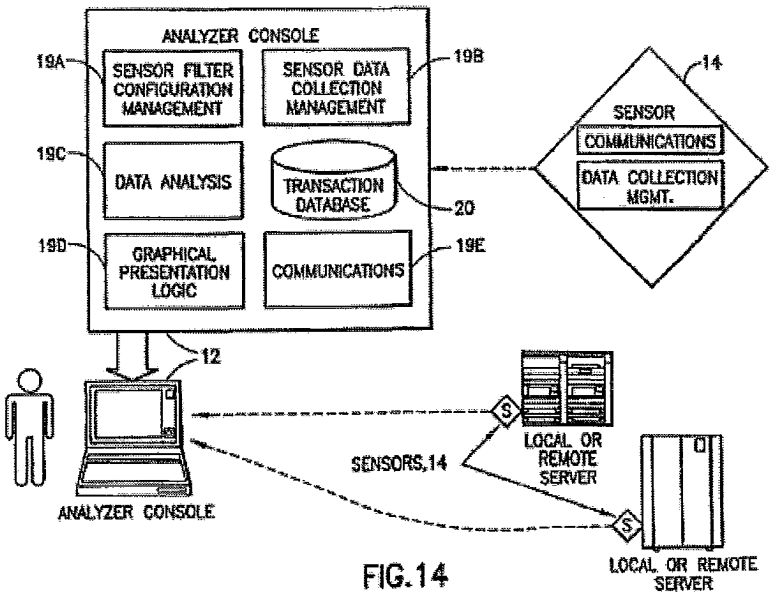


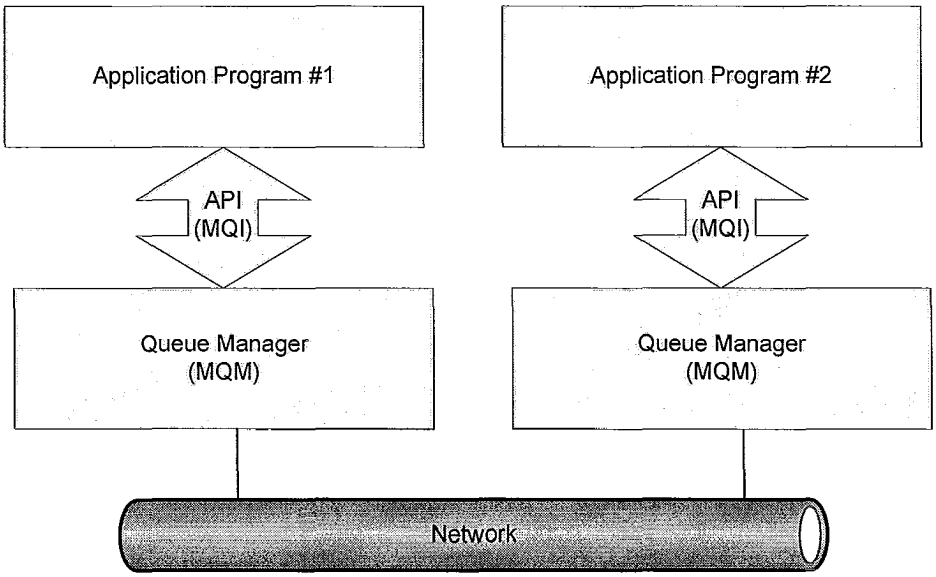
FIG.14

These event messages are stored in the transaction database 20 (**a central message repository**), where the events of a particular transaction are correlated (**a transaction record**) and where **status information of an activity or the process** can subsequently be **retrieved**. *See*, Blackwell, col. 5, lines 31-36; col. 15, lines 15-57; col. 16, lines 3-60; and FIGURES 13 and 14.

a. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising

Blackwell and the '674 Patent both specifically call out IBM's MQSeries message-oriented middleware. IBM's MQSeries is a messaging system that allows applications to communicate with one another by passing messages between them through the use of queues, "so that the various programs and applications can run independently and asynchronously relative to one another." Blackwell, col. 15, lines 16-26. Thus, Blackwell and the '674 Patent both operate in an **asynchronous messaging environment.**

The figure set out below depicts the functionality of the IBM MQSeries product.



As can be seen from the drawing, application programs (Application Program #1 and Application Program #2), which are located on two different systems, are able to communicate with one another by passing messages between them over the "Network." To facilitate this communication, the IBM MQSeries product provides a queue manager (also referred to as a message queue manager or MQM) and certain application programming interfaces (API) which allow the applications to communicate with the queue manager (referred to as the Message Queue Interface or MQI).

Two of the main API calls provided by the MQI are MQPUT and MQGET. The MQPUT API call is used by an application program to put a message on a queue. An MQPUT API call made by an application includes a message descriptor or header and a buffer containing the message itself (i.e., the message body). The message is the data that is sent from one application program to another. Blackwell refers to this buffer as the user data buffer; the message as the user data message or user message; and the data in the user message as the user data. See, Blackwell, col. 6, lines 54-57; col. 7, lines 28-33; col. 11, lines 42-50, col. 15, lines 50-55; and col. 16, lines 43-46. So, in the drawing above, if Application Program #1 intends to send a message to Application Program #2, it would issue an MQPUT API call to the

MQM, such API call including the message intended for Application Program #2. In response to this API call, the MQM would place the message on a queue which is accessible by Application Program #2. When Application Program #2 is ready for the message, it would then issue an MQGET API call to the MQM, allowing it to read the message off of the queue.

The user applications of Blackwell pass messages between themselves using the MQPUT and MQGET APIs. *See*, Blackwell, col. 2, lines 19-29; col. 7, lines 14-20; col. 9, lines 11-24; and col. 15, lines 15-27. These messages passed between the user applications of Blackwell using these APIs are **original messages,** and the data contained is these messages is **original message data**.

b. providing, through a monitoring message, at least part of said original message data to a central message repository;

On top of the basic MQSeries messaging system, Blackwell teaches the use of sensors 14, placed between the user applications and the MQM, which sensors are able to intercept API calls (*e.g.*, MQPUT) intended for the MQM by emulating such calls. *See*, Blackwell, col. 2, lines 31-39; col. 3, lines 49-54; col. 3, line 64 to col. 4, line 11; and col. 4, line 59 to col. 5, line 44. As noted above, the API calls include the message header and the message (**the original message**). Blackwell further teaches that, once the sensor 14 intercepts an API call, the sensor 14 can generate an event capturing the intercepted API call. *See*, Blackwell, col. 4, lines 5-10 and col. 5, lines 61-66. An event generated by sensor 14 may comprise data including all, or a portion of, the data in the user message (**original message data** from the **original message**).

The generated event is then sent to the analyzer by the sensor 14 using a separate message (**a monitoring message**) on the same MQSeries messaging system. The event is then stored in a transaction database 20 (**a central message repository**). *See*, Blackwell col. 5, lines 31-36. As specifically disclosed by Blackwell at col. 15, lines 61-64:

> [A]nalyzer console 12 receives event messages form the sensors, stores the messages in the transaction database 20, and operates on the stored event data with a data analysis model . . . .

FIGURES 13 and 14 (shown above) demonstrate that transaction database 20 of the analyzer is a centralized database (**a central message repository**).

> **c. populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and**

The events stored in the transaction database 20 that are associated with the same transaction are connected or correlated. *See,* Blackwell, col. 14, lines 23-30. As discussed above, such events contain user message data (**original message data**) extracted from the messages intercepted by the sensors 14. Thus, the connected or correlated events comprise a **transaction record populated** with user message data (**original message data**).

Blackwell discusses various examples of statuses (**status information of an activity or the process**) that may be contained in the user message data (**the original message data**) in an event that is used to populate a transaction record. *See, e.g.,* Blackwell, col. 3, lines 55-57; col. 4, lines 5-10; and col. 7, lines 28-33. Examples of **such status information** include: times when events occurred (col. 7, lines 15-20 and col. 9, lines 25-40), date that a loan obligation was satisfied (col. 11, lines 42-49), responses from applications such as 'approved', 'disapproved', 'conditionally approved' (col. 15, lines 1-5) and the current state of a transaction (col. 16, lines 19-23). *See also,* Blackwell at col. 16, lines 42-47.

> **d. retrieving information from the central message repository.**

Blackwell also discloses that **status information of an activity or the process** can be subsequently **retrieved** from the transaction database 20 (**central message repository**). *See,* Blackwell, col. 15, lines 46-57 and col. 16, lines 3-60.

2. Claims Chart Mapping of Blackwell to the Claim Limitations of Claims 1, 3, 5-7, 10-13, 15, 17-18, 20, 40-41, 44, 46-48, 70, 72, 75, 77, 79, 88-90, 92, 94-96, 99-102, 104, 106-107, 109, 129-130, 133, 135-137, 154, 156, 159, 161, 163 and 172-173 of the '674 Patent.

As demonstrated above, Blackwell raises substantial new questions of patentability with respect to the claims of the '674 Patent. A full claims chart mapping Blackwell to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "B-1."** For the convenience of the Examiner, the portion of the claims chart for representative claim 1 is reproduced below.

Claim Language of '674 Patent	Portion of U.S. Patent No. 7,003,781 That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** The Blackwell patent describes at col. 15, lines 16-26 that the message passing technique can be a message-oriented middleware system such as MQSeries that operates with the components of the system to perform messaging so that the various programs and applications can run asynchronously. At col. 3, lines 43-48, Blackwell describes a method and system for monitoring the operation of a distributed data processing system, including a plurality of applications running on a plurality of host processors and communicating with one another through a message passing technique. **Original Message/Original Message Data** As discussed above for "asynchronous message environment," messages can be passed between applications using MQSeries. These messages are original messages containing original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** Blackwell discloses that a sensor operates to monitor the API calls from a user application to a queue manager, including, for example, MQPUT and MQGET . *See,* Blackwell, col. 12, lines 66-67; col. 7, lines 7-9; col. 4, lines 3-4; col. 4, line 64 to col. 5, line 13 and col. 14, lines 59-61. It is inherent that such API calls include a message header and a message buffer containing the message, itself (the original message containing original message data). *See,*

Blackwell, col. 6, lines 54-57; col. 7, lines 28-33; col. 11, lines 42-50; col. 15, lines 50-55; and col. 16, lines 43-46.

Blackwell describes intercepting an API call and generating an event comprising all or a portion of the data of the original message. *See,* Blackwell, col. 3, lines 53-54; col. 4, lines 5-9; col. 6, lines 53-57; col. 11, lines 42-51; and col. 15, lines 51-55.

As further described by Blackwell at col. 5, lines 26-36 and col. 15, lines 61-63, MQSeries may then be used to send an event message containing the event to a database for storage. The event message is a monitoring message, containing original message data.

Central Message Repository

The event message is stored in a database as described at col. 15, lines 61-63 and FIGURES 13 and 14. FIGURE 14, set out below, discloses that databases (20) is centralized. *See also*, Blackwell, FIGURE 13.

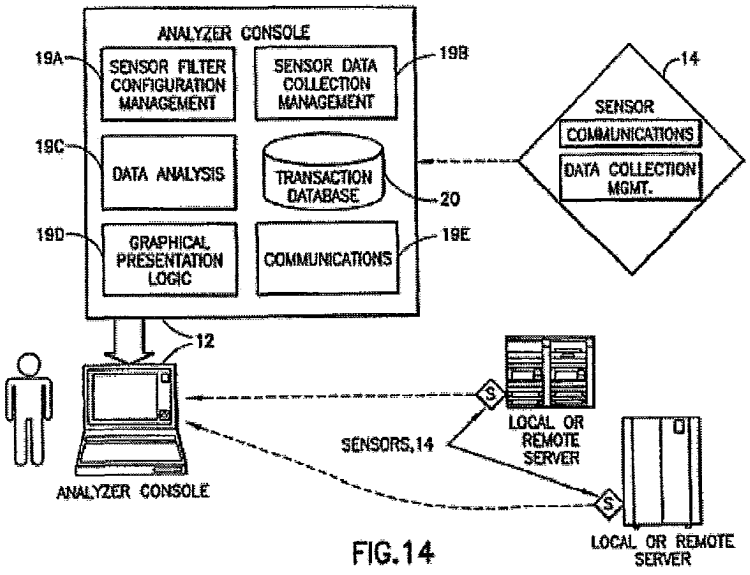


FIG.14

Thus, as shown by FIGURE 14, Blackwell discloses providing, through a message from sensor 14 to analyzer 12 (a monitoring message),data (original message data) extracted from a message (an original message) intercepted by sensor 14 to a transaction database 20 (a central message repository).

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** The events that are stored in the database are connected or correlated with other events in the same transaction. Blackwell, col. 14, lines 23-30. The connected or correlated events comprise a transaction record. This transaction record can be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. The process of correlating or connecting events in a transaction record is discussed in several places in Blackwell. For example: Processing a plurality of the stored events to identify logically correlated events, such as those associated with a business transaction. Blackwell at Abstract, col 3, lines 54-55; Events are grouped automatically into related transactions. Blackwell at col. 12, lines 53-55; What results is a set of connected or correlated events for a transaction that are correlated across all processes. Blackwell at col. 14, lines 25-27; *See also,* Blackwell at col. 17, lines 7-11. **Status Information of an Activity, Sub Process or the Process** Blackwell discusses various examples of status information that may be contained in the user message data (original message data). *See, e.g.,* Blackwell, col. 3, lines 55-57; col. 4, lines 5-10; and col. 7, lines 28-33. Examples include: times when events occurred (col. 7, lines 15-20 and col. 9, lines 25-40), date that a loan obligation was satisfied (col. 11, lines 42-49), responses from applications such as 'approved', 'disapproved', 'conditionally approved' (col. 15, lines 1-5) and the current state of a transaction (col. 16, lines 19-23). *See also,* Blackwell, col. 15, lines 51-55; col. 12, lines 1-15; col. 16, lines 39-47; col. 6, lines 1-8 and lines 54-57; and col. 12, line 2.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** The transaction record can, for example, be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. A user can, therefore, view the connected or correlated events at a transaction level view or "drill down" into the more specific details of the captured events making up the transaction, including the message descriptor or the user data of the message which resulted in the event. *See,* Blackwell, col 2, lines 58-62; col. 3, lines 54-58; col. 14, lines 23-30; col. 15, lines 34-59; and col. 16, lines 39-43. In this manner, Blackwell teaches a system that can provide a user with messages and other data relating to a single transaction of interest. *See,* Blackwell, col. 17, lines 6-10.

	At col. 3, lines 55-56, Blackwell discloses displaying all or a portion of the stored API call content data for logically correlated events where the displaying preferably includes a step of processing the stored API call content data for the logically correlated events. Blackwell discloses, at col. 5, lines 25-26, a user interface for visualizing the collected event data and for performing data analysis. Blackwell describes, at col. 15, lines 33-35, how captured event data is analyzed to isolate and track the flow of one or more transactions. Blackwell, at col. 15, lines 51-57, goes on to describe how a user interface enables an operator to sort the collected event data by a variety of criteria and drill down into more details of the captured event, such as the message descriptor and the user data. At col. 16, lines 19-52, Blackwell describes in detail various views that may be presented to an operator, including a dynamic transaction visualization where transactions are shown as they happen or have happened, an event history view where all events can be viewed at a desired level of detail, including an event details mode where all of the user data in each message can be viewed.

3. Claims Chart Mapping of Blackwell to the Claim Limitations of Claims 2, 22-28, 30, 38-39, 42-43, 45, 51-55, 57-60, 63-65, 67, 69, 71, 87, 91, 111-117, 119, 127-128, 131-132, 134, 140-146, 149-151, 153, 155 and 171 of the '674 Patent.

In addition to being anticipated by Blackwell, certain claims of the '674 Patent are also rendered obvious under 35 U.S.C. § 103(a) by Blackwell, in view of the knowledge of one of ordinary skill in the art. A full claims chart mapping Blackwell in view of one of ordinary skill in the art to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "B-2."** The combination of Blackwell with the knowledge of one of ordinary skill in the art raises substantial new questions of patentability with respect to the claims of the '674 Patent.

C. "ADVANCED WORKFLOW SOLUTIONS ("AWS")" (Hoffmann, Marc, Shute, David, and Ebbers, Mike. *Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark*. International Business Machines Corporation, January, 1999). Claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 are Anticipated under 35 U.S.C. § 102 by Advanced Workflow Solutions; Claims 56, 68, 73, 74, 85-86, 157, 158, 169, and 170 are rendered obvious under 35 U.S.C. § 103(a) by Advanced Workflow Solutions in view of Leymann '111; Claims 42, 43, 45, 52-55, 57, 58, 77, 78, 84, 87, 131, 132, 134, 141-144, 161, 162, 168, and 171 are rendered obvious under 35 U.S.C. § 103(a) by Advanced Workflow Solutions in view of Leymann '633

Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark ("Advanced Workflow Solutions" or "AWS") was first published in January of 1999, as evidenced by the copyright mark contained on the document, more than a year prior to the filing of the '494 Application to which the '674 Patent claims priority. AWS was not cited by the applicant nor discovered by the Examiner during prosecution of the '674 Patent. Consequently, with respect to the '674 Patent, AWS is prior art which was not previously considered. AWS presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.

AWS is an IBM Redbook discussing certain topics related to the architecture, design and implementation of Version 2.3 of IBM's FlowMark workflow management system. Rather than a user manual, AWS is a guide written to highlight certain issues/best practices that IBM's developers and engineers had developed, based on the experiences of their customers in installing and deploying the FlowMark product over several years. *See,* AWS, Preface at pg. vii.[4]

[4] There are other available documents, manuals, guides, redbooks and reference materials related to the functions and operation of Version 2.3 (and earlier) of FlowMark. Moreover, there are numerous issued patents covering various aspects of the FlowMark product, including the two patents referenced in this Section C.

AWS describes certain aspects of the version of the FlowMark product that existed in 1999. Specifically, AWS describes FlowMark's ability to: (i) communicate with applications through a messaging system, (ii) copy data from such messages into an audit trail, and (iii) send the audit trail records containing such data to a data store by way of messaging. Simply put, the FlowMark product, which was on sale in 1999, and which is described in AWS, included the functionality claimed in the '674 Patent.

1. AWS' Application to Claim 1.

As described by AWS, FlowMark, a workflow management system, can use the MQSeries messaging system (**an asynchronous messaging environment**) to pass messages to applications that perform the activities of a business process. The messages passed between the FlowMark system and these applications are **original messages**. The messages sent from an application performing an activity to FlowMark contain the output data from such application's performance of the activity. This output data is **original message data**. The output data (**original message data**) contained in a message from an application performing an activity can include **status information of the activity**, **a sub process or the process,** such as when the activity was completed.

AWS also discloses that FlowMark can record this output data (**original message data**) in an audit trail record (**a transaction record**), which is stored in an audit trail data store (**a central message repository**). FlowMark can accomplish this by using the same MQSeries messaging system to send a separate message (**a monitoring message**) containing the output data (**original message data**) from the application performing an activity to the audit trail data store (**central message repository**), where it is stored in an audit trail record (**a transaction record**). The **status information** can subsequently be **retrieved** from the audit trail data store (**central message repository**).

The operation of FlowMark, as described above, is graphically demonstrated in Figures 25 and 35 of AWS.

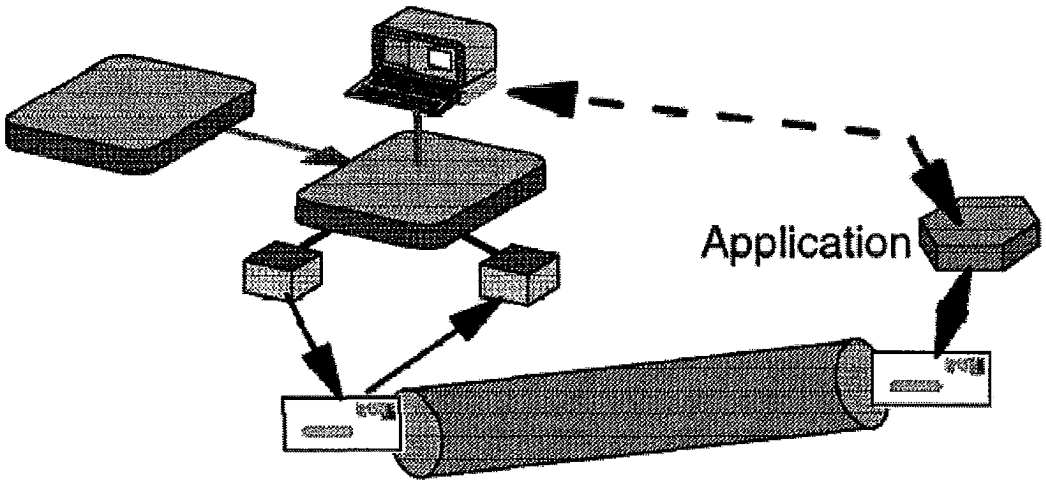


Figure 25. Message-based Workflow Application

As can be seen from Figure 25, FlowMark is able to communicate with "message-based workflow applications" (the "Application" in the figure) through the use of messages (shown in the figure as envelopes being passed through a tube). These messages being passed between FlowMark and the "Application" are **original messages**. The message from the "Application" to FlowMark contains the output data (**original message data**) from the "Application's" performance of an activity, which can include **status information of the activity, a sub process or the process,** such as when the activity was completed.

Further, as noted above, FlowMark can record this output data (**original message data**) into an audit trail record (**a transaction record**) stored in the audit trail data store (**a central message repository**). As can be seen from Figure 35, FlowMark (specifically, the FlowMark component labeled "Audit trail processor Part 2") sends the audit trail records to the audit trail data store (**central message repository**) by way of a separate message (**a monitoring message**). As further shown in Figure 35, monitoring tools and reporting tools can subsequently **retrieve** the **status information** from the audit trail data store (**central message**

repository).

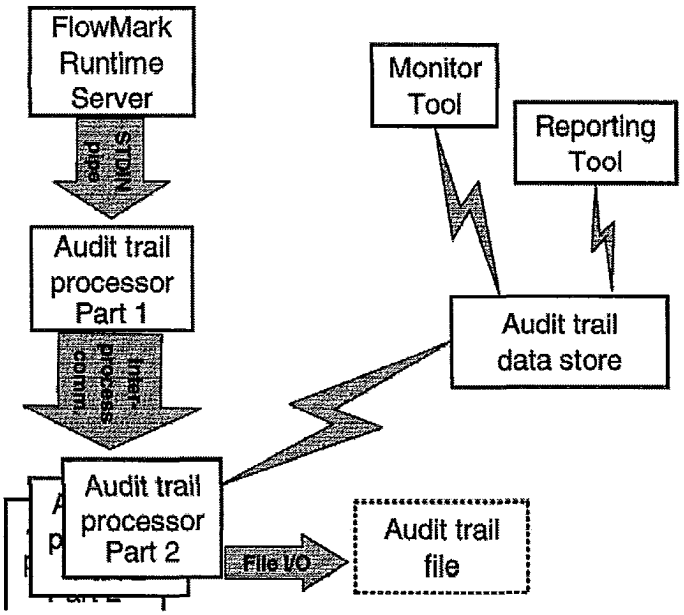


Figure 35. Building an Audit Trail Processor

See, AWS, Figures 25 and 35.

a. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising

FlowMark uses input and output containers to pass data back and forth with the applications that perform the activities that make up a given process. AWS, Sec. 6, pg. 49 ("The application can access the data input container to retrieve information that it needs to process the task, and it can store newly generated data in the output container, so that FlowMark can send this information to other activities in the process.") FlowMark was designed to allow communications with applications through messaging systems like IBM's MQSeries.[5] AWS, Sec. 6.3, pg. 51. FlowMark refers to such applications as "message-based applications." As noted by AWS (and the '674 Patent, itself), messaging systems

[5] As noted at Sec. 6.3, pg. 51, in 1999, messaging based applications were more common in the marketplace than workflow-ready applications and "many industry applications have been 'MQ-enabled.'" Accordingly, FlowMark provided "a building block for easy integration with MQSeries."

like MQSeries "usually transmit their messages asynchronously." AWS, Sec. 6.3, pg. 52. Thus, FlowMark, as described in AWS, operates in an **asynchronous messaging environment**.

When FlowMark needs to communicate with a message-based application (*e.g.*, the application is needed to perform an activity in an ongoing process), FlowMark posts the data that the application needs for the activity into a message and sends the message to the application through the messaging system. AWS, Sec. 6.3, pgs. 51-52. When the application completes the activity, the application sends a message to FlowMark, signaling that the activity is complete and providing the data to be stored in the output container. *See also,* AWS, Sec. 6, pg. 49 (applications "can store newly generated data in the output container, so that FlowMark can send this information to other activities in the process."); and AWS, Sec. 8.2.2, pg. 72. The message passed from the message-based application to FlowMark is an **original message** and the output data provided by the message-based application in such a message is **original message data**.

Figure 25, set out above, depicts the use of a messaging system to provide the communication between the FlowMark system and a message-based application. AWS, Sec. 6.3, pg. 52. The figure demonstrates how data from the input container provided by FlowMark is posted into a message and sent through the messaging system to the message-based application. The figure also shows that, when the message-based application is finished with the activity, it sends the data that was generated through such activity to FlowMark in a separate message (**an original message**).

b. providing, through a monitoring message, at least part of said original message data to a central message repository;

The FlowMark system records, in an audit trial, the output data (**original message data**) that was received in the message (**original message**) from the message-based

application. Specifically, as processes flow through the FlowMark system, FlowMark records every event that occurs in an audit trail. AWS, Sec. 10.2, pg. 82. This audit trail information contains the output data (**original message data**) that was received in the message (**original message**) from the message-based application. AWS discloses that this audit trail information can be written to an audit trail processing program. AWS, Sec. 10.3, pg. 84. The "audit trail processor" can process and store this audit trail information as audit trail records (**a transaction record**) in an audit trail data store (**a central message repository**).

As noted in AWS and as depicted in Figure 35, set out above, the audit trail processor can store the audit trail records in the audit trail data store through the use of messages passed via a messaging system (for example, MQSeries). Sec. 10.3.1, pg. 85 and Figure 35. Specifically, the "Audit trail processor Part 2" component of the FlowMark system can send the audit trail records, which contain the output data (**original message data**) from the message sent by the message-based application (**original message**), to the "Audit trail data store" (**central message repository**) in a separate message (**a monitoring message**). Thus, this separate message (**monitoring message**) sent to the "Audit trail data store" (**central message repository**) contains output data (**original message data**).

As depicted, in Figure 35, the audit trail data store (**central message repository**) is a separate database accessible by both the FlowMark server and certain monitoring and reporting tools. As noted by AWS, "[t]he data store should reside on a different machine, so that the performance of the FlowMark server machine is not significantly impacted." AWS, Sec. 10.3.1, pg. 85.

c. populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and

As shown in the discussion above, the "audit trail records" (**a transaction record**) which are stored in the audit trail data store (**a central message repository**) contain data (**original message data**) from the message (**original message**) returned to FlowMark by the message-based application performing an activity. As also noted above, the "Audit trail processor Part 2" component of the FlowMark system can send the audit trail records to the "Audit trail data store" (**central message repository**) by way of a separate message (**a monitoring message**). *See,* AWS, Sec. 10.2, pgs. 82-83; Sec. 10.3, pgs. 84-85; and Figure 35; *See also,* AWS Sec. 6.3, pgs. 51-52, Figure 25.

AWS discusses that the output data (**original message data**) contained in the separate message (**a monitoring message**) includes various examples of status information (**status information of an activity, a sub process or the process**) including, for example, the description of the object for which the status change is being recorded (which description is associated with the full data container and the data contained therein) and the time/date when the activity or process was completed. AWS, Sec. 10.2, pgs 82-83 ("Using the audit trail information, one can obtain the status of every process instance in the FlowMark system."); Sec. 10.4.1; *See also*, 10.4.2, pg. 89-91 and Figure 36.[6]

[6] U.S. Patent No. 6,122,633, Leymann et. al. (Leymann '633), which discusses the ability to subscribe to certain events in the database storing the audit trail records, contains a good discussion of some of the fields in the audit trail records, which would include the output data (original message data) contained in the message (original message) from the message-based application. Leymann '633, col. 9, line 42 to col. 10, line 15; FIGURE 1.

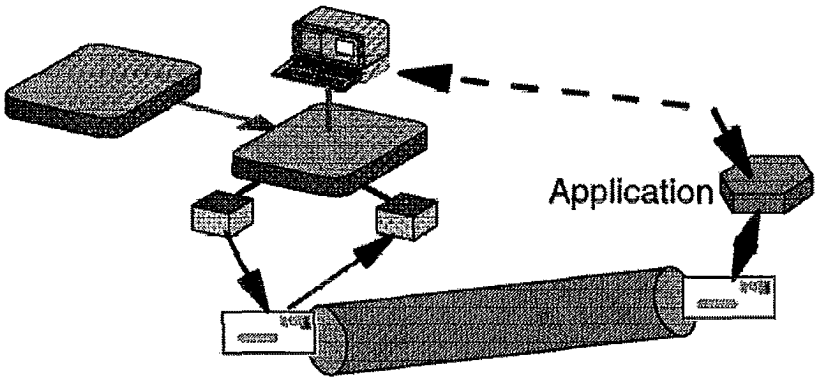
d. retrieving information from the central message repository.

AWS discloses that monitoring and analysis programs can subsequently **retrieve** the **status information** from the audit trail data store (**central message repository**). *See*, AWS, Sec. 10.3.1, pg. 85; *see also*, Figure 35 (depicting a monitoring tool accessing the audit trail data store); Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39.

2. Claims Chart Mapping of AWS to the Claim Limitations of Claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 of the '674 Patent.

As demonstrated above, AWS raises substantial new questions of patentability with respect to the claims of the '674 Patent. A full claims chart mapping AWS to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "C-1."** For the convenience of the Examiner, the portion of the claims chart for representative claim 1 is reproduced below.

Claim Language of '674 Patent	Portion of Advanced Workflow Solutions ("AWS") That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** At Sec. 6.3, pgs. 51-52, AWS discloses the use of an asynchronous messaging system like IBM's MQSeries to exchange data between the workflow system and the applications performing the activities of a process. *See also,* Figure 25. **Original Message/Original Message Data** As described at Sec. 6.3, pgs. 51-52 of AWS, FlowMark is able to communicate with a message-based application to perform an activity in a process. When FlowMark communicates with such a message-based application, the data necessary for the application is posted into a message, which is shipped to the target application tasked with performing the activity. On completion of the activity, the target application sends a message back to the workflow management system, signaling that the activity is complete and providing the data to be stored in the FlowMark output container. *See also,* Figure 25 (set out below); AWS, Sec. 6, pg. 49 (applications "can store newly generated data in the output container, so that FlowMark can send

	this information to other activities in the process."); and Sec. 8.2.2, pg. 72.  *Figure 25. Message-based Workflow Application* Figure 25 depicts the use of messages to transmit data to and from an application performing an activity in a process. These messages are original messages containing original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** At Sec. 10.2, pgs. 82-83, AWS discloses that output data (original message data) from a message-based application can be included in the audit trail. The audit trail can be written to an audit trail processing program. AWS, Sec. 10.3, pg. 84. The audit trail processor process and stores the audit trail records into an audit trail data store. Storing the audit trail records in the audit trail data store can be accomplished through messages passed via a messaging system (for example, MQSeries). AWS, Sec. 10.3.1, pg, 85 and Figure 35.

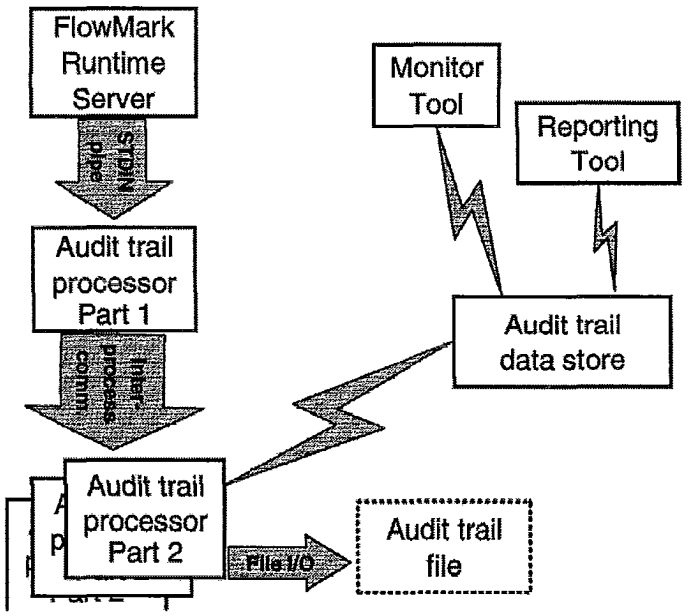


Figure 35. Building an Audit Trail Processor

Figure 35 from AWS depicts the "Audit trail processor Part 2" component of the FlowMark system sending audit trail records to the "Audit trail data store" by means of a message. This message is a monitoring message containing original message data.

Central Message Repository

As described in AWS and depicted in Figure 35, the "audit trail records" can be stored in an "audit trail data store." *See,* AWS, Sec. 10.2-10.4, pgs. 82-91, Figure 35. AWS further notes that "[t]he data store should reside on a different machine, so that the performance of the FlowMark server machine is not significantly impacted." AWS, Sec. 10.3.1, pg. 85. The audit trail data store is a central message repository.

Thus, as described in AWS and as depicted in Figure 35, FlowMark can send output data (original message data) provided in a message (original message) from a message-based application to an audit trail data store (central message repository) by means of a separate message (a monitoring message).

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** AWS discloses that FlowMark records every event that occurs in the FlowMark system while managing processes in the FlowMark audit trial. Sec. 10.2, pgs. 82-83. This audit trail information contains the output data (original message data) that was received in the message (original message) from the message-based application. *See,* AWS, Sec. 10.3.1, pg, 85; Figure 35; and Sec. 10.2, pgs. 82-83; *See also,* AWS, Sec. 6.3, pgs 51-52, Figure 25. AWS discloses that this audit trail information can be written to an audit trail processing program. AWS, Sec. 10.3, pg. 84. The "audit trail processor" can process and store this audit trail information as audit trail records in an audit trail data store (a central message repository). AWS, Sec. 10.3.1, pg. 85 and Figure 35. The audit trail records are transaction records. **Status Information of an Activity, Sub Process or Process** AWS discloses examples of status information that may be contained in the output data (original message data) provided in the message (original message) from the message-based application, including the description of the object for which the status change is being recorded (which description is associated with the full data container and the data contained therein) and the time/date when the activity or process was completed. AWS, Sec. 10.2, pgs 82-83 ("Using the audit trail information, one can obtain the status of every process instance in the FlowMark system."); Sec. 10.4.1 (describing the use of a workflow monitor to monitor the subprocesses of an overall process); *see also,* 10.4.2, pgs. 89-91 and Figure 36.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** AWS further discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. *See*, AWS, Sec. 10.3.1, pg. 85; *see also,* Figure 35 (depicting a monitoring tool accessing the audit trail data store); Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39.

3. Overview of Leymann '111 and Leymann '633.

In addition to being anticipated by AWS, certain claims of the '674 Patent are also rendered obvious under 35 U.S.C. § 103(a) by AWS, in view of Leymann '111 or Leymann '633, both of which were filed and issued prior to the filing of the '494 Application to which

the '674 Patent claims priority.[7] Specifically, both Leymann '111 and Leymann '633 are patents directed to aspects of a workflow management system. In fact, both patents specifically discuss embodiments in conjunction with the FlowMark system described in AWS. Leymann '111 at col. 7, lines 15-16; Leymann '633 at col. 4, lines 35-37. Thus, it would have been obvious to one of ordinary skill in the art to combine AWS with either Leymann '111 or Leymann '633.

Briefly, Leymann '111 is directed, in part, to the use of "dematerialization programs" on the data in the output containers received by the FlowMark system upon completion of an activity (*e.g.*, the output data (original message data) contained in a message (original message) sent by a message-based application). Leymann '111 col. 5, line 29 to col. 6, line 27; col. 9, lines 1-3. As can be seen from the patent and from FIGURE 2, such programs can be used to alter the data (*e.g.*, encrypt or compress the data) or add to the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8; col. 14, line 63 to col. 15, line 12.

Leymann '633 teaches the use of a subscription means associated with the database housing the audit trail records such that users of the system can establish "subscriptions," triggers and/or notifications, allowing them to be notified if certain events happen or are recoded in the audit trail records (*e.g.*, the approval of a loan exceeding $10,000). Leymann '633, col. 3, lines 8-25; col. 12, lines 22-51. Leymann '633 also describes the types of fields of data that can be included in an audit trail record, including (i) Timestamp (date and time the event took place); (ii) Process Instance Name (an identification of the process instance at issue); (iii) Activity Name (identification of the activity within the process model that is at issue); (iv) Associated Object Identifier (identifies

[7] Leymann '111 was filed on April 15, 1998, more than two years prior to the filing of the '494 Application; and it issued on June 6, 2000. Leymann '633 was filed on April 20, 1998, and issued on September 19, 2000.

the object associated with the event being recorded); and (v) "User" (contains user data associated with the process instance, such as customer number or amount of a loan). Leymann '633, col. 9, line 42 to col. 10, line 15; FIGURE 1.

4. Claims Chart Mapping of AWS in view of Leymann '111 to the Claim Limitations of Claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170 of the '674 Patent.

In addition to the issues raised in Section C.2 above, AWS, in view of Leymann '111, raises substantial new questions of patentability with respect to the claims of the '674 Patent. A full claims chart mapping AWS in view of Leymann '111 to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "C-2."** For the convenience of the Examiner, the portion of the claims chart for claim 56 is reproduced below.

Claim Language of '674 Patent	Portions of Leymann '111 That Render The Limitation Obvious Under 35 U.S.C. § 103(a) In View of AWS
Claim 56	
56. A method as in claim 51 further comprising adding, to said monitoring message, data other than said original message data.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 and 51 as set out in the claims chart attached as C-1), in view of Leymann '111. Specifically, Leymann '111 teaches the use of materialization/dematerialization programs on the data contained in the input and output containers which are used to pass data back and forth between the workflow systems and the applications performing the activities that make up a process. Specifically, Leymann '111 teaches the use of a set of programs on the data contained in the output container once it is received from the application performing the activity. Leymann '111, col. 5, line 29 to col. 6, line 27.[8] As described by Leymann '111, the results that are produced by the application performing the activity are put into an output container which is associated with such activity. Leymann '111, col. 9, lines 1-3. Once the application returns the associated output container to the workflow management system, the workflow management system can invoke a dematerialization chain, which is an ordered group of

[8] It would have been obvious to combine AWS and Leymann '111, as both references concern the FlowMark workflow management system. See, AWS at pg. vii; Leymann '111, col. 7, lines 15-16.

	programs intended to act on the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8. The programs can substitute or add data into the container, including, for example, adding references to data located outside of the container, or replacing references in the output container with the actual data associated with the reference. The programs can use other sources of data for enrichment of the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8; col. 14, line 63 to col. 15, line 12.

5. Claims Chart Mapping of AWS in view of Leymann '633 to the Claim Limitations of Claims 42, 43, 45, 52-55, 57, 58, 77, 78, 84, 87, 131, 132, 134, 141-144, 161, 162, 168, and 171 of the '674 Patent

In addition to the issues raised in Section C.2 above, AWS, in view of Leymann '633, raises substantial new questions of patentability with respect to the claims of the '674 Patent. A full claims chart mapping AWS in view of Leymann '633 to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "C-3."**

D. BUHANNIC (U.S. Patent Application Publication No. 2002/0038276). Claims 1, 46, 51, 70, 135, 140 and 154 are Anticipated under 35 U.S.C. § 102 by Buhannic.

Buhannic was filed on June 26, 2001, claiming priority to U.S. Provisional Patent Application No. 60/214,256, filed on June 26, 2000, (before the filing of the '494 Application to which the '674 Patent claims priority). Buhannic was published on March 28, 2002.[9] Buhannic was not cited by the applicant nor discovered by the Examiner during prosecution of the '674 Patent. Consequently, with respect to the '674 Patent, Buhannic is prior art which was not previously considered. Buhannic presents a new, non-cumulative technological teaching that was not previously considered and discussed on the record during the prosecution of the application that resulted in the '674 Patent for which reexamination is requested, and during the prosecution of any other prior proceedings involving the '674 Patent for which reexamination is requested.

Generally speaking, Buhannic teaches using a message broker server to track the status of a securities trade by monitoring messages related to that trade that the message broker server passes between the computers conducting the trade. (*See*, Buhannic, Abstract, [0002], [0010]).

1. Buhannic's Application to Claim 1.

Buhannic discloses the use of a Java Message Service compliant message broker server (an **asynchronous messaging environment**) to pass messages between servers involved in a securities trade. The messages passed between the servers through the message broker server are **original messages**. Buhannic further teaches monitoring the messages passed by the various servers involved in a particular trade at the message broker server in order to track the status of that trade. More specifically, Buhannic discloses that the content

[9] According to the prosecution history for Buhannic, the applicant received an office action on September 11, 2002, rejecting the claims. Applicant then abandoned the application.

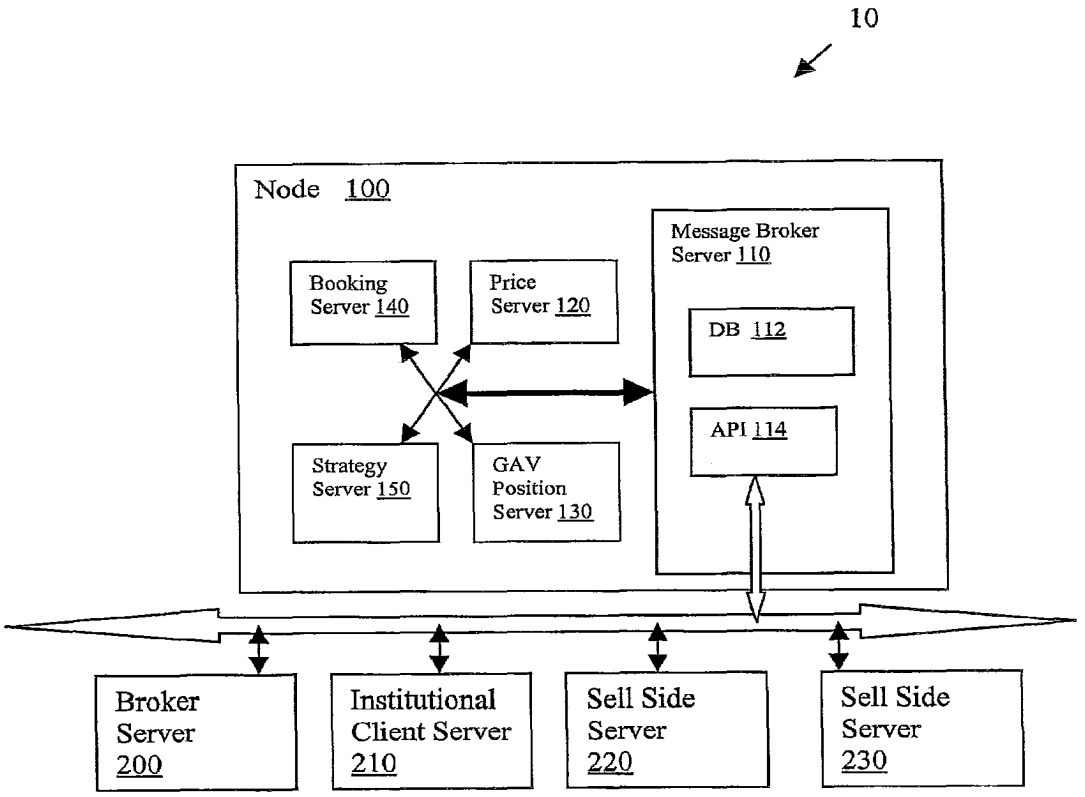
(**original message data**) of a message (**original message**) sent from a server can include status information for transactions (**status information of an activity or a process**) implemented using that server. When the message broker server receives a message from a server related to a particular trade, the message broker server determines the status of that trade based on the content of the message received and sends the status of the trade by a separate communication (a **monitoring message**) to a centralized database (**central message repository**). A record (**transaction record**) in the centralized database associated with that trade is then updated with that status. The **status information** can subsequently be **retrieved** from the centralized database (**central message repository**).

a. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising

Buhannic teaches the use of a message broker server to pass messages between servers involved in the trade of a security and to track the status of the trade by monitoring these messages. The message broker server of Buhannic is Java Message Service (JMS) compliant. JMS is an asynchronous messaging system developed by Sun (similar to IBM's MQSeries). Thus, the securities trading and status tracking of Buhannic occur in an **asynchronous messaging environment.**

Buhannic may be better explained with reference to FIGURE 1, reproduced below:

FIG. 1



Buhannic, FIGURE 1.

A securities trade is comprised of a set of events. *See*, Buhannic, paragraph [0009]. Servers such as broker server 200, sell side server 220, institutional client server 210, etc., communicate via messages (**original messages**) to accomplish the set of events comprising the securities trade. Buhannic teaches that message broker server 110 interfaces with these servers to provide the messaging service (*e.g.*, JMS) by which the servers pass these messages. *See*, Buhannic, paragraph [0014]. A message passed by a server can include data (**original message data**) reflecting the status of a process being implemented by that server. *See*, Buhannic, paragraph [0016].

b. providing, through a monitoring message, at least part of said original message data to a central message repository;

As discussed above, all messages (**original messages**) passed between severs involved in a securities trade pass through the message broker server 110. *See*, Buhannic, paragraph [0017]. When a server involved in that trade passes a message, the server can include, in the message, data (**original message data**) reflecting the status of a process being implemented by that server.

The message broker server 110 tracks the status of a securities trade throughout all phases of the trade process using the messages passed by the servers involved in the trade. *See*, Buhannic, paragraphs [0015], [0022]. More specifically, when the message broker server 110 receives each message (**an original message**) associated with a particular trade, it determines the status of the trade based on the content of the message and sends by a separate communication (**monitoring message**) the status of the trade reflected in the message received from the server (**original message data**) to a centralized database 112 (**central message repository**) so the status of the trade can be updated. *See*, Buhannic, paragraph [0020].

c. populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and

The status of the trade (**original message data**) is stored in the centralized database 112, in a record (**transaction record**) associated with that trade. The record may be associated with an identifier such as a "Transaction No." *See*, Buhannic, paragraphs [0017]-[0019]. Upon receipt of each subsequent message relating to that trade, the record (transaction record) in the centralized database 112 associated with that trade is updated with the current status using the

content of the message. *See*, Buhannic, paragraphs [0015], [0020], [0022].

The status of the trade (**original message data**) sent to the centralized database 112 can include status information for a transaction (**status information of an activity or a process**) associated with a trade being carried out by an entity associated with the server which sent the message (**original message**) received by the message broker server 110. *See*, Buhannic, paragraph [0020]. Examples of such **status information**, indicating the status of the trade transaction, include "Registered", "Credit Approved", "Executed", etc. *See*, Buhannic, paragraphs [0017]-[0019] and [0021].

d. retrieving information from the central message repository.

As described at paragraph [0022] of Buhannic, the status of a trade can be tracked throughout all phases of the trade process. As disclosed by Buhannic, this is done by **retrieving** the information, including **status information**, stored in the centralized database (**a central message repository**). *See,* paragraphs [0017]-[0020].

2. Claims Chart Mapping of Buhannic to the Claim Limitations of Claims 1, 46, 51, 70, 135, 140 and 154 of the '674 Patent.

As demonstrated above, Buhannic raises substantial new questions of patentability with respect to the claims of the '674 Patent. A full claims chart mapping Buhannic to the claim limitations of the applicable claims of the '674 Patent is found in **Appendix "D."** For the convenience of the Examiner, the portion of the claims chart for representative claim 1 is reproduced below.

Claim Language of '674 Patent	Portion of U.S. Patent Application Publication No. 2002/0038276 That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** At paragraph [0014] Buhannic describes a trade state processing system having a node including a message broker server coupled to the servers in the trade processing system. Paragraph [0014] specifies that the message broker server may be Java Message Service (JMS) compliant. The Java Message Service was a well-known asynchronous messaging service. **Original Message** Paragraph [0017] of Buhannic describes how the message broker server tracks messages between the servers to coordinate the trading of securities. The messages between the servers are original messages. **Original Message Data** Paragraph [0016] of Buhannic describes how each server can include status information for transaction in messages passed by that server. This status information is original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** At paragraph [0020], Buhannic discloses that, when a message related to a trade is received by the message broker server, the contents of the message are used to determine the status of a trade. The status of the trade is then updated in the centralized database. In order to update the centralized database, a message must be sent from the message broker server to the central database. The message from the message broker server to the central database is a monitoring message. **Central Message Repository** Paragraph [0022] of Buhannic describes the use of a centralized database to track the trade status through all phases of a trade process and among the disparate systems.

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** Paragraph [0017] describes creating a record in the central database associated with a trade. The record may be associated with, for example, a transaction number. Buhannic at paragraphs [0017]-[0019]. The record is updated with the trade state as described at paragraph [0020]. The update to the record may occur, for example, by inserting the proper state between the applicable tags of the record. This record is a transaction record. When a trade request message is received, a state model, i.e. a dynamic record of the request, is created in centralized database 112 and a proper state is assigned to the record. Buhannic at paragraph [0017]. The trade state may be correlated to a transaction number or other indicator in the record. Buhannic at paragraphs [0017]-[0019]. The record can be constantly updated with the status of each trade between the various parties at any time. Buhannic at paragraph [0020]. Upon receipt of each subsequent message relating to a trade the message broker updates the trade state by inserting the proper state between the "state" tags in the XML child element. Buhannic at paragraph [0020] As discussed above, the status used to update the record in the centralized database 112 can be included in an original message sent from a server. Thus, Buhannic discloses the step of populating a record (a transaction record) in a centralized database (a central message repository) with data (original message data) from a message received by the message broker server relating to a given trade. **Status Information of an Activity, Sub Process or Process** Paragraph [0016] of Buhannic describes how each server can include status information for a transaction in messages passed by that server. The data (original message data) in each of the messages passed by these servers is used to determine a new status of the trade as discussed at paragraph [0020]. Thus, as described at paragraph [0022] the status of a trade can be tracked throughout all phases of the trade process and amongst the disparate system. Examples of such status information are given in paragraphs [0017]-[0019] and [0021] and include statuses

	such as "Registered", "Credit Approved", "Executed", etc.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** As described at paragraph [0022] of Buhannic, the status of a trade can be tracked throughout all phases of the trade process. This is done by retrieving the information, including status information, stored in the centralized database (a central message repository). *See,* paragraphs [0017]-[0020]. Moreover, it is inherent that data stored in a database is stored for subsequent retrieval.

VII. CONCLUSION

For the reasons outlined above, the prior art documents identified herein anticipate and/or render obvious the claims in the '674 Patent. Consequently, it is respectfully requested that reexamination be granted as to all claims in the '674 Patent based upon substantial new questions of patentability. It is further respectfully requested that each of claims 1 through 173 be rejected over the prior art for the reasons described above.

Dated: November 7, 2011

Respectfully submitted,

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APPENDIX "A-1"

CLAIMS CHART MAPPING

PRODUCTION WORKFLOW

TO THE CLAIM LIMITATIONS OF CLAIMS 1-18, 20, 38-49, 51-107, 109, 127-138 and 140-173 OF THE '674 PATENT

Claim Language of '674 Patent	Portion of Production Workflow That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** At Sec. 10.2, pgs. 364-367 and FIGURE 10.10, Production Workflow discloses a workflow management system having a server with multiple server components which interface with various clients for implementing activities that make up certain processes. The workflow system is implemented using messaging as the underlying communication mechanism both between the servers of the workflow management system and between such servers and the clients of the workflow management system. *See also*, Sec. 1.11, pg. 16. As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used to asynchronously invoke activity implementations on the clients of the workflow management system. At Sec. 9.4.2, pgs. 319-335, Production Workflow describes asynchronous messaging systems and points out (at pg. 320) that one example of such a messaging system is MQSeries. Communication between the various pieces of an application can happen in two inherently different manners: synchronously and asynchronously. Production Workflow at Sec. 9.4, pg. 317. *See also*, FIGURES 9.9, Sec. 9.13. "[T]he appropriate component is invoked by sending a message to the component. The target component...sends back a message that contains the output container and other appropriate information, such as a return code. It should be noted that this...works asynchronously." Production Workflow at Sec. 3.4.4, pg. 92. The concept of message queuing as the underlying communication mechanism is not only used between clients and the server but also between the servers. When a component needs services from another component, it sends a message using the queue name of the appropriate component. Production Workflow at Sec. 10.2, pg. 364; *see also*, Secs. 9.4.2-9.6.3, pgs. 319-335; FIGURES 10.9, 10.10. **Original Message** As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used by a workflow management server to asynchronously invoke activity implementations on clients by sending a message containing

	input data. When the activity implementation is complete, a message containing an output container is communicated to the workflow management server by the activity implementation. Each of these messages is an original message. **Original Message Data** As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used by a workflow management server to asynchronously invoke activity implementations on clients by sending a message containing input data. When the activity implementation is complete, a message containing an output container is communicated to the workflow management server by the activity implementation. Thus, the output container included in a message communicated to the workflow management server is original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** As described at Sec. 10.2, pg. 366 of Production Workflow, access to the database of the workflow management system is accomplished through the DBMS server using a DBMS client. Messaging is the underlying communication mechanism used between clients and servers and between servers and servers, as discussed at Sec. 10.2, pg. 364. The use of messaging to communicate data to be stored in the database is further explained at Sec. 9.3.1, pg. 317, which notes that a database management client is responsible for handling messages related to stored procedure invocation and returning responses. Production Workflow further describes how the output container received in a message from the activity implementation is stored in this database. For example, at Sec. 2.7.1, pg. 45, Production Workflow describes how the workflow management system stores an entry in the audit trail for all relevant actions, such as the start and completion of an activity. The entry in the audit trail contains all of the important information about the event, such as the type of event, the activity associated with the event, the input passed to the activity, the output produced by the activity and the time the event occurred. As another example, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the

	database, along with the other context of each process instance. *See also,* pg. 57. Thus, the message sent from the workflow management system to the DBMS server with the output container (original message data) is a monitoring message. **Central Message Repository** At Sec. 10.2, pgs. 364-367 and FIGURE 10.10, Production Workflow discloses a workflow management system that has a server with multiple server components and clients for implementing activities. One of the server components is a DBMS server used to access a centralized database
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** Sec. 10.13, pgs. 412-419 gives an example of a simple schema for the central database, such that a record is stored for a process instance and a record is stored for each activity instance associated with that process instance, where the record for the process instance and the record for each of the activity instances are associated using a process identifier (PID). Production Workflow describes at Sec. 2.7.1, pg. 45 how entries contain information such as the input passed to the activity and the output produced by the activity. Additionally, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. Thus, it can be known which activities have been completed, which activities are active, etc. Accordingly, the input data passed to each activity in a message and the output container received from each activity in a message (original message data) is stored in association with the record for a given process. **Status Information of an Activity, Sub Process or Process** Production Workflow discusses various examples of statuses that may be contained in an output container received in a message from an activity implementation. For example, the output containers for an activity may contain such values as activityState, Return Code,

	Location, Flight Price Limit, Hotel Price Limit, Finished, Error Report Number, All Flights Confirmed, Fare, All Hotels Confirmed, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pgs. 105-106;, Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462. Data member activityState holds the state of the activity instance. Production Workflow at Sec. 10.15, pg. 421. Moreover, Sec. 3.5.3, pgs. 101-102 describe, and FIGURES 3.18 and 3.19 graphically depict that the status of an activity is in the input container passed to an activity or an output container received from an activity. Note that in FIGURE 3.18 this status, as viewed by a user, is "Running," while in FIGURE 3.19 the activity is "Collect Customer Information" and the status is listed as "Ready." *See also*, Claim 51, below, with respect to status information of a subprocess.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** Production Workflow discloses that information stored in the database (centralized message repository), including status information of an activity, sub process or process, can be retrieved in order to be analyzed, examined or used for other purposes (e.g., for process modeling, display, etc.). For example: At Sec. 2.7.1, pgs. 44-45, Production Workflow describes how the audit trail written by the workflow management system can be analyzed using data mining technology. At Sec. 2.9, pg. 55, Production Workflow describes how the results of analysis are presented in graphical form or in output files that can be process be data analysis tools. At Sec. 2.9, pg. 55, Production Workflow also describes various formats for the presentation of data for monitoring business processes. At Sec. 2.7.2, pgs. 45-46, Production Workflow describes how the audit trail, including information on each of the activities, is processed to derive a process model. At Sec. 2.11, pgs. 59-60, Production Workflow describes how the audit trail can be examined. At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to locate processes and query

	their current state and processing history, including the current state of each of the activities. At Sec 2.9.3, pg. 52, Production Workflow describes the derivation of probabilities through the processing of the audit trail written by the workflow management system. At Sec.10.2, pg. 366, Production Workflow describes how a workflow management system's database is accessed and how queries are made against objects in the database. At Sec. 2.11, pg. 59, Production Workflow describes how monitoring of a business process is performed by obtaining information from the audit trail that the workflow management system writes in the database and how the audit trail in the database can be examined using APIs, SQL calls or messaging.
Claim 2	
2. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about an order from the central message repository.	At Sec 1.1., pg. 1, Production Workflow discloses that business processes which may be handled by the workflow management systems described in Production Workflow may comprise shipping goods. At Sec. 1.2, pg. 4 and Sec 3.4.2, pg. 82, Production Workflow discloses that the status of orders may be provided to customers in conjunction with access to a company's web page and that to support such functionality information about that order is stored.
Claim 3	
3. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about a customer from the central message repository.	Production Workflow discusses various examples of statuses that may be contained in an output container received in a message from an activity implementation, including Customer Name, Customer Address, Salary, Credit Card Number, FIRST_NAME, LAST_NAME, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462.

Claim 4	
4. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving process efficiency information from the central message repository.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc.
Claim 5	
5. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving time slice information from the central message repository.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc.
Claim 6	
6. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository.	At Sec. 2.7.1, pg. 45, Production Workflow describes that the database is used to store an entry in the audit trail for all relevant actions such as the start and completion of an activity. The entry contains all important information about the event, such as the type of event, the activity associated with the event, the input passed to the activity, the output produced by the activity and the time the event occurred. At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc. At Sec. 2.9, pgs. 49-54, Production Workflow discusses tracking the number of processes that are created in a certain time frame. At Sec. 2.11, pg. 59, Production Workflow describes how the number of processes carried out per hour may be presented.

Claim 7	
7. A method as in claim 6 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc. It is inherent that such timing and activity duration information, such as "Amount of Time" in Table 2.5, may be a day, a week, or a month. At Sec. 3.5.1, pgs. 98-99, Production Workflow describes that processes can be started at various times during the month.
Claim 8	
8. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information to gauge trends from the central message repository.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.
Claim 9	
9. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information to gauge performance from the central message repository.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.

Claim 10	
10. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge trends.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.
Claim 11	
11. A method as in claim 10 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc. It is inherent that such timing and activity duration information, such as "Amount of Time" in Table 2.5 may be a day, a week, or a month. At Sec. 3.5.1, pgs. 98-99, Production Workflow describes that processes can be started at various times during the month.
Claim 12	
12. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge performance.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.

Claim 13	
13. A method as in claim **12** wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc. It is inherent that such timing and activity duration information, such as "Amount of Time" in Table 2.5 may be a day, a week, or a month. At Sec. 3.5.1, pgs. 98-99, Production Workflow describes that processes can be started at various times during the month.
Claim 14	
14. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about process efficiency.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.
Claim 15	
15. A method as in claim 1 wherein said original message data comprises a data field.	Production Workflow discusses various examples of data fields that may be contained in an output container received in a message from an activity implementation. For example, the output containers for an activity may contain such data fields as RELATED_ROLE, RELATED_ORGANIZATION, ROLE, Itinerary, Locations, etc., *See*, Production Workflow, Sec. 8.2, pgs. 298-300; Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462.
Claim 16	
16. A method as in claim 15 wherein said data field is path specific.	The data fields in the output container from an activity would be specific to the path of execution for the process instance associated with that activity. *See,* Claim 15, above; *see also*, Sec. 3.4.2, pg. 78-81.

Claim 17	
17. A method as in claim 1 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process, and wherein said action provides data which is used as a data field within said monitoring message.	As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used by a workflow management server to asynchronously invoke activity implementations on clients by sending a message containing input data. When the activity implementation is complete, a message containing an output container is communicated to the workflow management server by the activity implementation. Production Workflow further describes how the output container received in a message from the activity implementation is stored in this database. For example, at Sec. 2.7.1, pg. 45, Production Workflow describes how the workflow management system stores an entry in the audit trail for all relevant actions, such as the start and completion of an activity. The entry in the audit trail contains all of the important information about the event, such as the type of event, the activity associated with the event, the input passed to the activity, the output produced by the activity and the time the event occurred. As another example, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. *See also,* pg. 57.
Claim 18	
18. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information in order to measure, monitor and track enterprise communications and processes.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.

Claim 20	
20. A method as in claim 1 wherein retrieving said information from the central message repository provides an alternative to retrieving original message data from an application that had originally generated said original message data.	*See*, Claim 1, above. It is inherent that retrieving said information from the central message repository would provide an alternative to any other method of retrieving such data.
Claim 38	
38. A method as in claim 1 wherein said retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.	Production Workflow at Sec. 8.3, pgs. 300-301 discusses the implementation of security measures in conjunction with the workflow management system's database (a central message repository).
Claim 39	
39. A method as in claim 38 wherein said retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.	*See*, Claim 38, above. Additionally, Production Workflow at Sec. 8.3, pg2. 300-301 discussed the implementation of security based on staff assignments, roles and groups.
Claim 40	
40. A method as in claim 1 wherein said retrieving information from the central message repository further comprises permitting a user to retrieve information over a corporate extranet.	At Sec. 3.10, pg. 115, Production Workflow describes that a user may use a web browser to access the workflow management system. *See also,* Sec. 10.4.4, pg. 377 and FIGURE 1.13. A web browser may operate over any type of network, including an extranet.
Claim 41	
41. A method as in claim 1 further comprising providing a report.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process

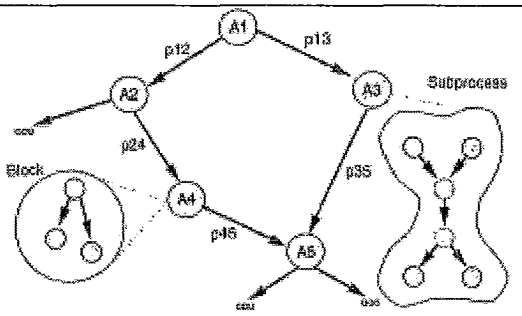
	efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc. At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved. At Sec. 2.9, pg. 55, Production Workflow describes how the results of analysis are presented in graphical form or in output files that can be process be data analysis tools.
Claim 42	
42. A method as in claim 41 further comprising providing said report through an XML link to said central message repository.	At Sec. 1.3, pg. 4, Production Workflow discusses user requests being in XML. At Sec. 10.5.5, pg. 381, Production Workflow discusses that data should be supplied in a format that can be easily processed, such as XML.
Claim 43	
43. A method as in claim 42 further comprising displaying said report.	At Sec. 2.9, pg. 55, Production Workflow describes how the results of analysis are presented in graphical form or in output files that can be process be data analysis tools. At Sec. 2.9, pg. 55, Production Workflow also describes various formats for the presentation of data for monitoring business processes.
Claim 44	
44. A method as in claim 40 wherein said user comprises a customer, and said permitting a user to retrieve information over a corporate extranet further comprises permitting said customer to retrieve information concerning said customer's orders.	At Sec. 1.2 pg. 4 and Sec 3.4.2 pg. 82, Production Workflow discloses that the status of orders may be provided to customers in conjunction with access to a company's web page and that to support such functionality information about that order is stored.

Claim 45	
45. A method as in claim 43 wherein said display provides an option to drill down through said display for further detail.	At Sec. 107, pg. 107, Production Workflow describes how the details of a process may be queried. At Sec. 3.7.2, pg. 108, Production Workflow describes how notifications may occur when a particular process is in error. At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. At Sec. 2.7.1 pgs. 44-45, Production Workflow describes how the audit trail written by the workflow management system can be analyzed using data mining technology. At Sec. 2.7.2 pgs. 45-46, Production Workflow describes how the audit trail, including information on each of the activities, is processed to derive a process model. At Sec. 2.11, pgs. 59-60, Production Workflow describes how the audit trail can be examined. At Sec. 3.7.1 pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. At Sec 2.9.3 pg. 52, Production Workflow describes the derivation of probabilities through the processing of the audit trail written by the workflow management system.
Claim 46	
46. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See*, Claim 1, above.

providing, through a monitoring message, at least part of said original message data to a central message repository;	
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	
distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	**Distributing Information using a Real-Time Tool** At Sec. 107, pg. 107, Production Workflow describes how the details of a process may be queried. At Sec. 3.7.2, pg. 108, Production Workflow describes how notifications may occur when a particular process is in error. At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. At Sec. 2.11, pgs. 59-60, Production Workflow describes how the audit trail can be examined. At Sec. 3.7.1 pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. At Sec 2.9.3 pg. 52, Production Workflow describes the derivation of probabilities through the processing of the audit trail written by the workflow management system.

Claim 47	
47. A method as in claim 46 wherein said information is distributed using a distribution method selected from the group consisting of an intranet, an extranet, and the Internet.	At Sec. 3.10, pg. 115, Production Workflow describes that a user may use a web browser to access the workflow management system. *See also,* Sec. 10.4.4, pg. 377 and FIGURE 1.13. A web browser may operate over any type of network, including an extranet.
Claim 48	
48. A method as in claim 46 wherein said information is distributed to business partners.	At Sec. 3.2, pgs. 63-64, Production Workflow describes that an external user may be a customer. A customer is a business partner.
Claim 49	
49. A method as in claim 48 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.	At Sec. 3.2, pgs. 63-64, Production Workflow describes that an external user may be a customer. A customer is an actual or potential business partner. At Sec. 1.2 pg. 4 and Sec 3.4.2 pg. 82, Production Workflow discloses that the status of orders may be provided to customers in conjunction with access to a company's web page and that to support such functionality information about that order is stored. Such information would be of interest to the customer.
Claim 51	
51. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See*, Claim 1, above.
providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 1, above.

populating a transaction record in said central message repository with said original message data provided by said monitoring message;	*See*, Claim 1, above.
reviewing data collected in said transaction record;	*See*, Claim 1, above.
wherein said original message data comprises status information of a process and/or sub process.	**Process and/or Sub Process** Production Workflow discusses various examples of statuses that may be contained in an output container received in a message from an activity implementation. For example, the output containers for an activity may contain such values as activityState, Return Code (RC), Location, Flight Price Limit, Hotel Price Limit, Finished, Error Report Number, All Flights Confirmed, Fare, All Hotels Confirmed, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pgs. 105-106;, Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462. Data member activityState holds the state of the activity instance. Production Workflow at Sec. 10.15, pg. 421. Moreover, Sec. 3.5.3, pgs. 101-102 describe, and FIGURES 3.18 and 3.19 graphically depict that the status of an activity is in the input container passed to an activity or an output container received from an activity. Note that in FIGURE 3.18 this status, as viewed by a user, is "Running," while in FIGURE 3.19 the activity is "Collect Customer Information" and the status is listed as "Ready." As described in Production Workflow, a process comprises a set of activities. Production Workflow further describes at Sec. 2.1, pg. 32, Sec. 3.4.2, pgs. 85-86 and Sec. 4.3.1, pg. 129 that an activity of a process can itself be implemented as a process. A process implementing an activity of another process is referred to as a subprocess or child process while the process containing the activity implemented by the subprocess is referred to as the parent process. This is illustrated in FIGURE 3.4 on pg. 79, which shows a parent process comprising activities "A1" through "A5". Activity "A3" of the parent process is implemented as a subprocess:



At Sec. 3.4.3, pg. 87 and Sec. 10.7.2, pg. 392, Production Workflow describes how a subprocess is spawned from a process. As with any other activity of the parent process, an input container is sent to the subprocess via a message and a message with an output container is received from the subprocess after it is complete. This output container is then stored in the database in association with the entry for that activity (i.e. the activity which was implemented by the subprocess) in the parent process.

Thus, for each activity implemented as a subprocess, the workflow management system would store the same data that would be stored for any other activity (e.g. the output container, the return code, etc.). The stored data would include the status of that activity which, in the case of an activity being implemented by a subprocess, would be the status of the subprocess.

Furthermore, as described at Sec. 3.4.3, pgs. 87-89 of Production Workflow, a subprocess can be a local (as opposed to a remote) subprocess, meaning that it is carried out by the same workflow management system that is carrying out the parent process. Thus, when a subprocess is local, the workflow management system writes all of the audit trail information for that subprocess (including the activities making up the subprocess) to its database in addition to the audit trail information for the parent process.

All audit trail information for the parent process is also written to the database of the workflow management system. As noted at Sec. 3.6, pg. 106, when events that occur in a subprocess are written in the audit trail the appropriate parent process identifier is also written so the correlation can be made between events that occurred during execution of the subprocess and events that occurred with respect to the parent process.

	At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. As an activity can be implemented as a subprocess (which is itself its own process), Production Workflow describes that the original message data can be the status information of a process or sub process.
Claim 52	
52. A method as in claim 51 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	Production Workflow discusses various examples of data that may be contained in an output container received in a message from an activity implementation. For example, the output containers for an activity may contain such values as Process Identifier (PID), Activity Identifier (AID), Arrival date, Valid From date, customer, departure date, departure time, arrival date, arrival time, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pgs. 105-106; Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462.
Claim 53	
53. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	Production Workflow discusses various examples of data that may be contained in an output container received in a message from an activity implementation. For example, the output containers for an activity may contain such values as Process Identifier (PID), Activity Identifier (AID), Arrival date, Valid From date, customer, departure date, departure time, arrival date, arrival time, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pgs. 105-106; Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462.
Claim 54	
54. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	Production Workflow discusses various examples of data that may be contained in an output container received in a message from an activity implementation. For example, the output containers for an activity may contain such values as Process Identifier (PID), Activity Identifier (AID), Arrival date, Valid From date, customer, departure date, departure time, arrival date, arrival time, etc. *See*, Production Workflow, Sec. 2.7.1, pg. 45; Sec. 3.6, pgs. 105-106; Sec. 10.13, pgs. 412-427; and Appendix A, pgs. 449-462.

Claim 55	
55. A method as in claim 51 further comprising providing the status of a process by providing access to said central message repository.	At Sec. 3.10, pg. 115, Production Workflow describes that a user may use a web browser to access the workflow management system. *See also,* Sec. 10.4.4, pg. 377 and FIGURE 1.13.
Claim 56	
56. A method as in claim 51 further comprising adding, to said monitoring message, data other than said original message data.	At Sec. 9.6.3, pg. 335, Production Workflow describes how messages may be annotated by combining the message with operational data from a database or with data from other messages. Production Workflow also describes at Sec. 5.4, pgs. 196-198 that the output container received from an activity may be processed by a dematerialization chain before it is stored in the database. The dematerialization chain may comprise a set of programs that can process the output container received from an activity before it is stored in the database. A program in the dematerialization chain may, for example, modify the data of the output container, add data to the output container or substitute other information in the output container before it is stored. The output container with the enriched, additional or substitute data is then stored in the database.
Claim 57	
57. A method as in claim 51 further comprising updating said transaction record.	At Sec. 2.7.1, pg. 45, Production Workflow describes how the workflow management system stores an entry in the audit trail for all relevant actions such as the start and completion of an activity. The entry contains all important information about the event, such as the type of event, the activity associated with the event, the input passed to the activity, the output produced by the activity and the time the event occurred. As another example, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. Furthermore, at Sec. 10.13, pg. 415, Production Workflow describes how an entry is created in the process instance table and how multiple activity entries are created and associated with the entry in the process instance table. Thus, an update to a transaction record occurs whenever a relevant action occurs, for example, when a message is

	received from an activity with an output container, when an activity starts or ends, etc.
Claim 58	
58. A method as in claim 57 further comprising updating said transaction record by:	
providing, through a second monitoring message, a second original message data to said transaction record; and,	Production Workflow at Sec. 2.2, pgs. 33-35 and Appendix A, pgs. 449-462 describes a process with multiple activities. Thus, during the execution of such a process, each of the activities would return a message with an output container. When each of these messages is received, the transaction record is populated with the output container contained in that message. *See also*, Claim 1, above.
populating said transaction record with said second original message data provided by said second monitoring message.	*See*, Claim 51, above.
Claim 59	
59. A method as in claim 51 further comprising completing a process.	At Sec. 10.13, pg. 414, Production Workflow discloses that an entry in the process instance table has a "State" field. At Sec. 3.5.1, pgs. 98-99, Production Workflow identifies examples of states for a process. These include "Finished," "Deleted," "Terminating" and "Terminated." *See also*, FIGURE 3.16 at pg. 98.
Claim 60	
60. A method as in claim 51 further comprising completing said transaction record.	At Sec. 3.5.1, pgs. 98-99, Production Workflow identifies examples of states for a process. These include "Finished," "Deleted," "Terminating" and "Terminated." When a process is in the "Finished" state, for example, no more activities are carried out for that process. Thus, the transaction record associated with that process is completed. *See also*, FIGURE 3.16 at pg. 98.
Claim 61	
61. A method as in claim 51 further comprising aborting a process.	At Sec. 3.5.1, pgs. 98-99, Production Workflow identifies examples of states for a process. These include "Suspended," "Deleted," "Terminating" and "Terminated." . *See also*, FIGURE 3.16 at pg. 98.

Claim 62	
62. A method as in claim 61 further comprising providing, in said transaction record, an indication that the process has been aborted.	At Sec. 10.13, pg. 414, Production Workflow discloses that an entry in the process instance table has a "State" field. At Sec. 3.5.1, pg. 98, Production Workflow identifies examples of states for a process. These include "Finished," "Deleted," "Terminating" and "Terminated."
Claim 63	
63. A central message repository created by the method of claim 51.	At Sec. 10.2, pgs. 364-367, and FIGURE 10.10, Production Workflow discloses a workflow management system which has a server with multiple server components and clients for implementing activities. One of the servers is a DBMS server used to access a centralized database. At Sec. 2.7.1, pg. 45, Production Workflow describes that such a database is used to store an entry in the audit trail for all relevant actions such as the start and completion of an activity. The entry contains all important information about the event, such as the type of event, the activity associated with the event, the input passed to the activity, the output produced by the activity and the time the event occurred. *See also,* Claim 1, above.
Claim 64	
64. A transaction record created by the method of claim 51.	Sec. 10.13, pgs. 412-419 of Production Workflow gives an example of a simple schema for a database, such that a record is stored for a process instance and a record is stored for each activity instance associated with that process instance, where the record for the process instance and the record for each of the activity instances are associated using a process instance identifier (PID). Production Workflow describes at Sec. 2.7.1, pg. 45 how entries in the audit trail contain information such as the input passed to the activity and the output produced by the activity. Additionally, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. Thus, it can be known which activities have been completed, which activities are active, etc. Accordingly, the process record for a given process and the activity records for each of the activities of such process are associated with the input passed to each activity in a

	message and the output container received from each activity in a message.
Claim 65	
65. A method as in claim 51 wherein said process is a simulated process.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the simulation of a process, the execution of the activities of the process and the collection of state information, including, for example, the amount of time for the occurrence of each of the activities of the process.
Claim 66	
66. A method as in claim 51 wherein said sub process is a simulated sub process.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the simulation of a process, the execution of the activities of the process and the collection of state information, including, for example, the amount of time for the occurrence of each of the activities of the process.
Claim 67	
67. A method as in claim 51 wherein said original message data is simulated original message data.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the simulation of a process, the execution of the activities of the process and the collection of state information. As the process is being simulated, at least some of this state information would necessarily come from simulated message data.
Claim 68	
68. A method as in claim 51 further comprising providing the status of a sub process by providing access to said central message repository.	*See*, Claim 51, above. An activity can be implemented as a subprocess and Production Workflow describes that the original message data can be the status of such a subprocess. At Sec. 2.7.1 pgs. 44-45, Production Workflow describes how the audit trail written by the workflow management system can be analyzed using data mining technology. At Sec. 2.7.2 pgs. 45-46, Production Workflow describes how the audit trail, including information on each of the activities, is processed to derive a process model. At Sec. 2.11, pgs. 59-60, Production Workflow describes how the audit trail can be examined. At Sec. 3.7.1 pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. At Sec 2.9.3 pg. 52, Production Workflow describes the

	derivation of probabilities through the processing of the audit trail written by the workflow management system.
Claim 69	
69. A method as in claim 51 further comprising providing the status of an activity by providing access to said central message repository.	At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to allow users to locate processes and query their current state and processing history, including the current state of each of the activities of the process. This current state and processing history is stored in the database of the workflow management system.
Claim 70	
70. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See*, Claim 1, above.
monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	Production Workflow at Sec. 2.2, pgs. 33-35 and Appendix A, pgs. 449-462 describes a process with multiple activities. *See also*, Claim 1, above.
transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See*, Claim 1, above.
storing said original message data from said first activity, in a transaction record in said central message repository;	*See*, Claim 1, above.
transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See*, above description with respect to first activity.

storing said original message data from said second activity, in said transaction record in said central message repository;	*See*, above description with respect to first activity.
wherein said original message data comprises the status of said activity.	*See*, Claim 1, above.
Claim 71	
71. A method as in claim 70 further comprising determining the status of said sub process.	See, Claim 51, above. An activity can be implemented as a subprocess and Production Workflow describes that the original message data can be the status of such a sub process. At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to locate processes and determine their current state and processing history.
Claim 72	
72. A method as in claim 70 wherein said original message data from each of said first and second activities comprises an activity specific set of data.	As described at Sec. 3.4.4, pg. 92 and Sec. 10.5.1, pgs. 378-379 of Production Workflow, messaging is used by a workflow management server to asynchronously invoke activity implementations on clients by sending a message containing input data for that activity. Output containers are communicated to the workflow management server by the activity implementation using a message when the activity implementation is complete. This output container contains data generated by the activity and specific to that activity.
Claim 73	
73. A method as in claim 70 wherein said first monitoring message further comprises altered original message data.	At Sec. 9.6.3, pg. 335, Production Workflow describes how messages may be annotated by combining the message with operational data from a database or with data from other messages. Production Workflow also describes at Sec. 5.4, pgs. 196-198 that the output container received from an activity may be processed by a dematerialization chain before it is stored in the database. A program in the dematerialization chain may, for example, modify the data of the output container, add data to the output container or substitute other information in the output container before it is stored. The output container with the enriched, additional or substitute data is then stored in the database.
Claim 74	

74. A method as in claim 70 wherein said first monitoring message further comprises data added to said original message data.	At Sec. 9.6.3, pg. 335, Production Workflow describes how messages may be annotated by combining the message with operational data from a database or with data from other messages. Production Workflow also describes at Sec. 5.4, pgs. 196-198 that the output container received from an activity may be processed by a dematerialization chain before it is stored in the database. The dematerialization chain may comprise a set of programs that can process the output container received from an activity before it is stored in the database. A program in the dematerialization chain may, for example, modify the data of the output container, add data to the output container or substitute other information in the output container before it is stored. The output container with the enriched, additional or substitute data is then stored in the database.
Claim 75	
75. A method as in claim 70 further comprising reviewing said central message repository.	At Sec. 2.7.1, pgs. 44-45, Production Workflow describes how the audit trail written by the workflow management system can be analyzed using data mining technology. At Sec. 2.7.2, pgs. 45-46, Production Workflow describes how the audit trail, including information on each of the activities, is processed to derive a process model. At Sec. 2.11, pgs. 59-60, Production Workflow describes how the audit trail can be examined. At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. At Sec. 3.7.1, pg. 107, Production Workflow describes functions that are provided to locate processes and query their current state and processing history, including the current state of each of the activities. This current state and processing history is stored in the database of the workflow management system. At Sec 2.9.3, pg. 52, Production Workflow describes the derivation of probabilities through the processing of the audit trail written by the workflow management system.

Claim 76	
76. A method as in claim 75 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail for performance, timing, trend, snapshot, process efficiency and other information, including, for example, activity execution frequency, activity duration, etc.
Claim 77	
77. A method as in claim 70 further comprising distributing process progress information in real time.	At Sec. 107, pg. 107, Production Workflow describes how the details of a process may be queried. At Sec. 3.7.2, pg. 108, Production Workflow describes how notifications may occur when a particular process is in error. At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity.
Claim 78	
78. A method as in claim 70 further comprising distributing said process progress information through broadcasting.	At Sec. 3.7.2, pg. 108, Production Workflow describes how notifications may occur when a particular process is in error. At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers.

Claim 79	
79. A method as in claim 70 further comprising distributing said process progress information through the Internet.	At Sec. 3.10, pg. 115, Production Workflow describes that a user may use a web browser to access the workflow management system. *See also*, Sec. 10.4.4, pg. 377 and FIGURE 1.13.
Claim 80	
80. A method as in claim 70 further comprising analyzing said central message repository in order to determine a process trend.	At Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc.
Claim 81	
81. A method as in claim 80 wherein said process trend is selected from the group consisting of: time between subprocesses: variances by customer, variances by order amount, bottlenecks and seasonal variations.	*See*, Claim 80, above. As an activity may be implemented as a subprocess, the information outlined in response to Claim 35 above may be time between subprocesses. Additionally, this timing information may indicate bottlenecks. Additionally, Production Workflow discusses at Sec. 3.7.2, pg. 108 how the process monitor presents the current or accumulated states of processes graphically. The monitor may help identify places where work piles up (*i.e.*, a bottleneck).
Claim 82	
82. A method as in claim 81 wherein orders may be accelerated as a result of said analysis.	At Sec. 2.6, pg. 42, Production Workflow describes that tools provided by the workflow management system may allow for the analysis of a process such that improvements in measures of performance such as speed, cost, quality and service may be achieved.
Claim 83	
83. A method as in claim 70 further comprising providing a monitoring message repository.	*See*, description of central message repository in Claim 1, above. Additionally, with respect to messaging systems, at Sec. 9.6.3, pg. 334, it is described how a messaging system may permanently store messages passed by the messaging system in a message database.

Claim 84	
84. A method as in claim 70 further comprising providing a report via an XML link to said central message repository.	At Sec. 2.9, pg. 55, Production Workflow describes how the results of analysis are presented in graphical form or in output files that can be process be data analysis tools. At Sec. 2.9, pg. 55, Production Workflow describes various formats for the presentation of data for monitoring business processes. At Sec. 1.3, pg. 4, Production Workflow discusses user requests being in XML. At Sec. 10.5.5, pg. 381, Production Workflow discusses that data should be supplied in a format that can be easily processed, such as XML.
Claim 85	
85. A method as in claim 70 wherein said second monitoring message further comprises altered original message data.	*See*, Claim 73, above.
Claim 86	
86. A method as in claim 70 wherein said second monitoring message further comprises data added to said original message data.	*See,* Claim 74, above
Claim 87	
87. A method as in claim 70 further comprising distributing said process progress information through Wireless Application Protocol.	See FIGURE 1.13, "Mobile Computing". Mobile computing devices such as smartphones, cellular phones, PDAs, etc., may utilize wireless application protocol (WAP).
Claim 88	
88. A method as in claim 70 further comprising distributing said process progress information through an intranet.	At Sec. 3.10, pg. 115, Production Workflow describes that a user may use a web browser to access the workflow management system. *See also,* Sec. 10.4.4, pg. 377 and FIGURE 1.13. A web browser may operate over any type of network including an intranet.

Claim 89	
89. A method as in claim 70 further comprising distributing said process progress information through an extranet.	At Sec. 3.10, pg. 115, Production Workflow describes that a user may use a web browser to access the workflow management system. *See also,* Sec. 10.4.4, pg. 377 and FIGURE 1.13. A web browser may operate over any type of network including an extranet.
Claim 90	
90. An apparatus for use in an asynchronous messaging environment in a communications system or systems wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 1, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 1, above.
means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See*, Claim 1, above.
means for retrieving information from the central message repository.	*See*, Claim 1, above.

Claim 91	
91. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about an order from the central message repository.	*See*, Claim 2, above.
Claim 92	
92. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about a customer from the central message repository.	*See*, Claim 3, above.
Claim 93	
93. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving process efficiency information from the central message repository.	*See*, Claim 4, above.
Claim 94	
94. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving time slice information from the central message repository.	*See*, Claim 5, above.

Claim 95	
95. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository.	*See*, Claim 6, above.
Claim 96	
96. An apparatus as in claim 95 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See*, Claim 7, above.
Claim 97	
97. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge trends from the central message repository.	*See*, Claim 8, above.
Claim 98	
98. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge performance from the central message repository.	*See*, Claim 9, above.

Claim 99	
99. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge trends.	*See*, Claim 10, above.
Claim 100	
100. An apparatus as in claim 99 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See*, Claim 11, above.
Claim 101	
101. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge performance.	*See*, Claim 12, above.
Claim 102	
102. An apparatus as in claim 101 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See*, Claim 13, above.

Claim 103	
103. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about process efficiency.	*See*, Claim 14, above.
Claim 104	
104. An apparatus as in claim 90 wherein said original message data comprises a data field.	*See*, Claim 15, above.
Claim 105	
105. An apparatus as in claim 104 wherein said data field is path specific.	*See*, Claim 16, above.
Claim 106	
106. An apparatus as in claim 90 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process an sub process, or process, and wherein said action provides data which is used as a data field within said monitoring message.	*See*, Claim 17, above.
Claim 107	
107. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information in order to measure, monitor and/or track enterprise communications and processes.	*See*, Claim 18, above.

Claim 109	
109. An apparatus as in claim 90 wherein said means for retrieving said information from the central message repository provides an alternative to means for retrieving original message data from an application that had originally generated said original message data.	*See*, Claim 20, above.
Claim 127	
127. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.	*See*, Claim 38, above.
Claim 128	
128. An apparatus as in claim 127 wherein said means for retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.	*See*, Claim 39, above.
Claim 129	
129. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises means for permitting a user to retrieve information over a corporate extranet.	*See*, Claim 40, above.

Claim 130	
130. An apparatus as in claim 90 further comprising means for providing a report.	*See*, Claim 41, above.
Claim 131	
131. An apparatus as in claim 130 further comprising means for providing said report through an XML link to said central message repository.	*See*, Claim 42, above.
Claim 132	
132. An apparatus as in claim 130 further comprising means for displaying said report.	*See*, Claim 43, above.
Claim 133	
133. An apparatus as in claim 129 wherein said user comprises a customer, and said means for permitting a user to retrieve information over a corporate extranet further comprises means for permitting said customer to retrieve information concerning said customer's orders.	*See*, Claim 44, above.
Claim 134	
134. An apparatus as in claim 132 wherein said means for displaying said report provides an option to drill down through a display generated by said means for displaying said report for further detail.	*See*, Claim 45, above.

Claim 135	
135. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 46, above.
means for providing, though a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 46, above.
means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See*, Claim 46, above.
means for distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	*See*, Claim 46, above.

Claim 136	
136. An apparatus as in claim 135 wherein said means for distributing information comprises a means for distributing information selected from the group consisting of an intranet, an extranet, and the Internet.	*See*, Claim 47, above.
Claim 137	
137. An apparatus as in claim 136 wherein said information is distributed to business partners.	*See*, Claim 48, above.
Claim 138	
138. An apparatus as in claim 137 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.	*See*, Claim 49, above.
Claim 140	
140. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 51, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 51, above.

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,	*See*, Claim 51, above.
means for updating said transaction record;	*See*, Claim 57, above.
wherein said original message data comprises stares information of a process and/or sub process.	*See*, Claim 51, above.
Claim 141	
141. An apparatus as in claim 140 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	*See*, Claim 52, above.
Claim 142	
142. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	*See*, Claim 53, above.

Claim 143	
143. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	*See*, Claim 54, above.
Claim 144	
144. An apparatus as in claim 140 further comprising updating said transaction record by:	*See*, Claim 58, above.
means for providing, through a second monitoring message, a second original message data to said transaction record; and,	*See*, Claim 58, above.
means for populating said transaction record with said second original message data provided by said second monitoring message.	*See*, Claim 58, above.
Claim 145	
145. An apparatus as in claim 140 further comprising completing a process.	*See*, Claim 59, above.
Claim 146	
146. An apparatus as in claim 140 further comprising completing said transaction record.	*See*, Claim 60, above.
Claim 147	
147. An apparatus as in claim 140 further comprising aborting a process.	*See*, Claim 61, above.

Claim 148	
148. An apparatus as in claim 140 further comprising providing, in said transaction record, an indication that the record has been abandoned.	*See*, Claim 62, above.
Claim 149	
149. A central message repository created by the method of claim 140.	*See*, Claim 63, above.
Claim 150	
150. A transaction record created by the method of claim 140.	*See*, Claim 64, above.
Claim 151	
151. An apparatus as in claim 140 wherein said process is a simulated process.	*See*, Claim 65, above.
Claim 152	
152. An apparatus as in claim 140 wherein said sub process is a simulated sub process.	*See*, Claim 66, above.
Claim 153	
153. An apparatus as in claim 140 wherein said original message data is simulated original message data.	*See*, Claim 67, above.

Claim 154	
154. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 70, above.
means for monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	*See*, Claim 70, above.
means for transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See*, Claim 70, above.
means for storing said original message data from said first activity, in a transaction record in said central message repository;	*See*, Claim 70, above.
means for transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See*, Claim 70, above.
means for storing said original message data from said second activity, in said transaction record in said central message repository;	*See*, Claim 70, above.

wherein said original message data comprises the status of said activity.	*See*, Claim 70, above.
Claim 155	
155. An apparatus as in claim 154 further comprising determining the status of said sub process.	*See*, Claim 71, above.
Claim 156	
156. An apparatus as in claim 154 wherein said original message data from each of said first and second activities comprises an activity specific set of data.	*See*, Claim 72, above.
Claim 157	
157. An apparatus as in claim 155 wherein said first monitoring message further comprises altered original message data.	*See*, Claim 73, above.
Claim 158	
158. An apparatus as in claim 155 wherein said first monitoring message further comprises data added to said original message data.	*See*, Claim 74, above.
Claim 159	
159. An apparatus as in claim 155 further comprising means for reviewing said central message repository.	*See*, Claim 75, above.

Claim 160	
160. An apparatus as in claim 159 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.	*See*, Claim 76, above.
Claim 161	
161. An apparatus as in claim 155 further comprising distributing process progress information in real time.	*See*, Claim 77, above.
Claim 162	
162. An apparatus as in claim 161 further comprising distributing said process progress information through broadcasting.	*See*, Claim 78, above.
Claim 163	
163. An apparatus as in claim 161 further comprising distributing said process progress information through the Internet.	*See*, Claim 79, above.
Claim 164	
164. An apparatus as in claim 155 further comprising analyzing said central message repository in order to determine a process trend.	*See*, Claim 80, above.

Claim 165	
165. An apparatus as in claim 154 wherein said process trend is selected from the group consisting of: time between sub-processes, variances by customer, variances by order amount, bottlenecks and seasonal variations.	*See*, Claim 81, above.
Claim 166	
166. An apparatus as in claim 165 wherein orders may be accelerated as a result of said analysis.	*See*, Claim 82, above.
Claim 167	
167. An apparatus as in claim 155 further comprising providing a monitoring message repository.	*See*, Claim 83, above.
Claim 168	
168. An apparatus as in claim 155 further comprising providing a report via an XML link to said central message repository.	*See*, Claim 84, above.
Claim 169	
169. An apparatus as in claim 155 wherein said second monitoring message further comprises altered original message data.	*See*, Claim 85, above.
Claim 170	
170. An apparatus as in claim 155 wherein said second monitoring message further comprises data added to said original message data.	*See*, Claim 86, above.

Claim 171	
171. An apparatus as in claim 155 further comprising distributing said process progress information through Wireless Application Protocol.	*See*, Claim 87, above.
Claim 172	
172. An apparatus as in claim 155 further comprising distributing said process progress information through an intranet.	*See*, Claim 88, above.
Claim 173	
173. An apparatus as in claim 155 further comprising distributing said process progress information through an extranet.	*See*, Claim 89, above.

APPENDIX "A-2"

CLAIMS CHART MAPPING

PRODUCTION WORKFLOW

TO THE CLAIM LIMITATIONS OF CLAIMS 19, 21-37, 50, 108, 110-126 and 139 OF THE '674 PATENT

Claim Language of '674 Patent	Portion of Production Workflow or the Knowledge of One of Ordinary Skill in the Art That Meets the Limitation
Claim 19	
19. A method as in claim 1 wherein said retrieving information from the central message repository comprises broadcasting unused pipeline capacity.	*See,* discussion of Claim 1 in Appendix A-1. In addition, Production Workflow discusses the use of a workflow management system, including a workflow monitor, in a power plant or factory to provide information about the status of the power plant system, either on demand or automatically, and to issue alerts if out-of-line situations occur, allowing the process administrator to take corrective action. The alerts can be generated through the use of database triggers operating on the audit trail. Production Workflow further discloses that the workflow monitor can provide information on the number of processes being carried out per hour, color coding the results based on certain definitions. Production Workflow, Sec. 2.11, pgs. 58-59. It would have been obvious to one of ordinary skill in the art to use this described functionality to monitor the status of a pipeline's unused capacity and to broadcast such status to interested users.
Claim 21	
21. A method as in claim 1 further comprising relieving monitoring pressure from a source application.	*See,* discussion of Claim 1 in Appendix A-1. In addition, Production Workflow discusses the use of a workflow management system, including a workflow monitor, in a power plant or factory to provide information about the status of the power plant system, either on demand or automatically, and to issue alerts if out-of-line situations occur, allowing the process administrator to take corrective action. The alerts can be generated through the use of database triggers operating on the audit trail. Production Workflow further discloses that the workflow monitor can provide information on the number of processes being carried out per hour, color coding the results based on certain definitions. Production Workflow, Sec. 2.11, pgs. 58-59. It would have been obvious to one of ordinary skill in the art to use this described functionality to monitor and retrieve the pressure in a source application and to provide alerts regarding the monitored pressure, allowing a user to take corrective action to relieve such pressure.
Claim 22	
22. A method as in claim 1 further comprising providing a duplicate of said central message repository.	The use of mirror databases was well known by those of ordinary skill in the art well before the Dec. 15, 2000, priority date of the '674 Patent. Such mirror databases were duplicates of an original database in a system and were used to provide data redundancy, increase fault

	tolerance, increase the speed of systems with which they were utilized and for other goals. Thus, it would have been obvious to one of ordinary skill in the art to utilize a mirror database in conjunction with the workflow management systems disclosed in Production Workflow to accomplish one or more of these goals.
Claim 23	
23. A method as in claim 22 further comprising providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.	It was well known by one of ordinary skill in the art to locate mirror databases at locations that are different than the original database in order to, for example, increase fault tolerance or speed of access (*e.g.*, putting the mirror database at an entity which needs the information contained in the database (*e.g.*, a business partner)). In order to update a mirror database, it was also well known to provide a communication channel between the original database and the mirror database. Thus, it would have been obvious to one of ordinary skill in the art to utilize a mirror database at an external entity in conjunction with the workflow management systems disclosed in Production Workflow and to establish a communication channel between the mirror database and central message repository of the workflow management systems disclosed in Production Workflow to accomplish one or more of these goals.
Claim 24	
24. A method as in claim 1 further comprising providing a mirror repository of said central message repository.	*See*, Claim 22, above.
Claim 25	
25. A method as in claim 24 wherein said mirror repository is used by an external entity.	*See*, Claim 23, above.
Claim 26	
26. A method as in claim 25 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.	It is inherent that a mirror repository would comprise the same data as the central message repository, which it is mirroring. Sec. 10.13, pgs. 412-419 gives an example of a simple schema for the central database, such that a record is stored for a process instance and a record is stored for each activity instance associated with that process instance, where the record for the process instance and the record for each of the activity instances are associated

	using a process identifier (PID). Production Workflow describes at Sec. 2.7.1, pg. 45 how entries contain information such as the input passed to the activity and the output produced by the activity. Additionally, at Sec. 7.6, pgs. 274-277, Production Workflow describes how output containers received in messages from activity implementations are stored in the database, along with the other context of each process instance. Thus, it can be known which activities have been completed, which activities are active, etc.
Claim 27	
27. A method as in claim 24 wherein, if more than one mirror repository is used, said repositories are combined.	The combination of multiple mirror databases was well known by those of ordinary skill in the art well before the Dec. 15, 2000, priority date of the '674 Patent. Thus, it would have been obvious to one of ordinary skill in the art to utilize multiple combined mirror databases in conjunction with the workflow management systems disclosed in Production Workflow to accomplish one or more of these goals.
Claim 28	
28. A method as in claim 24 wherein said mirror repository is used either in addition to or instead of said central message repository.	*See*, Claim 22, above.
Claim 29	
29. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.	At Sec. 3.4.2, pg. 81, Production Workflow describes that, if an activity to be executed needs data from a previous activity's output container, the data is copied from the output container of the previous activity into an input container for the activity. As noted above, Production Workflow describes how the output container received in a message from the activity implementation is stored in the database. Production Workflow further describes at Sec. 10.5, pg. 378 how an input container is passed to an activity implementation using a message. Thus, the data in the output container, which is stored in the database (a central message repository), can be used to generate a message to an activity. *See*, Claim 22, above with respect to mirror repositories.

Claim 30	
30. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.	Production Workflow describes in multiple places how data in the workflow management system database (a central message repository) is used to generate feedback to users. For example, at Sec. 2.9, pgs. 49-54, Production Workflow describes the review of the audit trail in the workflow management system database for performance, timing, trend, snapshot, process efficiency and other information, including, for example, the number of process instances, the amount of time the activities of the process take, the processing time of different paths of the process, etc. At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. These messages may be sent to a user. Production Workflow also discusses at Sec. 3.7.3, pg. 109 that, when an error is detected, an appropriate alert is sent to the responsible process administrator. *See*, Claim 22, above with respect to mirror repositories.
Claim 31	
31. A method as in claim 30 wherein said messages comprise error messages.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. These messages may indicate for example, that an error has occurred. Production Workflow also discusses at Sec. 3.7.3, pg. 109 that, when an error is detected, an appropriate alert is sent to the responsible process administrator. *See*, Claim 22, above with respect to mirror repositories.

Claim 32	
32. A method as in claim 30 wherein said messages comprise event messages.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. *See*, Claim 22, above with respect to mirror repositories.
Claim 33	
33. A method as in claim 30 wherein said messages comprise exception messages.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. These messages may indicate for example, that an exception has occurred. Production Workflow also discusses at Sec. 3.7.3, pg. 109 that when an error is detected an appropriate alert is sent to is sent to the responsible process administrator. *See*, Claim 22, above with respect to mirror repositories.
Claim 34	
34. A method as in claim 30 wherein said messages comprise trigger messages.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. *See*, Claim 22, above with respect to mirror repositories.
Claim 35	
35. A method as in claim 30 wherein said messages comprise threshold messages.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor

	provides information about the current status of a process or activity. These messages may indicate for example, that a threshold has been met. *See*, Claim 22, above with respect to mirror repositories.
Claim 36	
36. A method as in claim 30 wherein said messages comprise flagged indicators.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. These messages may indicate for example, that a flag has been set. *See*, Claim 22, above with respect to mirror repositories.
Claim 37	
37. A method as in claim 30 wherein said messages comprise specially designated messages.	At Sec. 2.11, pg. 59, Production Workflow describes how, when a particular event is inserted into the audit trail of the workflow management system, appropriate messages may be sent. This can be done, for example, through the use of database triggers. Additionally, Production Workflow describes how the process performance monitor provides information about the current status of a process or activity. These messages may have special designations for the occurrence of some events. *See*, Claim 22, above with respect to mirror repositories.
Claim 50	
50. A method as in claim 46 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.	*See,* discussion of Claim 46 in Appendix A-1. Also, at Sec. 3.2, pgs. 63-64, Production Workflow describes that an external user may be a customer. At Sec. 1.2 pg. 4 and Sec 3.4.2 pg. 82, Production Workflow discloses that the status of orders may be provided to customers in conjunction with access to a company's web page and that to support such functionality information about that order is stored. Such information would be of interest to a customer. It would have been obvious to one of ordinary skill in the art to also distribute such information to a stock analyst.

Claim 108	
108. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises broadcasting unused pipeline capacity.	*See,* Claim 19, above.
Claim 110	
110. An apparatus as in claim 90 further comprising means for relieving monitoring pressure from a source application.	*See,* Claim 21, above.
Claim 111	
111. An apparatus as in claim 90 further comprising means for providing a duplicate of said central message repository.	*See*, Claim 22, above.
Claim 112	
112. An apparatus as in claim 111 further comprising means for providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.	*See*, Claim 23, above.
Claim 113	
113. An apparatus as in claim 90 further comprising means for providing a mirror repository of said central message repository.	*See*, Claim 24, above.
Claim 114	
114. An apparatus as in claim 113 wherein said mirror repository is used by an external entity.	*See*, Claim 25, above.

Claim 115	
115. An apparatus as in claim 113 wherein said mirror repository tracks processes, sub- processes and/or activities in whole or part.	*See*, Claim 26, above.
Claim 116	
116. An apparatus as in claim 113 wherein, if more than one minor repository is used, said repositories are combined.	*See*, Claim 27, above.
Claim 117	
117. An apparatus as in claim 113 wherein said mirror repository is used either in addition to or instead of said central message repository.	*See*, Claim 28, above.
Claim 118	
118. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.	*See*, Claim 29, above.
Claim 119	
119. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.	*See*, Claim 30, above.
Claim 120	
120. An apparatus as in claim 119 wherein said messages comprise error messages.	*See*, Claim 31, above.

Claim 121	
121. An apparatus as in claim 119 wherein said messages comprise event messages.	*See*, Claim 32, above.
Claim 122	
122. An apparatus as in claim 119 wherein said messages comprise exception messages.	*See*, Claim 33, above.
Claim 123	
123. An apparatus as in claim 119 wherein said messages comprise trigger messages.	*See*, Claim 34, above.
Claim 124	
124. An apparatus as in claim 119 wherein said messages comprise threshold messages.	*See*, Claim 35, above.
Claim 125	
125. An apparatus as in claim 119 wherein said messages comprise flagged indicators.	*See*, Claim 36, above.
Claim 126	
126. An apparatus as in claim 119 wherein said messages comprise specially designated messages.	*See*, Claim 37, above.
Claim 139	
139. An apparatus as in claim 136 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.	*See*, Claim 50, above.

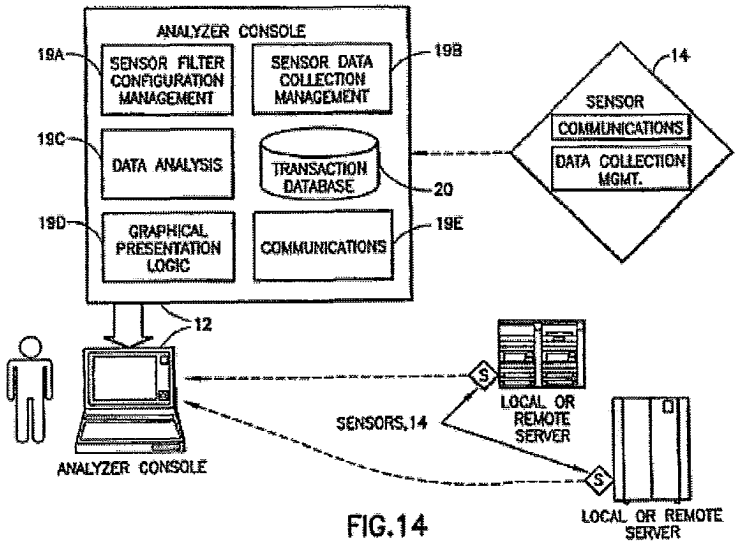
APPENDIX "B-1"

CLAIMS CHART MAPPING OF

BLACKWELL

TO THE CLAIM LIMITATIONS OF CLAIMS 1, 3, 5-7, 10-13, 15, 17-18, 20, 40-41, 44, 46-48, 70, 72, 75, 77, 79, 88-90, 92, 94-96, 99-102, 104, 106-107, 109, 129-130, 133, 135-137, 154, 156, 159, 161, 163 and 172-173 OF THE '674 PATENT

Claim Language of '674 Patent	Portion of Blackwell That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** The Blackwell patent describes at col. 15, lines 16-26 that the message passing technique can be a message-oriented middleware system such as MQSeries that operates with the components of the system to perform messaging so that the various programs and applications can run asynchronously. At col. 3, lines 43-48, Blackwell describes a method and system for monitoring the operation of a distributed data processing system, including a plurality of applications running on a plurality of host processors and communicating with one another through a message passing technique. **Original Message/Original Message Data** As discussed above for "asynchronous message environment," messages can be passed between applications using MQSeries. These messages are original messages containing original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** Blackwell discloses that a sensor operates to monitor the API calls from a user application to a queue manager, including, for example, MQPUT and MQGET . *See,* Blackwell, col. 12, lines 66-67; col. 7, lines 7-9; col. 4, lines 3-4; col. 4, line 64 to col. 5, line 13; and col. 14, lines 59-61. It is inherent that such API calls include a message header and a message buffer containing the message, itself (the original message containing original message data). *See,* Blackwell, col. 6, lines 54-57; col. 7, lines 28-33; col. 11, lines 42-50; col. 15, lines 50-55; and col. 16, lines 43-46. Blackwell describes intercepting an API call and generating an event comprising all or a portion of the data of the original message. *See,* Blackwell, col. 3, lines 53-54; col. 4, lines 5-9; col. 6, lines 53-57; col. 11, lines 42-51; and col. 15, lines 51-55. As further described by Blackwell at col. 5, lines 26-36 and

	col. 15, lines 61-63, MQSeries may then be used to send an event message containing the event to a database for storage. The event message is a monitoring message, containing original message data. **Central Message Repository** The event message is stored in a database as described at col. 15, lines 61-63 and FIGURES 13 and 14. FIGURE 14, set out below, discloses that databases (20) is centralized. *See also*, Blackwell, FIGURE 13.  FIG.14 Thus, as shown by FIGURE 14, Blackwell discloses providing, through a message from sensor 14 to analyzer 12 (a monitoring message),data (original message data) extracted from a message (an original message) intercepted by sensor 14 to a transaction database 20 (a central message repository).
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** The events that are stored in the database are connected or correlated with other events in the same transaction. Blackwell, col. 14, lines 23-30. The connected or correlated events comprise a transaction record. This transaction record can be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. The process of correlating or connecting events in a

	transaction record is discussed in several places in Blackwell. For example: Processing a plurality of the stored events to identify logically correlated events, such as those associated with a business transaction. Blackwell at Abstract, col 3, lines 54-55; Events are grouped automatically into related transactions. Blackwell at col. 12, line 53-55; What results is a set of connected or correlated events for a transaction that are correlated across all processes. Blackwell at col. 14, lines 25-27; *See also,* Blackwell at col. 17, lines 7-11. **Status Information of an Activity, Sub Process or Process** Blackwell discusses various examples of status information that may be contained in the user message data (original message data). *See, e.g.,* Blackwell, col. 3, lines 55-57; col. 4, lines 5-10; and col. 7, lines 28-33. Examples include: times when events occurred (col. 7, lines 15-20 and col. 9, lines 25-40), date that a loan obligation was satisfied (col. 11, lines 42-49), responses from applications such as 'approved', 'disapproved', 'conditionally approved' (col. 15, lines 1-5) and the current state of a transaction (col. 16, lines 19-23). *See also,* Blackwell, col. 15, lines 51-55; col. 12, lines 1-15; col. 16, lines 39-47; col. 6, lines 1-8 and lines 54-57; and col. 12, line 2.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** The transaction record can, for example, be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. A user can, therefore, view the connected or correlated events at a transaction level view or "drill down" into the more specific details of the captured events making up the transaction, including the message descriptor or the user data of the message which resulted in the event. *See,* Blackwell, col 2, lines 58-62; col. 3, lines 54-58; col. 14, lines 23-30; col. 15, lines 34-59; and col. 16, lines 39-43. In this manner, Blackwell teaches a system that can provide a user with messages and other data relating to a single transaction of interest. *See,* Blackwell, col. 17, lines 6-10. At col. 3, lines 55-56, Blackwell discloses displaying all or a portion of the stored API call content data for logically correlated events where the displaying preferably includes a step of processing the stored API call content data for

	the logically correlated events. Blackwell discloses, at col. 5, lines 25-26, a user interface for visualizing the collected event data and for performing data analysis. Blackwell describes, at col. 15, lines 33-35, how captured event data is analyzed to isolate and track the flow of one or more transactions. Blackwell, at col. 15, lines 51-57, goes on to describe how a user interface enables an operator to sort the collected event data by a variety of criteria and drill down into more details of the captured event, such as the message descriptor and the user data. At col. 16, lines 19-52, Blackwell describes in detail various views that may be presented to an operator, including a dynamic transaction visualization where transactions are shown as they happen or have happened, an event history view where all events can be viewed at a desired level of detail, including an event details mode where all of the user data in each message can be viewed.
Claim 3	
3. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about a customer from the central message repository.	At col. 14, line 35-col. 15, line 5, Blackwell describes monitoring a system for processing mortgage applications for on-line users or customer. Thus, in the course of monitoring such a system using the invention of Blackwell information about customers would be stored and retrieved from the central message repository.
Claim 5	
5. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving time slice information from the central message repository.	At col. 15, lines 46-50, Blackwell describes providing views of collected event data sorted by, for example, time. Such views are presented using the captured event data stored in the central message repository. At col. 13, line 21, Blackwell describes that events in the central message repository may be time-sorted. At col. 16, lines 35-37, Blackwell describes that events can be viewed in chronological order.

Claim 6	
6. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository.	At col. 15, lines 46-50, Blackwell describes providing views of collected event data sorted by, for example, time. Such views are presented using the captured event data stored in the central message repository. At col. 13, line 21, Blackwell describes that events in the central message repository may be time-sorted. At col. 16, lines 35-37, Blackwell describes that events can be viewed in chronological order.
Claim 7	
7. A method as in claim 6 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	At col. 14, line 67, Blackwell describes that application response times may vary (e.g. seconds to days or even weeks).
Claim 10	
10. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge trends.	At col. 15, lines 46-50, Blackwell describes providing views of collected event data sorted by, for example, time. Such views are presented using the captured event data stored in the central message repository. At col. 13, line 21, Blackwell describes that events in the central message repository may be time-sorted. At col. 16, lines 35-37, Blackwell describes that events can be viewed in chronological order.
Claim 11	
11. A method as in claim **10** wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	At col. 14, line 67, Blackwell describes that application response times may vary (e.g. seconds to days or even weeks).

Claim 12	
12. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge performance.	At col. 15, lines 46-50, Blackwell describes providing views of collected event data sorted by, for example, time. Such views are presented using the captured event data stored in the central message repository. At col. 13, line 21, Blackwell describes that events in the central message repository may be time-sorted. At col. 16, lines 35-37, Blackwell describes that events can be viewed in chronological order.
Claim 13	
13. A method as in claim **12** wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	At col. 14, line 67, Blackwell describes that application response times may vary (e.g. seconds to days or even weeks).
Claim 15	
15. A method as in claim 1 wherein said original message data comprises a data field.	Data fields in an original message are referenced throughout Blackwell. For example, FIGURE 17 and the accompanying description in Blackwell reference fields such as "Buffer", "Hobj", "MsgType", etc.
Claim 17	
17. A method as in claim 1 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process, and wherein said action provides data which is used as a data field within said monitoring message.	Blackwell discusses various examples of status information that may be contained in the user message data (original message data). *See, e.g.,* Blackwell, col. 3, lines 55-57; col. 4, lines 5-10; and col. 7, lines 28-33. Examples include: times when events occurred (col. 7, lines 15-20 and col. 9, lines 25-40), date that a loan obligation was satisfied (col. 11, lines 42-49), responses from applications such as 'approved', 'disapproved', 'conditionally approved' (col. 15, lines 1-5) and the current state of a transaction (col. 16, lines 19-23). *See also,* Blackwell, col. 15, lines 51-55; col. 12, lines 1-15; col. 16, lines 39-47; col. 6, lines 1-8 and lines 54-57; and col. 12, line 2. Blackwell discloses that a sensor operates to monitor the API calls from a user application to a queue manager, including, for example, MQPUT and MQGET . *See,* Blackwell, col. 12, lines 66-67; col. 7, lines 7-9; col. 4, lines 3-4; col. 4, line 64 to col. 5, line 13; and col. 14, lines 59-61. It is inherent that such API calls include a message

	header and a message buffer containing the message, itself (the original message containing original message data). *See,* Blackwell, col. 6, lines 54-57; col. 7, lines 28-33; col. 11, lines 42-50; col. 15, lines 50-55; and col. 16, lines 43-46. Blackwell describes intercepting an API call and generating an event comprising all or a portion of the data of the original message. *See,* Blackwell, col. 3, lines 53-54; col. 4, lines 5-9; col. 6, lines 53-57; col. 11, lines 42-51; and col. 15, lines 51-55. As further described by Blackwell at col. 5, lines 26-36 and col. 15, lines 61-63, MQSeries may then be used to send an event message containing the event to a database for storage. The event message is a monitoring message, containing data generated by an activity.
Claim 18	
18. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information in order to measure, monitor and track enterprise communications and processes.	At col. 16, lines 4-64, Blackwell describes providing a plurality of views of captured event data to diagnose problems, such as the repeated failure of a particular call or message queue. Such views are presented using the captured event data stored in the central message repository. At col. 16, lines 4-37, Blackwell describes providing a plurality of views of captured event data including the amount of message traffic passing through the process/queue link and dynamic transaction visualization. Such views are presented using the captured event data stored in the central message repository. At col. 15, lines 46-50, Blackwell describes providing views of collected event data sorted by, for example, time. Such views are presented using the captured event data stored in the central message repository. At col. 13, line 21, Blackwell describes that events in the central message repository may be time-sorted. At col. 16, lines 35-37, Blackwell describes that events can be viewed in chronological order.

Claim 20	
20. A method as in claim 1 wherein retrieving said information from the central message repository provides an alternative to retrieving original message data from an application that had originally generated said original message data.	*See,* Claim 1, above. It is thus inherent that retrieving said information from the central message repository would provide an alternative to any other method of retrieving such data.
Claim 40	
40. A method as in claim 1 wherein said retrieving information from the central message repository further comprises permitting a user to retrieve information over a corporate extranet.	Blackwell also discloses that the components may utilize a communications network. Blackwell, col. 14, lines 40-42.
Claim 41	
41. A method as in claim 1 further comprising providing a report.	At col. 15, lines 46-50, Blackwell describes providing views of collected event data sorted by, for example, time. Such views are presented using the captured event data stored in the central message repository. At col. 13, line 21, Blackwell describes that events in the central message repository may be time-sorted. At col. 16, lines 35-37, Blackwell describes that events can be viewed in chronological order. At col. 16, lines 4-37, Blackwell describes providing a plurality of views of captured event data including the amount of message traffic passing through the process/queue link and dynamic transaction visualization. Such views are presented using the captured event data stored in the central message repository.

Claim 44	
44. A method as in claim 40 wherein said user comprises a customer, and said permitting a user to retrieve information over a corporate extranet further comprises permitting said customer to retrieve information concerning said customer's orders.	At col. 14, line 35-col. 15, line 5, Blackwell describes monitoring a system for processing mortgage applications for on-line users or customer. Thus, in the course of monitoring such a system using the invention of Blackwell information about customers would be stored and retrieved from the central message repository by such customers. Blackwell also discloses that the components may utilize a communications network such as a corporate extranet. Blackwell, col. 14, lines 40-42.
Claim 46	
46. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See,* Claim 1, above.
providing, through a monitoring message, at least part of said original message data to a central message repository;	*See,* Claim 1, above.
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See,* Claim 1, above.
distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	**Distributing Information using a Real-Time Tool** Blackwell describes, at col. 15, lines 33-35, how captured event data is analyzed to isolate and track the flow of one or more transactions. Blackwell, at col. 15, lines 51-57, goes on to describe how a user interface enables an operator to sort the collected

	event data by a variety of criteria and drill down into more details of the captured event, such as the message descriptor and the user data. At col. 16, lines 19-52, Blackwell describes in detail various views that may be presented to an operator, including a dynamic transaction visualization where transactions are shown as they happen or have happened, an event history view where all events can be viewed at a desired level of detail, including an event details mode where all of the user data in each message can be viewed.
Claim 47	
47. A method as in claim 46 wherein said information is distributed using a distribution method selected from the group consisting of an intranet, an extranet, and the Internet.	Blackwell also discloses that the components may utilize a global communications network, such as the internet. Blackwell, col. 14, lines 40-42.
Claim 48	
48. A method as in claim 46 wherein said information is distributed to business partners.	At col. 14, line 35-col. 15, line 5 Blackwell describes monitoring a system for processing mortgage applications for on-line users or customer. Thus, in the course of monitoring such a system using the invention of Blackwell information about customers would be stored and retrieved from the central message repository by such customers. A customer is a business partner.
Claim 70	
70. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See,* Claim 1, above.
monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	Blackwell discloses that a process can be made up of multiple activities. *See e.g.*, FIG. 13

transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See,* Claim 1, above.
storing said original message data from said first activity, in a transaction record in said central message repository;	*See,* Claim 1, above.
transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See,* above description with respect to first activity.
storing said original message data from said second activity, in said transaction record in said central message repository;	*See,* above description with respect to first activity.
wherein said original message data comprises the status of said activity.	*See,* Claim 1, above.
Claim 72	
72. A method as in claim 70 wherein said original message data from each of said first and second activities comprises an activity specific set of data.	Blackwell discusses various examples of activity statuses that may be contained in the user message data (original message data). *See, e.g.,* Blackwell, col. 3, lines 55-57; col. 4, lines 5-10; and col. 7, lines 28-33. Examples include: times when events occurred (col. 7, lines 15-20 and col. 9, lines 25-40), date that a loan obligation was satisfied (col. 11, lines 42-49), responses from applications such as 'approved', 'disapproved', 'conditionally approved' (col. 15, lines 1-5) and the current state of a transaction (col. 16, lines 19-23). *See also,* Blackwell, col. 15, lines 51-55; col. 12, lines 1-15; col. 16, lines 39-47; col. 6, lines 1-8 and lines 54-57; and col. 12, line 2.
Claim 75	
75. A method as in claim 70 further comprising reviewing said central message repository.	The transaction record can, for example, be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. A user can, therefore, view

	the connected or correlated events at a transaction level view or "drill down" into the more specific details of the captured events making up the transaction, including the message descriptor or the user data of the message which resulted in the event. *See,* Blackwell, col 2, lines 58-62; col. 3, lines 54-58; col. 14, lines 23-30; col. 15, lines 34-59; and col. 16, lines 39-43. In this manner, Blackwell teaches a system that can provide a user with messages and other data relating to a single transaction of interest. *See,* Blackwell, col. 17, lines 6-10. At col. 3, lines 55-56, Blackwell discloses displaying all or a portion of the stored API call content data for logically correlated events where the displaying preferably includes a step of processing the stored API call content data for the logically correlated events. Blackwell discloses, at col. 5, lines 25-26, a user interface for visualizing the collected event data and for performing data analysis. Blackwell describes, at col. 15, lines 33-35, how captured event data is analyzed to isolate and track the flow of one or more transactions. Blackwell, at col. 15, lines 51-57, goes on to describe how a user interface enables an operator to sort the collected event data by a variety of criteria and drill down into more details of the captured event, such as the message descriptor and the user data. At col. 16, lines 19-52, Blackwell describes in detail various views that may be presented to an operator, including a dynamic transaction visualization where transactions are shown as they happen or have happened, an event history view where all events can be viewed at a desired level of detail, including an event details mode where all of the user data in each message can be viewed.
Claim 77	
77. A method as in claim 70 further comprising distributing process progress information in real time.	Blackwell describes, at col. 15, lines 33-35, how captured event data is analyzed to isolate and track the flow of one or more transactions. Blackwell, at col. 15, lines 51-57, goes on to describe how a user interface enables an operator to sort the collected event data by a variety of criteria and drill down into more details of the captured event, such as the message

	descriptor and the user data. At col. 16, lines 19-52, Blackwell describes in detail various views that may be presented to an operator, including a dynamic transaction visualization where transactions are shown as they happen or have happened, an event history view where all events can be viewed at a desired level of detail, including an event details mode where all of the user data in each message can be viewed.
Claim 79	
79. A method as in claim 70 further comprising distributing said process progress information through the Internet.	Blackwell also discloses that the components may utilize a global communications network, such as the internet. Blackwell, col. 14, lines 40-42.
Claim 88	
88. A method as in claim 70 further comprising distributing said process progress information through an intranet.	Blackwell discloses that the components may utilize a communications network. Blackwell, col. 14, lines 40-42.
Claim 89	
89. A method as in claim 70 further comprising distributing said process progress information through an extranet.	Blackwell discloses that the components may utilize a communications network. Blackwell, col. 14, lines 40-42.
Claim 90	
90. An apparatus for use in an asynchronous messaging environment in a communications system or systems wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See,* Claim 1, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See,* Claim 1, above.

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See,* Claim 1, above.
means for retrieving information from the central message repository.	*See,* Claim 1, above.
Claim 92	
92. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about a customer from the central message repository.	*See,* Claim 3, above.
Claim 94	
94. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving time slice information from the central message repository.	*See,* Claim 5, above.
Claim 95	
95. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository.	*See,* Claim 6, above.

Claim 96	
96. An apparatus as in claim 95 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See,* Claim 7, above.
Claim 99	
99. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge trends.	*See,* Claim 10, above.
Claim 100	
100. An apparatus as in claim 99 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See,* Claim 11, above.
Claim 101	
101. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge performance.	*See,* Claim 12, above.
Claim 102	
102. An apparatus as in claim 101 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See,* Claim 13, above.

Claim 104	
104. An apparatus as in claim 90 wherein said original message data comprises a data field.	*See,* Claim 15, above.
Claim 106	
106. An apparatus as in claim 90 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process an sub process, or process, and wherein said action provides data which is used as a data field within said monitoring message.	*See,* Claim 17, above.
Claim 107	
107. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information in order to measure, monitor and/or track enterprise communications and processes.	*See,* Claim 18, above.
Claim 109	
109. An apparatus as in claim 90 wherein said means for retrieving said information from the central message repository provides an alternative to means for retrieving original message data from an application that had originally generated said original message data.	*See,* Claim 20, above.

Claim 129	
129. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises means for permitting a user to retrieve information over a corporate extranet.	*See,* Claim 40, above.
Claim 130	
130. An apparatus as in claim 90 further comprising means for providing a report.	*See,* Claim 41, above.
Claim 133	
133. An apparatus as in claim 129 wherein said user comprises a customer, and said means for permitting a user to retrieve information over a corporate extranet further comprises means for permitting said customer to retrieve information concerning said customer's orders.	*See,* Claim 44, above.
Claim 135	
135. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See,* Claim 46, above.
means for providing, though a monitoring message, at least part of said original message data to a central message repository;	*See,* Claim 46, above.

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See,* Claim 46, above.
means for distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	*See,* Claim 46, above.
Claim 136	
136. An apparatus as in claim 135 wherein said means for distributing information comprises a means for distributing information selected from the group consisting of an intranet, an extranet, and the Internet.	*See,* Claim 47, above.
Claim 137	
137. An apparatus as in claim 136 wherein said information is distributed to business partners.	*See,* Claim 48, above.
Claim 154	
154. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See,* Claim 70, above.

means for monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	*See,* Claim 70, above.
means for transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See,* Claim 70, above.
means for storing said original message data from said first activity, in a transaction record in said central message repository;	*See,* Claim 70, above.
means for transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See,* Claim 70, above.
means for storing said original message data from said second activity, in said transaction record in said central message repository;	*See,* Claim 70, above.
wherein said original message data comprises the status of said activity.	*See,* Claim 70, above.
Claim 156	
156. An apparatus as in claim 154 wherein said original message data from each of said first and second activities comprises an activity specific set of data.	*See,* Claim 72, above.

Claim 159	
159. An apparatus as in claim 155 further comprising means for reviewing said central message repository.	*See,* Claim 75, above.
Claim 161	
161. An apparatus as in claim 155 further comprising distributing process progress information in real time.	*See,* Claim 77, above.
Claim 163	
163. An apparatus as in claim 161 further comprising distributing said process progress information through the Internet.	*See,* Claim 79, above.
Claim 172	
172. An apparatus as in claim 155 further comprising distributing said process progress information through an intranet.	*See,* Claim 88, above.
Claim 173	
173. An apparatus as in claim 155 further comprising distributing said process progress information through an extranet.	*See,* Claim 89, above.

APPENDIX "B-2"

CLAIMS CHART MAPPING OF

BLACKWELL

TO THE CLAIM LIMITATIONS OF CLAIMS 2, 22-28, 30, 38-39, 42-43, 45, 51-55, 57-60, 63-65, 67, 69, 71, 87, 91, 111-117, 119, 127-128, 131-132, 134, 140-146, 149-151, 153, 155 and 171 OF THE '674 PATENT

Claim Language of '674 Patent	Portion of Blackwell That Meets the Limitation
Claim 2	
2. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about an order from the central message repository.	At col. 17, lines 35-42, Blackwell discusses that a production process may be monitored. Thus, it would have been obvious to one of ordinary skill in the art to use the invention of Blackwell to store and retrieve information about orders from a central message repository.
Claim 22	
22. A method as in claim 1 further comprising providing a duplicate of said central message repository.	The use of mirror databases was well known by those of ordinary skill in the art well before the Dec. 15, 2000, priority date of the '674 Patent. Such mirror databases were duplicates of an original database in a system and were used to provide data redundancy, increase fault tolerance, increase the speed of systems with which they were utilized and for other goals. Thus, it would have been obvious to one of ordinary skill in the art to utilize a mirror database in conjunction with the systems disclosed in Blackwell to accomplish one or more of these goals.
Claim 23	
23. A method as in claim 22 further comprising providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.	It was well known by one of ordinary skill in the art to locate mirror databases at locations that are different than the location of the original database in order to, for example, increase fault tolerance or increase speed of access (*e.g.*, putting the mirror database at an entity which needs the information contained in the database (*e.g.*, a business partner)). In order to update a mirror database it was also well known to provide a communication channel between the original database and the mirror database. Thus, it would have been obvious to one of ordinary skill in the art to utilize a mirror database at an external entity in conjunction with the system disclosed in Blackwell and to establish a communication channel between the mirror database and the centralized database of Blackwell to accomplish one or more of these goals.
Claim 24	
24. A method as in claim 1 further comprising providing a mirror repository of said central message repository.	*See,* Claim 22, above.

Claim 25	
25. A method as in claim 24 wherein said mirror repository is used by an external entity.	*See,* Claim 23, above.
Claim 26	
26. A method as in claim 25 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.	It is inherent that a mirror repository would comprise the same data as the central message repository. The events that are stored in the database are connected or correlated with other events in the same transaction. Blackwell, col. 14, lines 23-30. The connected or correlated events comprise a transaction record. This transaction record can be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. The process of correlating or connecting events in a transaction record is discussed in several places in Blackwell. For example: Processing a plurality of the stored events to identify logically correlated events, such as those associated with a business transaction. Blackwell at Abstract, col 3, lines 54-55; Events are grouped automatically into related transactions. Blackwell at col. 12, line 53-55; What results is a set of connected or correlated events for a transaction that are correlated across all processes. Blackwell at col. 14, lines 25-27; *See also,* Blackwell at col. 17, lines 7-11.
Claim 27	
27. A method as in claim 24 wherein, if more than one mirror repository is used, said repositories are combined.	The combination of multiple mirror databases was well known by those of ordinary skill in the art well before the Dec. 15, 2000, priority date of the '674 Patent. Thus, it would have been obvious to one of ordinary skill in the art to utilize a multiple combined mirror databases in conjunction with the systems disclosed in Blackwell to accomplish one or more of these goals.
Claim 28	
28. A method as in claim 24 wherein said mirror repository is used either in addition to or instead of said central message repository.	*See,* Claim 22, above.

Claim 30	
30. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.	Blackwell describes in multiple places how data in the workflow management system database is used to generate feedback to users. The transaction record can, for example, be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. A user can, therefore, view the connected or correlated events at a transaction level view or "drill down" into the more specific details of the captured events making up the transaction, including the message descriptor or the user data of the message which resulted in the event. *See,* Blackwell, col 2, lines 58-62; col. 3, lines 54-58; col. 14, lines 23-30; col. 15, lines 34-59; and col. 16, lines 39-43. In this manner, Blackwell teaches a system that can provide a user with messages and other data relating to a single transaction of interest. *See,* Blackwell, col. 17, lines 6-10. At col. 3, lines 55-56, Blackwell discloses displaying all or a portion of the stored API call content data for logically correlated events where the displaying preferably includes a step of processing the stored API call content data for the logically correlated events. Blackwell discloses, at col. 5, lines 25-26, a user interface for visualizing the collected event data and for performing data analysis. Blackwell describes, at col. 15, lines 33-35, how captured event data is analyzed to isolate and track the flow of one or more transactions. Blackwell, at col. 15, lines 51-57, goes on to describe how a user interface enables an operator to sort the collected event data by a variety of criteria and drill down into more details of the captured event, such as the message descriptor and the user data. At col. 16, lines 19-52, Blackwell describes in detail various views that may be presented to an operator, including a dynamic transaction visualization where transactions are shown as they happen or have happened, an event history view where all events can be viewed at a desired level of detail, including an event details mode where all of the user data in each message can be viewed. *See also,* Claim 22, above.

Claim 38	
38. A method as in claim 1 wherein said retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.	It would have been obvious to one of ordinary skill in the art to implement security in conjunction with a central message repository comprising data associated with, for example, a mortgage application approval process, where financial information is being stored.
Claim 39	
39. A method as in claim 38 wherein said retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.	*See,* Claim 38, above.
Claim 42	
42. A method as in claim 41 further comprising providing said report through an XML link to said central message repository.	*See,* previous discussion of Claim 41 in Appendix B-1; *see also,* discussion at Claim 30, above. The use of XML was well known in the art. Thus, it would have been obvious to one of ordinary skill in the art to provide a report through an XML link.
Claim 43	
43. A method as in claim 42 further comprising displaying said report.	*See,* previous discussion of Claim 41 in Appendix B-1; *see also,* Claim 42, above.
Claim 45	
45. A method as in claim 43 wherein said display provides an option to drill down through said display for further detail.	Blackwell describes in multiple places how data in the workflow management system database is used to generate feedback to users. The transaction record can, for example, be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22. A user can, therefore, view the connected or correlated events at a transaction level view or "drill down" into the more specific details of the captured events making up the transaction, including the message descriptor or the user data of the message which resulted in the event. *See,* Blackwell, col 2, lines 58-62; col. 3, lines 54-58; col. 14, lines 23-30; col. 15, lines 34-59; and col. 16, lines 39-43. In this manner,

	Blackwell teaches a system that can provide a user with messages and other data relating to a single transaction of interest. *See,* Blackwell, col. 17, lines 6-10.
Claim 51	
51. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See,* discussion of Claim 1 in Appendix B-1.
providing, through a monitoring message, at least part of said original message data to a central message repository;	*See,* discussion of Claim 1 in Appendix B-1.
populating a transaction record in said central message repository with said original message data provided by said monitoring message;	*See,* discussion of Claim 1 in Appendix B-1.
reviewing data collected in said transaction record;	*See,* discussion of Claim 1 in Appendix B-1.
wherein said original message data comprises status information of a process and/or sub process.	**Process and/or Sub Process** One of ordinary skill in the art would know that an activity of a process could itself be a process or "subprocess" and that activities of a process would be different and would, therefore, comprise their own sets of data. Thus, it would have been obvious to one of ordinary skill in the art that original messages from subprocesses would comprise original message data with subprocess-specific sets of data.

Claim 52	
52. A method as in claim 51 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	FIGURE 17 of Blackwell discloses that message data comprises both date and time data. Col. 9, lines 37-40 of Blackwell discusses that message data can include the "PutDate" and the "PutTime". Blackwell discloses, at col 11, lines 42-45, that part of the user message data may include a particular date of interest (*e.g.,* a date that a previous loan obligation was satisfied).
Claim 53	
53. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	*See,* discussion of Claim 3 in Appendix B-1.
Claim 54	
54. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	*See,* Claim 53, above.
Claim 55	
55. A method as in claim 51 further comprising providing the status of a process by providing access to said central message repository.	*See,* discussion of Claim 1 in Appendix B-1; *see also,* discussion at Claim 30, above.
Claim 57	
57. A method as in claim 51 further comprising updating said transaction record.	Blackwell describes analyzer 12 connecting or correlating a set of events for a given transaction. Blackwell, col. 14, lines 23-30. The connected or correlated events comprise a transaction record. This transaction record can be used to display the transaction as it happens or has happened across

	multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22.
Claim 58	
58. A method as in claim 57 further comprising updating said transaction record by:	
providing, through a second monitoring message, a second original message data to said transaction record; and,	At col. 14, line 35 to col. 15, line 57 and at FIGURE 13, Blackwell discloses a mortgage application processing system comprising multiple distributed applications, including for example, a credit check application, a verify income application, a title search application, etc. Messages are sent between these various applications to process mortgage requests. Sensors are operated with the various applications to capture event data from each of these applications. Thus, Blackwell discloses the use of multiple original messages and multiple monitoring messages.
populating said transaction record with said second original message data provided by said second monitoring message.	Blackwell describes analyzer 12 connecting or correlating a set of events for a given transaction. Blackwell, col. 14, lines 23-30. The connected or correlated events comprise a transaction record. This transaction record can be used to display the transaction as it happens or has happened across multiple hosts, operating systems and applications. Blackwell, col. 16, lines 19-22.
Claim 59	
59. A method as in claim 51 further comprising completing a process.	At col. 16, lines 20-21, Blackwell discloses that transactions can be viewed as they happen or as they have happened. Thus, transactions can be viewed after they have completed. At col. 15, lines 14-15, Blackwell discusses that processes may be in varying stages of completion.
Claim 60	
60. A method as in claim 51 further comprising completing said transaction record.	At col. 16, lines 20-21, Blackwell discloses that transactions can be viewed as they happen or as they have happened. Thus, the transaction records can be completed and viewed as completed transactions.
Claim 63	
63. A central message repository created by the method of claim 51.	*See,* Claim 51, above.

Claim 64	
64. A transaction record created by the method of claim 51.	*See,* Claim 51, above.
Claim 65	
65. A method as in claim 51 wherein said process is a simulated process.	Blackwell discusses, at col. 17, lines 35-43, that the described systems and methods may be utilized in both a development environment and in an actual production environment. Any processes occurring in a development environment and any statuses associated with such processes would thus be simulated.
Claim 67	
67. A method as in claim 51 wherein said original message data is simulated original message data.	*See,* Claim 65, above.
Claim 69	
69. A method as in claim 51 further comprising providing the status of an activity by providing access to said central message repository.	*See,* discussion of Claim 1 in Appendix B-1; *see also,* discussion at Claim 30, above.
Claim 71	
71. A method as in claim 70 further comprising determining the status of said sub process.	*See,* Claim 51, above. In addition, one of ordinary skill in the art would know that an activity of a process could itself be a process or a "subprocess." As Blackwell discloses that a process can be made up of multiple activities, it would have been obvious to one of ordinary skill in the art to monitor a process comprised of a first and second subprocess as the activities are monitored with respect to the limitations of Claim 1.
Claim 87	
87. A method as in claim 70 further comprising distributing said process progress information through Wireless Application Protocol.	*See,* discussion of Claim 31 in Appendix B-1. Since Blackwell describes the use of the internet for communications, it would have been obvious to one of ordinary skill in the art to use protocols such as Wireless Application Protocol to distribute process progress information.

Claim 91	
91. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about an order from the central message repository.	*See,* Claim 2, above.
Claim 111	
111. An apparatus as in claim 90 further comprising means for providing a duplicate of said central message repository.	*See,* Claim 22, above.
Claim 112	
112. An apparatus as in claim 111 further comprising means for providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.	*See,* Claim 23, above.
Claim 113	
113. An apparatus as in claim 90 further comprising means for providing a mirror repository of said central message repository.	*See,* Claim 24, above.
Claim 114	
114. An apparatus as in claim 113 wherein said mirror repository is used by an external entity.	*See,* Claim 25, above.

Claim 115	
115. An apparatus as in claim 113 wherein said mirror repository tracks processes, sub- processes and/or activities in whole or part.	*See,* Claim 26, above.
Claim 116	
116. An apparatus as in claim 113 wherein, if more than one minor repository is used, said repositories are combined.	*See,* Claim 27, above.
Claim 117	
117. An apparatus as in claim 113 wherein said mirror repository is used either in addition to or instead of said central message repository.	*See,* Claim 28, above.
Claim 119	
119. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.	*See,* Claim 30, above.
Claim 127	
127. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.	*See,* Claim 38, above.

Claim 128	
128. An apparatus as in claim 127 wherein said means for retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.	*See,* Claim 39, above.
Claim 131	
131. An apparatus as in claim 130 further comprising means for providing said report through an XML link to said central message repository.	*See,* Claim 42, above.
Claim 132	
132. An apparatus as in claim 130 further comprising means for displaying said report.	*See,* Claim 43, above.
Claim 134	
134. An apparatus as in claim 132 wherein said means for displaying said report provides an option to drill down through a display generated by said means for displaying said report for further detail.	*See,* Claim 45, above.

Claim 140	
140. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See,* Claim 51, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See,* Claim 51, above.
means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,	*See,* Claim 51, above.
means for updating said transaction record;	*See,* Claim 57, above.
wherein said original message data comprises stares information of a process and/or sub process.	*See,* Claim 51, above.
Claim 141	
141. An apparatus as in claim 140 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	*See,* Claim 52, above.

Claim 142	
142. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	*See,* Claim 53, above.
Claim 143	
143. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	*See,* Claim 54, above.
Claim 144	
144. An apparatus as in claim 140 further comprising updating said transaction record by:	*See,* Claim 58, above.
means for providing, through a second monitoring message, a second original message data to said transaction record; and,	*See,* Claim 58, above.
means for populating said transaction record with said second original message data provided by said second monitoring message.	*See,* Claim 58, above.
Claim 145	
145. An apparatus as in claim 140 further comprising completing a process.	*See,* Claim 59, above.

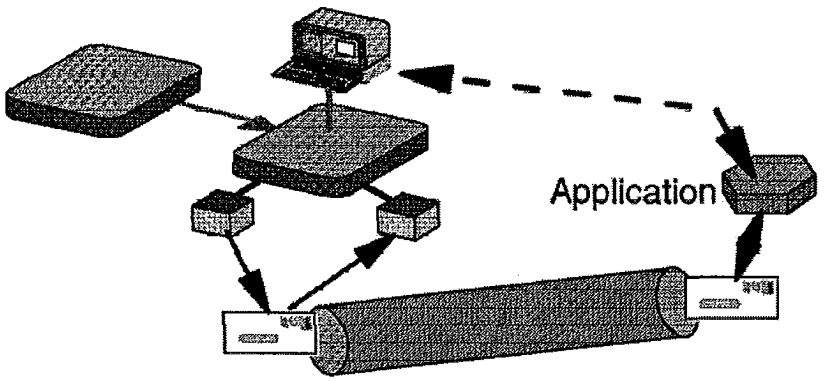
Claim 146	
146. An apparatus as in claim 140 further comprising completing said transaction record.	*See,* Claim 60, above.
Claim 149	
149. A central message repository created by the method of claim 140.	*See,* Claim 63, above.
Claim 150	
150. A transaction record created by the method of claim 140.	*See,* Claim 64, above.
Claim 151	
151. An apparatus as in claim 140 wherein said process is a simulated process.	*See,* Claim 65, above.
Claim 153	
153. An apparatus as in claim 140 wherein said original message data is simulated original message data.	*See,* Claim 67, above.
Claim 155	
155. An apparatus as in claim 154 further comprising determining the status of said sub process.	*See,* Claim 71, above.
Claim 171	
171. An apparatus as in claim 155 further comprising distributing said process progress information through Wireless Application Protocol.	*See,* Claim 87, above.

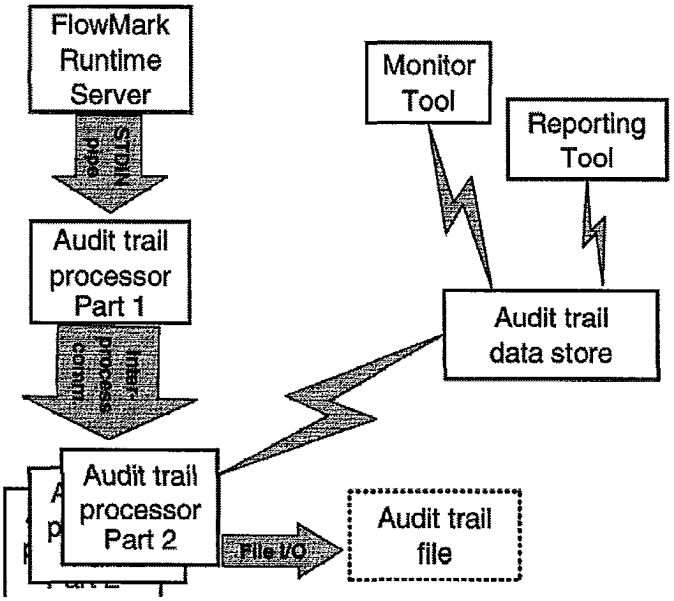
APPENDIX "C-1"

CLAIMS CHART MAPPING OF

ADVANCED WORKFLOW SOLUTIONS

TO THE CLAIM LIMITATIONS OF CLAIMS 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 AND 172-173 OF THE '674 PATENT

Claim Language of '674 Patent	Portion of Advanced Workflow Solutions ("AWS") That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** At Sec. 6.3, pgs. 51-52, AWS discloses the use of an asynchronous messaging system like IBM's MQSeries to exchange data between the workflow system and the applications performing the activities of a process. *See also,* Figure 25. **Original Message/Original Message Data** As described at Sec. 6.3, pgs. 51-52 of AWS, FlowMark is able to communicate with a message-based application to perform an activity in a process. When FlowMark communicates with such a message- based application, the data necessary for the application is posted into a message, which is shipped to the target application tasked with performing the activity. On completion of the activity, the target application sends a message back to the workflow management system, signaling that the activity is complete and providing the data to be stored in the FlowMark output container. *See also,* Figure 25 (set out below); AWS, Sec. 6, pg. 49 (applications "can store newly generated data in the output container, so that FlowMark can send this information to other activities in the process."); and Sec. 8.2.2, pg. 72.  *Figure 25. Message-based Workflow Application* Figure 25 depicts the use of messages to transmit data to and from an application performing an activity in a process. These messages are original messages containing original message data.

providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** At Sec. 10.2, pgs. 82-83, AWS discloses that output data (original message data) from a message-based application can be included in the audit trail. The audit trail can be written to an audit trail processing program. AWS, Sec. 10.3, pg. 84. The audit trail processor process and stores the audit trail records into an audit trail data store. Storing the audit trail records in the audit trail data store can be accomplished through messages passed via a messaging system (for example, MQSeries). AWS, Sec. 10.3.1, pg. 85 and Figure 35.  *Figure 35. Building an Audit Trail Processor* Figure 35 from AWS depicts the "Audit trail processor Part 2" component of the FlowMark system sending audit trail records to the "Audit trail data store" by means of a message. This message is a monitoring message containing original message data. **Central Message Repository** As described in AWS and depicted in Figure 35, the "audit trail records" can be stored in an "audit trail data store." *See,* AWS, Sec. 10.2-10.4, pgs. 82-91, Figure 35. AWS further notes that "[t]he data store should reside on a different machine, so that the performance of the FlowMark server machine is not significantly impacted." AWS, Sec. 10.3.1, pg. 85. The audit trail data store is a central message repository. Thus, as described in AWS and as depicted in Figure 35, FlowMark

	can send output data (original message data) provided in a message (original message) from a message-based application to an audit trail data store (central message repository) by means of a separate message (a monitoring message).
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** AWS discloses that FlowMark records every event that occurs in the FlowMark system while managing processes in the FlowMark audit trial. Sec. 10.2, pgs. 82-83. This audit trail information contains the output data (original message data) that was received in the message (original message) from the message-based application. *See,* AWS, Sec. 10.3.1, pg. 85; Figure 35; and Sec. 10.2, pgs. 82-83; *See also*, AWS, Sec. 6.3, pgs. 51-52, Figure 25. AWS discloses that this audit trail information can be written to an audit trail processing program. AWS, Sec. 10.3, pg. 84. The "audit trail processor" can process and store this audit trail information as audit trail records in an audit trail data store (a central message repository). AWS, Sec. 10.3.1, pg. 85 and Figure 35. The audit trail records are transaction records. **Status Information of an Activity, Sub Process or Process** AWS discloses examples of status information that may be contained in the output data (original message data) provided in the message (original message) from the message-based application, including the description of the object for which the status change is being recorded (which description is associated with the full data container and the data contained therein) and the time/date when the activity or process was completed. AWS, Sec. 10.2, pgs. 82-83 ("Using the audit trail information, one can obtain the status of every process instance in the FlowMark system."); Sec. 10.4.1 (describing the use of a workflow monitor to monitor the subprocesses of an overall process); *see also*, 10.4.2, pgs. 89-91 and Figure 36.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** AWS further discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35 (depicting a monitoring tool accessing the audit trail data store); Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39.

Claim 2	
2. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about an order from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. At Figure 36, on pg. 88, AWS discloses that the workflow monitor can retrieve information about an order from the audit trail data store (centralized message repository).
Claim 3	
3. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about a customer from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. At Figure 36, on pg. 88, AWS discloses that the workflow monitor can retrieve information about an order from the audit trail data store (centralized message repository).
Claim 4	
4. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving process efficiency information from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 36 shows a screen shot of the workflow monitoring system showing all of the processes in the system, including where work is stacking up and overall elapsed cycle times. AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37.

Claim 5	
5. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving time slice information from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for selected time spans and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a selected time span.
Claim 6	
6. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for selected time spans; and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a selected time span.
Claim 7	
7. A method as in claim 6 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for selected time spans (the months of January and February are shown in the screen shot contained in Figure 39);

	and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a selected time span.
Claim 8	
8. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information to gauge trends from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for time spans; and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a set time period, demonstrating a trend.
Claim 9	
9. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information to gauge performance from the central message repository.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for selected time spans; and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a set time period, demonstrating performance of a selected employee over a selected time period (the screen shot depicted in Figure 38 is titled "Performance Applet – Netscape).

Claim 10	
10. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge trends.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for selected time spans; and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a set time period, demonstrating performance of a selected employee over the selected time period.
Claim 11	
11. A method as in claim 10 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	Figures 38 and 39 of AWS both demonstrate the ability to select time periods, including a one month time span (the screen shot in Figure 39 shows that the selected time span was the months of January and February). AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91.
Claim 12	
12. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge performance.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes for selected time spans; and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a set time period, demonstrating performance of a selected employee over a selected time period (the screen shot depicted in Figure 38 is titled "Performance Applet

	– Netscape). Figures 38 and 39 of AWS both demonstrate the ability to select time periods, including a one month time span (the screen shot in Figure 39 shows that the selected time span was the months of January and February). AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91.
Claim 13	
13. A method as in claim 12 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	Figures 38 and 39 of AWS both demonstrate the ability to select time periods, including a one month time span (the screen shot in Figure 39 shows that the selected time span was the months of January and February). AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91.
Claim 14	
14. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information about process efficiency.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 36 shows a screen shot of the workflow monitoring system showing all of the processes in the system, including where work is stacking up and overall elapsed cycle times. AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37.
Claim 15	
15. A method as in claim 1 wherein said original message data comprises a data field.	Table 4 of AWS describes certain data fields that can be captured in the audit trail records. AWS, pg. 83; *see also,* Sec. 10.2, pgs. 82-83.
Claim 16	
16. A method as in claim 15 wherein said data field is path specific.	Table 4 of AWS describes certain data fields that can be captured in the audit trail records. AWS, pg. 83; *see also,* Sec. 10.2, pgs. 82-83. The data fields in the message from the message-based

	application would be specific to the path of execution for the process instance associated with the activity implemented by the message-based application. *See,* Claim 1, above.
Claim 17	
17. A method as in claim 1 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process, and wherein said action provides data which is used as a data field within said monitoring message.	As described above with respect to Claim 1, when a message-based application completes an activity, it sends a message (an original message) back to Flowmark containing output data (original message data) from the activity completed by the application. AWS, Sec. 6.3, pgs. 51-52. Table 4 of AWS describes certain data fields that can be captured in the audit trail records. AWS, pg. 83; *see also,* Sec. 10.2, pgs. 82-83. As also described above with respect to Claim 1, the audit trail records can be sent to the audit trail data store by way of a separate message (a monitoring message).
Claim 18	
18. A method as in claim 1 wherein said retrieving information from the central message repository comprises retrieving information in order to measure, monitor and track enterprise communications and processes.	AWS discusses that the data in the audit trail records, including status information, can be accessed and retrieved from the audit trail data store by monitoring and analysis programs. See, AWS, Sec. 10.3.1, pg. 85; see also, Figure 35; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. AWS describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 36 shows a screen shot of the workflow monitoring system showing all of the processes in the system, including where work is stacking up and overall elapsed cycle times. AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37.

Claim 20	
20. A method as in claim 1 wherein retrieving said information from the central message repository provides an alternative to retrieving original message data from an application that had originally generated said original message data.	*See*, Claim 1, above. It is inherent that retrieving said information from the central message repository would provide an alternative to any other method of retrieving such data, including from the message-based application which generated the output data (original message data).
Claim 22	
22. A method as in claim 1 further comprising providing a duplicate of said central message repository.	At pg. 12, AWS discloses the use of disk mirroring for the database or audit trail disk (central message repository). *See,* Sec. 2, pgs. 11-13.
Claim 23	
23. A method as in claim 22 further comprising providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.	At pg. 12, AWS discloses the use of "heartbeat messages" exchanged between various servers in the system, to determine up-time for the servers. Such communications could be made between the audit trail disk and the mirror of such disk. *See,* Sec. 2, pgs. 11-13.
Claim 24	
24. A method as in claim 1 further comprising providing a mirror repository of said central message repository.	At pg. 12, AWS discloses the use of disk mirroring for the database or audit trail disk (central message repository). *See,* Sec. 2, pgs. 11-13.
Claim 25	
25. A method as in claim 24 wherein said mirror repository is used by an external entity.	At pg. 12, AWS discloses the use of disk mirroring for the database or audit trail disk (central message repository). *See,* Sec. 2, pgs. 11-13.

	AWS also discloses that, through the use Java and various filter and security options, information in the audit trail data store (central message repository) can be provided to external entities. *See,* AWS, Sec. 10.4.1, pg. 87.
Claim 26	
26. A method as in claim 25 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.	*See,* Claims 1, 18 and 25, above.
Claim 27	
27. A method as in claim 24 wherein, if more than one mirror repository is used, said repositories are combined.	At pg. 12, AWS discloses the use of a RAID configuration for the database or audit trail disk (central message repository). *See,* Sec. 2, pgs. 11-13.
Claim 28	
28. A method as in claim 24 wherein said mirror repository is used either in addition to or instead of said central message repository.	At pg. 12, AWS discloses the use of disk mirroring for the database or audit trail disk (central message repository). *See,* Sec. 2, pgs. 11-13. It is inherent that one of the reasons to mirror the audit trail disk is to use the mirrored disk when the audit trail disk is unavailable.
Claim 29	
29. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate a message to an activity, an application or a user, providing feedback.
Claim 30	
30. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,*

	Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate a message to a user, providing feedback.
Claim 31	
31. A method as in claim 30 wherein said messages comprise error messages.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate an error message.
Claim 32	
32. A method as in claim 30 wherein said messages comprise event messages.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate an event message.
Claim 33	
33. A method as in claim 30 wherein said messages comprise exception messages.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate an exception message.
Claim 34	
34. A method as in claim 30 wherein said messages comprise trigger messages.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate a message.

Claim 35	
35. A method as in claim 30 wherein said messages comprise threshold messages.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate a message indicating that a threshold has been met.
Claim 36	
36. A method as in claim 30 wherein said messages comprise flagged indicators.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate a message indicating that a flag has been set.
Claim 37	
37. A method as in claim 30 wherein said messages comprise specially designated messages.	At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 37; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. Such triggers could generate a specially designated message.
Claim 38	
38. A method as in claim 1 wherein said retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.	AWS discloses the use of security options in providing access to the audit trail data store (central message repository). *See,* AWS, Sec. 10.4.1, pg. 87; *see also,* Sec. 10.4.2. pg. 89 (discussing the ability to make information available to "appropriate users").

Claim 39	
39. A method as in claim 38 wherein said retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.	AWS discloses the use of security options in providing access to the audit trail data store (central message repository). *See,* AWS, Sec. 10.4.1, pg. 87; *see also,* Sec. 10.4.2, pg. 89 (discussing the ability to make information available to "appropriate users"). As noted by AWS, "[t]he business monitor can be customized, so that different data is presented to different users." AWS, Sec. 10.4.2, pg. 89.
Claim 40	
40. A method as in claim 1 wherein said retrieving information from the central message repository further comprises permitting a user to retrieve information over a corporate extranet.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87.
Claim 41	
41. A method as in claim 1 further comprising providing a report.	The workflow monitor and business monitor described by AWS are able to provide reports. *See,* AWS, Sec.10.4.1 and 10.4.2, pgs. 87-91; and Figures 36-39.
Claim 44	
44. A method as in claim 40 wherein said user comprises a customer, and said permitting a user to retrieve information over a corporate extranet further comprises permitting said customer to retrieve information concerning said customer's orders.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87.

Claim 46	
46. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See,* Claim 1, above.
providing, through a monitoring message, at least part of said original message data to a central message repository;	*See,* Claim 1, above.
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See,* Claim 1, above.
distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	**Distributing Information using a Real-Time Tool** At pg. 87, AWS discusses the ability to set "operational triggers" and alarms through the workflow monitor, which can generate an alarm or notification upon certain conditions such as "work in a particular process step is stacking up too high, overall processing times are running too long, working times for particular activities are too long, the number of work items per user is too large," etc. *See,* AWS, Sec. 10.4.1, pgs. 87-88; Figures 36 and 38; *see also,* Sec. 10.4.2, pgs. 89-91, Figures 38 and 39. As noted by AWS, the goal of the business monitor is "to make business information available to the executives on a real-time basis, so that business decisions can be made on accurate and up-

	to-date information. AWS, Sec. 10.4.2, pg. 89.
Claim 47	
47. A method as in claim 46 wherein said information is distributed using a distribution method selected from the group consisting of an intranet, an extranet, and the Internet.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87.
Claim 48	
48. A method as in claim 46 wherein said information is distributed to business partners.	Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87.
Claim 49	
49. A method as in claim 48 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87. Figure 36 depicts a screen shot of the workflow monitor showing the status of "Product Assembly," including information regarding delivery of parts. AWS at pg. 88.
Claim 50	
50. A method as in claim 46 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87. Such external entities could include stock analysts. Figures 36-38 show various screen shots of the views available through the workflow monitor, including productivity information. AWS, Sec. 10.4.1 and 10.4.2, pgs. 87-91.

Claim 51	
51. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See,* Claim 1, above.
providing, through a monitoring message, at least part of said original message data to a central message repository;	*See,* Claim 1, above.
populating a transaction record in said central message repository with said original message data provided by said monitoring message;	*See,* Claim 1, above.
reviewing data collected in said transaction record;	*See,* Claim 1, above.
wherein said original message data comprises status information of a process and/or sub process.	**Process and/or Sub Process** According to AWS, the audit trail records can contain information provided by the message-based application in the output container, including the description of the object for which the status change is being recorded (which description is associated with the full container and the data contained therein) along with process start time/date; process completion time/date, etc. Using the audit trail information, one can obtain the status of every process instance in the FlowMark system. AWS, Sec. 10.2, pgs. 82-83. *See also*, AWS, Sec. 6.3, pgs. 51-52, Figure 25. A process can be made up of subprocesses. *See, e.g.*, AWS, Sec. 8.1.3, pgs. 69-70 and Figure 30 (discussing the ability to "bundle" activities and subprocesses in a process); Sec. 11.3, pgs. 93-94 (noting that subprocesses can make up parts of processes) At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process.

Claim 52	
52. A method as in claim 51 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	AWS notes that the audit trail records can include information such as "time/date workitems were assigned; which user IDs they were assigned to; when and who started the workitem; when the workitem completed; if/when a notification item was generated because the allowed duration time was exceeded." AWS, Sec. 10.2, pgs. 82-83. *See also*, AWS, Sec. 6.3, pgs. 51-52; Figure 25. Thus, AWS discloses that the original message data can be, among other things, date data or time data.
Claim 53	
53. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	AWS notes that the audit trail records can include information such as "the process instance name" (i.e., the process identifier), a description of the object for which the status change is being recorded (which description is associated with the full container and the data contained therein) along with actual object attributes of such object, "time/date workitems were assigned; which user IDs they were assigned to; when and who started the workitem; when the workitem completed; if/when a notification item was generated because the allowed duration time was exceeded." AWS, Sec. 10.2, pgs. 82-83. *See also*, AWS, Sec. 6.3, pgs. 51-52, Figure 25.
Claim 54	
54. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	AWS notes that the audit trail records can include information such as "the process instance name" (*i.e.*, the process identifier), a description of the object for which the status change is being recorded (which description is associated with the full container and the data contained therein) along with actual object attributes of such object, time/date workitems were assigned; when the workitem completed; etc. AWS, Sec. 10.2, pgs. 82-83. *See also*, AWS, Sec. 6.3, pgs. 51-52, Figure 25.
Claim 55	
55. A method as in claim 51 further comprising providing the status of a process by providing access to said central message repository.	At Sec. 10.3.1, pg. 85, AWS notes that monitoring, analysis and reporting tools/programs can access the data stored in the data store. *See also*, Figure 35. AWS also describes the use of certain monitoring tools to "provide status information about all processes running in the system." AWS, Sec. 10.4.1; *See also,* AWS, 10.4.2, pg. 89-91 and Figure 36-39.

	"Using the audit trail information, one can obtain the status of every process instance in the FlowMark system." AWS, Sec. 10.2, pgs. 82-83.
Claim 57	
57. A method as in claim 51 further comprising updating said transaction record.	As noted at Sec. 10.2, pgs. 82-83 of AWS, the audit trail records can contain process information, including the time and date of process completion. *See also,* AWS, Sec. 10.3.1, pg. 85; Figure 35; and AWS, Sec. 10.3, pgs. 84-85.
Claim 58	
58. A method as in claim 57 further comprising updating said transaction record by:	
providing, through a second monitoring message, a second original message data to said transaction record; and,	As noted at pg. 126 of AWS, a process is a series of activities to achieve a desired result. At Sec. 6, pg. 49, AWS describes the use of workflow-enabled applications in the FlowMark system. Specifically, it notes that the applications necessary for each activity in a process can store newly generated data in an output container, so that FlowMark can send this information to other activities in the process. *See*, Claim 51, above.
populating said transaction record with said second original message data provided by said second monitoring message.	*See*, Claim 51, above.
Claim 59	
59. A method as in claim 51 further comprising completing a process.	As noted at Sec. 10.2, pgs. 82-83 of AWS, the audit trail records can contain process information, including the time and date of process completion. Further, at Sec. 10.4.1, pg. 87, AWS notes that the workflow monitor could be used for process termination.
Claim 60	
60. A method as in claim 51 further comprising completing said transaction record.	As noted at Sec. 10.2, pgs. 82-83 of AWS, the audit trail records can contain process information, including the time and date of process completion.

	Further, at Sec. 10.4.1, pg. 87, AWS notes that the workflow monitor could be used for process termination.
Claim 61	
61. A method as in claim 51 further comprising aborting a process.	As noted at Sec. 10.2, pgs. 82-83 of AWS, the audit trail records can contain process information, including the time and date of process completion. Further, at Sec. 10.4.1, pg. 87, AWS notes that the workflow monitor could be used for process termination.
Claim 62	
62. A method as in claim 61 further comprising providing, in said transaction record, an indication that the process has been aborted.	As noted at Sec. 10.2, pgs. 82-83 of AWS, The audit trail records can contain process information, including the date and time of process completion. Further, at Sec. 10.4.1, pg. 87, AWS notes that the workflow monitor could be used for process termination.
Claim 63	
63. A central message repository created by the method of claim 51.	*See,* Claim 51, above.
Claim 64	
64. A transaction record created by the method of claim 51.	*See,* Claim 51, above.
Claim 65	
65. A method as in claim 51 wherein said process is a simulated process.	At Sec. 13.3, pgs. 109-111, AWS discusses the use of performance and capacity testing for the FlowMark system. AWS specifically discusses the use of test applications to start process instances and run them to near end, so that database size can be measured. At pg. 110, AWS also suggests loading data containers with "dummy" data for such testing.
Claim 66	
66. A method as in claim 51 wherein said sub process is a simulated sub process.	*See,* Claim 65, above. At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process. Further, at Sec. 11.3, pgs. 93-94, AWS notes that, since subprocesses will exist for parts of the processes to be implemented by the FlowMark system, the subprocess information needs to be taken into account when calculating volume

	information for server assessment.
Claim 67	
67. A method as in claim 51 wherein said original message data is simulated original message data.	At Sec. 13.3, pgs. 109-111, AWS discusses the use of performance and capacity testing for the FlowMark system. AWS specifically discusses the use of test applications to start process instances and run them to near end, so that database size can be measured. At pg. 110, AWS also suggests loading data containers with "dummy" data for such testing.
Claim 68	
68. A method as in claim 51 further comprising providing the status of a sub process by providing access to said central message repository.	At Sec. 10.3.1, pg. 85, AWS notes that monitoring, analysis and reporting tools/programs can access the data stored in the data store. *See also*, Figure 35, AWS, Sec. 10.4; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process.
Claim 69	
69. A method as in claim 51 further comprising providing the status of an activity by providing access to said central message repository.	At Sec. 10.3.1, pg. 85, AWS notes that monitoring, analysis and reporting tools/programs can access the data stored in the data store. *See also*, Figure 35, AWS, Sec. 10.4; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the number of workitems stacking up in each activity.
Claim 70	
70. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See*, Claim 51, above.
monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	*See,* Claims 51 and 58, above. A process can be made up of subprocesses, which can be made up of activities. *See, e.g.*, AWS, Sec. 8.1.3, pgs. 69-70 and Figure 30 (discussing the ability to "bundle" activities and subprocesses in a process); Sec. 11.3, pgs. 93-94 (noting that subprocesses can make up parts of processes).

	At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process. *See also,* AWS, Sec. 10.3.1, pg. 85; Figure 35; Sec. 10.4; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the number of workitems stacking up in each activity.
transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See*, Claim 51, above.
storing said original message data from said first activity, in a transaction record in said central message repository;	*See,* Claim 51, above.
transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See,* Claims 51 and 58, above.
storing said original message data from said second activity, in said transaction record in said central message repository;	*See,* Claims 51 and 58, above.
wherein said original message data comprises the status of said activity.	*See,* Claims 1, 51 and 69, above.
Claim 71	
71. A method as in claim 70 further comprising determining the status of said sub process.	*See,* Claim 68, above.

Claim 72	
72. A method as in claim 70 wherein said original message data from each of said first and second activities comprises an activity specific set of data.	According to AWS, the audit trail records can contain information provided by the message-based application in the output container, including the description of the object for which the status change is being recorded (which description is associated with the full container and the data contained therein) along with activity completion time/date, etc. AWS, Sec. 10.2, pgs. 82-83. *See also*, AWS, Sec. 6.3, pgs. 51-52, Figure 25.
Claim 75	
75. A method as in claim 70 further comprising reviewing said central message repository.	At Sec. 10.3.1, pg. 85, AWS notes that monitoring, analysis and reporting tools/programs can access the data stored in the data store. *See also*, AWS, Figure 35; Sec. 10.4; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. Further, at Sec. 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process.
Claim 76	
76. A method as in claim 75 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.	At Sec. 10.3.1, pg. 85, AWS notes that monitoring, analysis and reporting tools/programs can access the data stored in the data store. *See also*, AWS, Figure 35; Sec. 10.4; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. Further, at Sec. 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process. In addition to status information about all of the processes running in the system, the workflow monitor can display process and activity cycle times. *See*, AWS, Figure 36. AWS also describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 of AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal. Figure 38 also shows the business monitor tracking revenue generated over a set time period, demonstrating performance of a selected employee over a selected time period (the screen shot depicted in Figure 38 is titled "Performance Applet – Netscape).

Claim 77	
77. A method as in claim 70 further comprising distributing process progress information in real time.	At Sec. 10.3.1, pg. 85, AWS notes that monitoring, analysis and reporting tools/programs can access the data stored in the data store. *See also*, AWS, Figure 35; Sec. 10.4; Sec. 10.4.1 – 10.4.2, pgs. 87-91; and Figures 36-39. Further, at Sec. 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process. In addition to status information about all of the processes running in the system, the workflow monitor can display process and activity cycle times. *See*, AWS, Figure 36. As noted at Sec. 10.4.2, pg. 89 of AWS, the purpose of the business monitor is to make the information "available to the executives on a real-time basis." Further, the workflow monitor gives users the ability to set triggers and alarms for conditions that might arise during the processing of the workflow tasks. For example, a trigger or alarm might be set for tracking when overall processing times are running too long or working times for particular activities are too long. AWS, Sec. 10.4.1, pg. 87.
Claim 78	
78. A method as in claim 70 further comprising distributing said process progress information through broadcasting.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87. *See*, Claim 77, above.
Claim 79	
79. A method as in claim 70 further comprising distributing said process progress information through the Internet.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87. *See*, Claim 77, above.

Claim 80	
80. A method as in claim 70 further comprising analyzing said central message repository in order to determine a process trend.	At 10.4.1, pg. 87, AWS describes the use of a workflow monitor to monitor the subprocesses of an overall process. In addition to status information about all of the processes running in the system, the workflow monitor can display process and activity cycle times. *See*, AWS, Figure 36. AWS also describes the use of a business monitor to allow a user to review information from the audit trail data store to help track business goals, including time slice information, monthly information, trend information and performance information. *See,* AWS, Figures 38 and 39; Sec. 10.4.2, pgs. 89-91. As shown on Figure 39 from AWS, actual numbers from the audit trail records in the audit trail data store can be compared against the goals for such processes and certain data can be highlighted in red, indicating a negative tracking result against the targeted goal.
Claim 81	
81. A method as in claim 80 wherein said process trend is selected from the group consisting of: time between subprocesses: variances by customer, variances by order amount, bottlenecks and seasonal variations.	*See*, Claim 80, above. Additionally, as shown on Figure 36 at pg. 88 of AWS, the workflow monitor can provide information concerning arrival, start and completion times, as well as times for work duration and overall elapsed cycle time. The primary goal of the workflow monitor is to provide status information about all processes running in the system. This includes the number of processes in the system, the number of workitems stacking up in each activity, process and activity cycle times, and the number of processes that are overdue. *See*, AWS, Sec. 10.4.1, pgs. 87-88; *See also,* Figure 39. Further, AWS indicates that the workflow monitor can provide a user with an ability to establish triggers or alarms tied to, among other things, bottlenecks (*i.e.*, work in a particular process step is stacking up too high.). AWS, Sec. 10.4.1, pg. 87.
Claim 82	
82. A method as in claim 81 wherein orders may be accelerated as a result of said analysis.	AWS indicates that the workflow monitor would allow a user to transfer or redistribute workitems. AWS, Sec. 10.4.1, pg. 87. For example, if a workitem for a given process instance is stalled because the worker responsible for such workitem is gone, the workitem can be transferred to another worker or supervisor for completion. As shown on Figure 36 on pg. 88, the workflow monitor is able to show all of the process that are overdue and all of the workitems that are stacking up, allowing a supervisor to address such issues, including redistributing or transferring such workitems (example

	shown is labeled "Product Assembly").
Claim 88	
88. A method as in claim 70 further comprising distributing said process progress information through an intranet.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87. *See*, Claim 77, above.
Claim 89	
89. A method as in claim 70 further comprising distributing said process progress information through an extranet.	AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Through the use of Java and various filters and security options, the monitors described by AWS, allow the system to provide status information to external entities, including external customers, other business units or outside vendors and business partners. AWS, Sec. 10.4.1, pg. 87. *See*, Claim 77, above.
Claim 90	
90. An apparatus for use in an asynchronous messaging environment in a communications system or systems wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 1, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 1, above.

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See*, Claim 1, above.
means for retrieving information from the central message repository.	*See*, Claim 1, above.
Claim 91	
91. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about an order from the central message repository.	*See*, Claim 2, above.
Claim 92	
92. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about a customer from the central message repository.	*See*, Claim 3, above.

Claim 93	
93. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving process efficiency information from the central message repository.	*See*, Claim 4, above.
Claim 94	
94. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving time slice information from the central message repository.	*See*, Claim 5, above.
Claim 95	
95. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository.	*See*, Claim 6, above.
Claim 96	
96. An apparatus as in claim 95 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See*, Claim 7, above.

Claim 97	
97. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge trends from the central message repository.	*See*, Claim 8, above.
Claim 98	
98. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge performance from the central message repository.	*See*, Claim 9, above.
Claim 99	
99. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge trends.	*See*, Claim 10, above.
Claim 100	
100. An apparatus as in claim 99 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See*, Claim 11, above.

Claim 101	
101. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge performance.	*See*, Claim 12, above.
Claim 102	
102. An apparatus as in claim 101 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.	*See*, Claim 13, above.
Claim 103	
103. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about process efficiency.	*See*, Claim 14, above.
Claim 104	
104. An apparatus as in claim 90 wherein said original message data comprises a data field.	*See*, Claim 15, above.
Claim 105	
105. An apparatus as in claim 104 wherein said data field is path specific.	*See*, Claim 16, above.

Claim 106	
106. An apparatus as in claim 90 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process an sub process, or process, and wherein said action provides data which is used as a data field within said monitoring message.	*See*, Claim 17, above.
Claim 107	
107. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information in order to measure, monitor and/or track enterprise communications and processes.	*See*, Claim 18, above.
Claim 109	
109. An apparatus as in claim 90 wherein said means for retrieving said information from the central message repository provides an alternative to means for retrieving original message data from an application that had originally generated said original message data.	*See*, Claim 20, above.

Claim 111	
111. An apparatus as in claim 90 further comprising means for providing a duplicate of said central message repository.	*See*, Claim 22, above.
Claim 112	
112. An apparatus as in claim 111 further comprising means for providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.	*See*, Claim 23, above.
Claim 113	
113. An apparatus as in claim 90 further comprising means for providing a mirror repository of said central message repository.	*See*, Claim 24, above.
Claim 114	
114. An apparatus as in claim 113 wherein said mirror repository is used by an external entity.	*See*, Claim 25, above.
Claim 115	
115. An apparatus as in claim 113 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.	*See*, Claim 26, above.

Claim 116	
116. An apparatus as in claim 113 wherein, if more than one minor repository is used, said repositories are combined.	*See*, Claim 27, above.
Claim 117	
117. An apparatus as in claim 113 wherein said mirror repository is used either in addition to or instead of said central message repository.	*See*, Claim 28, above.
Claim 118	
118. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.	*See*, Claim 29, above.
Claim 119	
119. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.	*See*, Claim 30, above.
Claim 120	
120. An apparatus as in claim 119 wherein said messages comprise error messages.	*See*, Claim 31, above.

Claim 121	
121. An apparatus as in claim 119 wherein said messages comprise event messages.	*See*, Claim 32, above.
Claim 122	
122. An apparatus as in claim 119 wherein said messages comprise exception messages.	*See*, Claim 33, above.
Claim 123	
123. An apparatus as in claim 119 wherein said messages comprise trigger messages.	*See*, Claim 34, above.
Claim 124	
124. An apparatus as in claim 119 wherein said messages comprise threshold messages.	*See*, Claim 35, above.
Claim 125	
125. An apparatus as in claim 119 wherein said messages comprise flagged indicators.	*See*, Claim 36, above.
Claim 126	
126. An apparatus as in claim 119 wherein said messages comprise specially designated messages.	*See*, Claim 37, above.

Claim 127	
127. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.	*See*, Claim 38, above.
Claim 128	
128. An apparatus as in claim 127 wherein said means for retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.	*See*, Claim 39, above.
Claim 129	
129. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises means for permitting a user to retrieve information over a corporate extranet.	*See*, Claim 40, above.
Claim 130	
130. An apparatus as in claim 90 further comprising means for providing a report.	*See*, Claim 41, above.

Claim 133	
133. An apparatus as in claim 129 wherein said user comprises a customer, and said means for permitting a user to retrieve information over a corporate extranet further comprises means for permitting said customer to retrieve information concerning said customer's orders.	*See*, Claim 44, above.
Claim 135	
135. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 46, above.
means for providing, though a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 46, above.

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See*, Claim 46, above.
means for distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	*See*, Claim 46, above.
Claim 136	
136. An apparatus as in claim 135 wherein said means for distributing information comprises a means for distributing information selected from the group consisting of an intranet, an extranet, and the Internet.	*See*, Claim 47, above.
Claim 137	
137. An apparatus as in claim 136 wherein said information is distributed to business partners.	*See*, Claim 48, above.

Claim 138	
138. An apparatus as in claim 137 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.	*See*, Claim 49, above.
Claim 139	
139. An apparatus as in claim 136 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.	*See*, Claim 50, above.
Claim 140	
140. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 51, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 51, above.
means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,	*See*, Claim 51, above.

means for updating said transaction record;	*See*, Claim 57, above.
wherein said original message data comprises stares information of a process and/or sub process.	*See*, Claim 51, above.
Claim 141	
141. An apparatus as in claim 140 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	*See*, Claim 52, above.
Claim 142	
142. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	*See*, Claim 53, above.
Claim 143	
143. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	*See*, Claim 54, above.

Claim 144	
144. An apparatus as in claim 140 further comprising updating said transaction record by:	*See*, Claim 58, above.
means for providing, through a second monitoring message, a second original message data to said transaction record; and,	*See*, Claim 58, above.
means for populating said transaction record with said second original message data provided by said second monitoring message.	*See*, Claim 58, above.
Claim 145	
145. An apparatus as in claim 140 further comprising completing a process.	*See*, Claim 59, above.
Claim 146	
146. An apparatus as in claim 140 further comprising completing said transaction record.	*See*, Claim 60, above.
Claim 147	
147. An apparatus as in claim 140 further comprising aborting a process.	*See*, Claim 61, above.
Claim 148	
148. An apparatus as in claim 140 further comprising providing, in said transaction record, an indication that the record has been abandoned.	*See*, Claim 62, above.

Claim 149	
149. A central message repository created by the method of claim 140.	*See*, Claim 63, above.
Claim 150	
150. A transaction record created by the method of claim 140.	*See*, Claim 64, above.
Claim 151	
151. An apparatus as in claim 140 wherein said process is a simulated process.	*See*, Claim 65, above.
Claim 152	
152. An apparatus as in claim 140 wherein said sub process is a simulated sub process.	*See*, Claim 66, above.
Claim 153	
153. An apparatus as in claim 140 wherein said original message data is simulated original message data.	*See*, Claim 67, above.
Claim 154	
154. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 70, above.

means for monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	*See*, Claim 70, above.
means for transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See*, Claim 70, above.
means for storing said original message data from said first activity, in a transaction record in said central message repository;	*See*, Claim 70, above.
means for transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See*, Claim 70, above.
means for storing said original message data from said second activity, in said transaction record in said central message repository;	*See*, Claim 70, above.
wherein said original message data comprises the status of said activity.	*See*, Claim 70, above.

Claim 155	
155. An apparatus as in claim 154 further comprising determining the status of said sub process.	*See*, Claim 71, above.
Claim 156	
156. An apparatus as in claim 154 wherein said original message data from each of said first and second activities comprises an activity specific set of data.	*See*, Claim 72, above.
Claim 159	
159. An apparatus as in claim 155 further comprising means for reviewing said central message repository.	*See*, Claim 75, above.
Claim 160	
160. An apparatus as in claim 159 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.	*See*, Claim 76, above.

Claim 161	
161. An apparatus as in claim 155 further comprising distributing process progress information in real time.	*See*, Claim 77, above.
Claim 162	
162. An apparatus as in claim 161 further comprising distributing said process progress information through broadcasting.	*See*, Claim 78, above.
Claim 163	
163. An apparatus as in claim 161 further comprising distributing said process progress information through the Internet.	*See*, Claim 79, above.
Claim 164	
164. An apparatus as in claim 155 further comprising analyzing said central message repository in order to determine a process trend.	*See*, Claim 80, above.
Claim 165	
165. An apparatus as in claim 154 wherein said process trend is selected from the group consisting of: time between sub-processes, variances by customer, variances by order amount, bottlenecks and seasonal variations.	*See*, Claim 81, above.

Claim 166	
166. An apparatus as in claim 165 wherein orders may be accelerated as a result of said analysis.	*See*, Claim 82, above.
Claim 172	
172. An apparatus as in claim 155 further comprising distributing said process progress information through an intranet.	*See*, Claim 88, above.
Claim 173	
173. An apparatus as in claim 155 further comprising distributing said process progress information through an extranet.	*See*, Claim 89, above.

APPENDIX "C-2"

CLAIMS CHART MAPPING OF

ADVANCED WORKFLOW SOLUTIONS

IN VIEW OF

LEYMANN '111

TO THE CLAIM LIMITATIONS OF CLAIMS 56, 68, 73, 74, 85, 86, 157, 158, 169, AND 170 OF THE '674 PATENT

Claim Language of '674 Patent	Portions of Leymann '111 That Render the Limitation Obvious Under 35 U.S.C. § 103(a) In View of AWS
Claim 56	
56. A method as in claim 51 further comprising adding, to said monitoring message, data other than said original message data.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 and 51 as set out in the claims chart attached as C-1), in view of Leymann '111. Specifically, Leymann '111 teaches the use of materialization/dematerialization programs on the data contained in the input and output containers which are used to pass data back and forth between the workflow system and the applications performing the activities that make up a process. Specifically, Leymann '111 teaches the use of a set of programs on the data contained in the output container once it is received from the application performing the activity. Leymann '111, col. 5, line 29 to col. 6, line 27.[10] As described by Leymann '111, the results that are produced by the application performing the activity are put into an output container which is associated with such activity. Leymann '111, col. 9, lines 1-3. Once the application returns the associated output container to the workflow management system, the workflow management system can invoke a dematerialization chain, which is an ordered group of programs intended to act on the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8. The programs can substitute or add data into the container, including, for example, adding references to data located outside of the container, or replacing references in the output container with the actual data associated with the reference. The programs can use other sources of data for enrichment of the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8; col. 14, line 63 to col. 15, line 12.
Claim 68	
68. A method as in claim 51 further comprising providing the status of a sub process by providing access to said central message repository.	This claim was previously addressed in preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 and 18 in preceding claim chart C-1), in view of Leymann '111. Specifically, Leymann '111 discloses that a subprocess is a set of

[10] It would have been obvious to combine AWS and Leymann '111, as both references discuss the FlowMark workflow management system. *See*, AWS at pg. vii; Leymann '111, col.7, lines 15-16.

	activities that are defined separately as a regular process. When used within a process, it is treated as a "process activity" in that, it is invoked when the "process activity" is started and, at its completion, it returns the results generated through the output container associated with such process activity. *See*, Leymann '111, col. 8, lines 55-61, col. 9, lines 1-3, and col. 10, line 67 to col. 11, line 11.
Claim 73	
73. A method as in claim 70 wherein said first monitoring message further comprises altered original message data.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claim 1 in preceding claim chart C-1), in view of Leymann '111. Specifically, Leymann '111 teaches the use of materialization/dematerialization programs on the data contained in the input and output containers which are used to pass data back and forth between the workflow system and the applications performing the activities that make up a process. Specifically, Leymann '111 teaches the use of a set of programs on the data contained in the output container once it is received from the application performing the activity. Leymann '111, col. 5, line 29 to col. 6, line 27. As described by Leymann '111, the results that are produced by the application performing the activity are put into an output container which is associated with such activity. Leymann '111, col. 9, lines 1-3. Once the application returns the associated output container to the workflow management system, the workflow management system can invoke a dematerialization chain, which is an ordered group of programs intended to act on the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8. The programs can substitute or add data into the container, including, for example, adding references to data located outside of the container, or replacing references in the output container with the actual data associated with the reference. The programs can use other sources of data for enrichment of the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8; col. 14, line 63 to col. 15, line 12. The dematerialization programs can also alter the data in the output container by encrypting it or compressing it. Specifically, as shown on FIGURE 2, programs (221) and (222) compress and encrypt the data in the output container after the application performing the activity sends the output container to the workflow management system. Leymann '111, col. 13, line 58 to col. 14, line 8; FIGURE 2.

Claim 74	
74. A method as in claim 70 wherein said first monitoring message further comprises data added to said original message data.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claim 1 in preceding claim chart C-1), in view of Leymann '111. Specifically, Leymann '111 teaches the use of materialization/dematerialization programs on the data contained in the input and output containers which are used to pass data back and forth between the workflow system and the applications performing the activities that make up a process. Specifically, Leymann '111 teaches the use of a set of programs on the data contained in the output container once it is received from the application performing the activity. Leymann '111, col. 5, line 29 to col. 6, line 27. As described by Leymann '111, the results that are produced by the application performing the activity are put into an output container which is associated with such activity. Leymann '111, col. 9, lines 1-3. Once the application returns the associated output container to the workflow management system, the workflow management system can invoke a dematerialization chain, which is an ordered group of programs intended to act on the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8. The programs can substitute or add data into the container, including, for example, adding references to data located outside of the container, or replacing references in the output container with the actual data associated with the reference. The programs can use other sources of data for enrichment of the data contained in the output container. Leymann '111, col. 13, line 51 to col. 14, line 8; col. 14, line 63 to col. 15, line 12.
Claim 85	
85. A method as in claim 70 wherein said second monitoring message further comprises altered original message data.	*See*, Claim 73, above.

Claim 86	
86. A method as in claim 70 wherein said second monitoring message further comprises data added to said original message data.	*See,* Claim 74, above
Claim 157	
157. An apparatus as in claim 155 wherein said first monitoring message further comprises altered original message data.	*See*, Claim 73, above.
Claim 158	
158. An apparatus as in claim 155 wherein said first monitoring message further comprises data added to said original message data.	*See*, Claim 74, above.
Claim 169	
169. An apparatus as in claim 155 wherein said second monitoring message further comprises altered original message data.	*See*, Claim 85, above.
Claim 170	
170. An apparatus as in claim 155 wherein said second monitoring message further comprises data added to said original message data.	*See*, Claim 86, above.

APPENDIX "C-3"

CLAIMS CHART MAPPING OF

ADVANCED WORKFLOW SOLUTIONS

IN VIEW OF

LEYMANN '633

TO THE CLAIM LIMITATIONS OF CLAIMS 42, 43, 45, 52-55, 57, 58, 77, 78, 84, 87, 131, 132, 134, 141-144, 161, 162, 168, AND 171 OF THE '674 PATENT

Claim Language of '674 Patent	Portions of Leymann '633 That Render the Limitation Obvious Under 35 U.S.C. § 103(a) In View of AWS
Claim 42	
42. A method as in claim 41 further comprising providing said report through an XML link to said central message repository.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS, in view of Leymann '633. AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. Sec. 10.4, pg. 87. AWS further discloses that the workflow monitor can provide a user with an ability to establish triggers or alarms, which can be used to notify the user upon the occurrence of certain events or conditions (*e.g.*, work in a particular process step is stacking up too high.). AWS, Sec. 10.4.1, pg. 87. Leymann '633 teaches the use of a subscription means as part of or as an extension of the database containing the audit trail records. The subscription means allows users to "subscribe" to certain events, records or data and to establish triggers to notify them upon the occurrence of an event, including the progress of a process. The appropriate action to notify the subscriber is defined by the user in establishing the trigger. Any desired notification mechanism can be implemented, which would include the use of an XML link to the audit trail data store. Leymann '633, col. 3, lines 8-25; col. 10, lines 20-67; col. 11, lines 42-62.[11]
Claim 43	
43. A method as in claim 42 further comprising displaying said report.	*See,* Claim 42, above. Figures 36-39 show various screen shots of reports being displayed by the workflow monitor. AWS, Sec. 10.4.1-10.4.2, pgs. 87-91.
Claim 45	
45. A method as in claim 43 wherein said display provides an option to drill down through said display for further detail.	*See,* Claim 42, above. As can be seen from the screen shots from Figures 36-39, the user is able to obtain additional information by, for example, clicking on additional tabs. *See,* AWS, Sec. 10.4.1-10.4.2, pgs. 87-91.

[11] It would have been obvious to combine AWS and Leymann '633, as both references discuss the FlowMark workflow management system. *See*, AWS at pg. vii; Leymann '633 at col.4, lines 35-37.

Claim 52	
52. A method as in claim 51 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 and 3 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 teaches that the main purpose of the audit trail is to capture the history of the execution of a process instance. Leymann '633 further notes that "[m]ost workflow management systems store the audit trail directly into a relational database. The audit trail contains a record for each major event, such as the start or termination of a process or an activity. Leymann '633, col. 9, lines 21-39. Leymann '633 further teaches that the audit trail records can have a "timestamp field," containing the date and time of the event being recorded, and a "user field," which provides a mechanism for storing in the audit trail user data that is associated with the given process instance. Such "user data" could include a "customer number or the amount of a loan." Leymann '633, col. 9, line 42 to col. 10, line 15; FIGURE 1.
Claim 53	
53. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 and 4 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 discloses that the audit trail records can contain the following fields: (i) Timestamp (as noted above); (ii) Process Instance Name (an identification of the process instance at issue (see AWS description for this claim)); (iii) Activity Name (identification of the activity within the process model that is at issue); (iv) Associated Object Identifier (identifies the object associated with the event being recorded); and (v) "User" (contains user data associated with the process instance, such as customer number or amount of a loan). Leymann '633, col. 9, line 42 to col. 10, line 15; FIGURE 1.

Claim 54	
54. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	*See,* Claim 53, above.
Claim 55	
55. A method as in claim 51 further comprising providing the status of a process by providing access to said central message repository.	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1, 6 and 51 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 teaches the use of a subscription means capable of accessing an audit trail stored within a database, said audit trail encompassing a multitude of audit trail records representing events that occurred during the execution of a workflow management system. The subscription means allows users to "subscribe" to certain events in the audit trail, such that they are notified should such events occur in any of the audit trail records that are being stored in the database. Leymann '633, col. 3, lines 8-25. All information about the current state of a process is stored in the database maintained by the server. Leymann '633, col. 9, lines 4-6.
Claim 57	
57. A method as in claim 51 further comprising updating said transaction record.	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 and 8 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 teaches that triggers can be set to notify a user upon the occurrence of an "update" to a table or entry in a table. Leymann '633, col. 10, lines 20-67.

Claim 58	
58. A method as in claim 57 further comprising updating said transaction record by:	
providing, through a second monitoring message, a second original message data to said transaction record; and,	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1, 8 and 9 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 notes that triggers can be set to notify a user upon the occurrence of an "update" to a table or entry in a table. Leymann '633, col. 10, lines 20-67.
populating said transaction record with said second original message data provided by said second monitoring message.	*See,* above discussion for previous limitation.
Claim 77	
77. A method as in claim 70 further comprising distributing process progress information in real time.	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1, 22 and 29 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 teaches the use of a subscription means as part of or as an extension of the database containing the audit trail records. The subscription means allows users to "subscribe" to certain events, records or data and to establish triggers to notify them (*e.g.*, by e-mail) upon the occurrence of an event, including the progress of a process. Leymann '633, col. 3, lines 8-25; col. 10, lines 20-67; col. 11, lines 42-62.

Claim 78	
78. A method as in claim 70 further comprising distributing said process progress information through broadcasting.	This claim was previously addressed in the preceding claim chart C-1, where it was demonstrated that the claim was anticipated under 35 U.S.C. § 102 by AWS. In addition to being anticipated by AWS, this claim is also rendered obvious under 35 U.S.C. § 103(a) by AWS (as applied to claims 1 22, 29 and 30 in claim chart C-1), in view of Leymann '633. Specifically, Leymann '633 teaches the use of a subscription means as part of or as an extension of the database containing the audit trail records. The subscription means allows users to "subscribe" to certain events, records or data and to establish triggers to notify them upon the occurrence of an event, including the progress of a process. The appropriate action to notify the subscriber is defined by the user in establishing the trigger. Any desired notification mechanism can be implemented, which would include the use of broadcasting. Leymann '633, col. 3, lines 8-25; col. 10, lines 20-67; col. 11, lines 42-62.
Claim 84	
84. A method as in claim 70 further comprising providing a report via an XML link to said central message repository.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS, in view of Leymann '633. AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. Sec. 10.4, pg. 87. AWS further discloses that the workflow monitor can provide a user with an ability to establish triggers or alarms, which can be used to notify the user upon the occurrence of certain events or conditions (*e.g.*, work in a particular process step is stacking up too high.). AWS, Sec. 10.4.1, pg. 87. Leymann '633 teaches the use of a subscription means as part of or as an extension of the database containing the audit trail records. The subscription means allows users to "subscribe" to certain events, records or data and to establish triggers to notify them upon the occurrence of an event, including the progress of a process. The appropriate action to notify the subscriber is defined by the user in establishing the trigger. Any desired notification mechanism can be implemented, which would include the use of an XML link to the audit trail data store. Leymann '633, col. 3, lines 8-25; col. 10, lines 20-67; col. 11, lines 42-62.

Claim 87	
87. A method as in claim 70 further comprising distributing said process progress information through Wireless Application Protocol.	This claim is rendered obvious under 35 U.S.C. § 103(a) by AWS (as discussed above and as applied to claims 1, 22, and 29 in the preceding claims chart C-1), in view of Leymann '633. AWS discloses that the monitor tool was developed in Java to allow for functionality through the Internet as well as enterprise networks. AWS, Sec. 10.4, pg. 87. Moreover, AWS discloses that FlowMark allows mobile or "disconnected users" to perform activities while disconnected from the workflow management system, allowing the user to synchronize when reconnected to the network. Sec. 8.2.3, pgs. 73-74. Leymann '633 teaches the use of a subscription means as part of or as an extension of the database containing the audit trail records. The subscription means allows users to "subscribe" to certain events, records or data and to establish triggers to notify them upon the occurrence of an event, including the progress of a process. The appropriate action to notify the subscriber is defined by the user in establishing the trigger. Any desired notification mechanism can be implemented, which would include the use of a communication utilizing the Wireless Access Protocol. Leymann '633, col. 3, lines 8-25; col. 10, lines 20-67; col. 11, lines 42-62.
Claim 131	
131. An apparatus as in claim 130 further comprising means for providing said report through an XML link to said central message repository.	*See*, Claim 42, above.
Claim 132	
132. An apparatus as in claim 130 further comprising means for displaying said report.	*See*, Claim 43, above.

Claim 134	
134. An apparatus as in claim 132 wherein said means for displaying said report provides an option to drill down through a display generated by said means for displaying said report for further detail.	*See*, Claim 45, above.
Claim 141	
141. An apparatus as in claim 140 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.	*See*, Claim 52, above.
Claim 142	
142. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.	*See*, Claim 53, above.
Claim 143	
143. An apparatus as in claim 140 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.	*See*, Claim 54, above.

Claim 144	
144. An apparatus as in claim 140 further comprising updating said transaction record by:	*See*, Claim 58, above.
means for providing, through a second monitoring message, a second original message data to said transaction record; and,	
means for populating said transaction record with said second original message data provided by said second monitoring message.	
Claim 161	
161. An apparatus as in claim 155 further comprising distributing process progress information in real time.	*See*, Claim 77, above.
Claim 162	
162. An apparatus as in claim 161 further comprising distributing said process progress information through broadcasting.	*See*, Claim 78, above.
Claim 168	
168. An apparatus as in claim 155 further comprising providing a report via an XML link to said central message repository.	*See*, Claim 84, above.

Claim 171	
171. An apparatus as in claim 155 further comprising distributing said process progress information through Wireless Application Protocol.	*See*, Claim 87, above.

APPENDIX "D"

CLAIMS CHART MAPPING OF

BUHANNIC

TO THE CLAIM LIMITATIONS OF CLAIMS 1, 46, 51, 70, 135, 140 AND 154 OF THE '674 PATENT

Claim Language of '674 Patent	Portion of Production Workflow That Meets the Limitation
Claim 1	
1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	**Asynchronous Messaging Environment** At paragraph [0014] Buhannic describes a trade state processing system having a node including a message broker server coupled to the servers in the trade processing system. Paragraph [0014] specifies that the message broker server may be Java Message Service (JMS) compliant. The Java Message Service was a well-known asynchronous messaging service. **Original Message** Paragraph [0017] of Buhannic describes how the message broker server tracks messages between the servers to coordinate the trading of securities. The messages between the servers are original messages. **Original Message Data** Paragraph [0016] of Buhannic describes how each server can include status information for transaction in messages passed by that server. This status information is original message data.
providing, through a monitoring message, at least part of said original message data to a central message repository;	**Monitoring Message** At paragraph [0020], Buhannic discloses that, when a message related to a trade is received by the message broker server, the contents of the message are used to determine the status of a trade. The status of the trade is then updated in the centralized database. In order to update the centralized database, a message must be sent from the message broker server to the central database. The message from the message broker server to the central database is a monitoring message. **Central Message Repository** Paragraph [0022] of Buhannic describes the use of a centralized database to track the trade status through all phases of a trade process and among the disparate systems.

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and	**Transaction Record** Paragraph [0017] describes creating a record in the central database associated with a trade. The record may be associated with, for example, a transaction number. Buhannic at paragraphs [0017]-[0019]. The record is updated with the trade state as described at paragraph [0020]. The update to the record may occur, for example, by inserting the proper state between the applicable tags of the record. This record is a transaction record. When a trade request message is received, a state model, i.e. a dynamic record of the request, is created in centralized database 112 and a proper state is assigned to the record. Buhannic at paragraph [0017]. The trade state may be correlated to a transaction number or other indicator in the record. Buhannic at paragraphs [0017]-[0019]. The record can be constantly updated with the status of each trade between the various parties at any time. Buhannic at paragraph [0020]. Upon receipt of each subsequent message relating to a trade the message broker updates the trade state by inserting the proper state between the "state" tags in the XML child element. Buhannic at paragraph [0020] As discussed above, the status used to update the record in the centralized database 112 can be included in an original message sent from a server. Thus, Buhannic discloses the step of populating a record (a transaction record) in a centralized database (a central message repository) with data (original message data) from a message received by the message broker server relating to a given trade. **Status Information of an Activity, Sub Process or Process** Paragraph [0016] of Buhannic describes how each server can include status information for a transaction in messages passed by that server. The data (original message data) in each of the messages passed by these servers is used to determine a new status of the trade as discussed at paragraph [0020]. Thus, as described at paragraph [0022] the status of a trade can be tracked throughout all phases of the trade process and amongst the disparate system. Examples of such status information are given in paragraphs [0017]-[0019] and [0021] and include statuses

	such as "Registered", "Credit Approved", "Executed", etc.
retrieving information from the central message repository.	**Retrieving from the Central Message Repository** As described at paragraph [0022] of Buhannic, the status of a trade can be tracked throughout all phases of the trade process. This is done by retrieving the information, including status information, stored in the centralized database (a central message repository). *See,* paragraphs [0017]-[0020]. Moreover, it is inherent that data stored in a database is stored for subsequent retrieval.
Claim 46	
46. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See*, Claim 1, above.
providing, through a monitoring message, at least part of said original message data to a central message repository;	
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	
distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	**Distributing Information using a Real-Time Tool** Buhannic at paragraph [0015] described providing an API module for allowing external devices to query the database. The present state of the trade is stored in the database as noted in paragraphs [0010]

Claim 51	
51. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See*, Claim 1, above.
providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 1, above.
populating a transaction record in said central message repository with said original message data provided by said monitoring message;	*See*, Claim 1, above.
reviewing data collected in said transaction record;	*See*, Claim 1, above.
wherein said original message data comprises status information of a process and/or sub process.	**Process and/or Sub Process** Paragraph [0016] of Buhannic describes how each server can include status information for a transaction in messages passed by that server. The data (**original message data**) in each of the messages passed by these servers is used to determine a new status of the trade (**status of an activity**) as discussed at paragraph [0020]. Thus, as described at paragraph [0022] the status of a trade can be tracked throughout all phases of the trade process and amongst the disparate system. Examples of such status is given in paragraphs [0017]-[0019] and [0021] and include statuses such as "Registered", "Credit Approved", "Executed", etc.
Claim 70	
70. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:	*See,* Claim 1, above.

monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	Buhannic discloses that a process can be made up of multiple activities. *See e.g.*, FIG. 1, paragraphs [0020]-[0022]
transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See,* Claim 1, above.
storing said original message data from said first activity, in a transaction record in said central message repository;	*See,* Claim 1, above.
transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See*, above with respect to first activity and first monitoring message.
storing said original message data from said second activity, in said transaction record in said central message repository;	*See*, above with respect to first activity and first monitoring message.
wherein said original message data comprises the status of said activity.	*See,* Claim 1, above.
Claim 135	
135. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 46, above.

means for providing, though a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 46, above.
means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,	*See*, Claim 46, above.
means for distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.	*See*, Claim 46, above.
Claim 140	
140. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 51, above.
means for providing, through a monitoring message, at least part of said original message data to a central message repository;	*See*, Claim 51, above.
means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,	*See*, Claim 51, above.

means for updating said transaction record;	Buhannic at paragraph [0020] discloses updating the trade state by inserting the proper state between the "state" tags of the transaction record.
wherein said original message data comprises stares information of a process and/or sub process.	*See*, Claim 51, above.
Claim 154	
154. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:	*See*, Claim 70, above.
means for monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;	*See*, Claim 70, above.
means for transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;	*See*, Claim 70, above.
means for storing said original message data from said first activity, in a transaction record in said central message repository;	*See*, Claim 70, above.
means for transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,	*See*, Claim 70, above.

means for storing said original message data from said second activity, in said transaction record in said central message repository;	*See*, Claim 70, above.
wherein said original message data comprises the status of said activity.	*See*, Claim 70, above.

APPENDIX "E"

UNITED STATES PATENT NO. 7,603,674

US007603674B2

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

(10) **Patent No.: US 7,603,674 B2**
(45) **Date of Patent: *Oct. 13, 2009**

(54) **APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 272 days.

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

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(51) **Int. Cl.**
G06F 13/00 (2006.01)

(52) **U.S. Cl.** **719/313**; 709/217; 707/1; 707/10

(58) **Field of Classification Search** 717/103; 705/9; 709/231, 227, 202, 206, 217; 719/314, 719/315, 316, 313; 707/3, 10, 1
See application file for complete search history.

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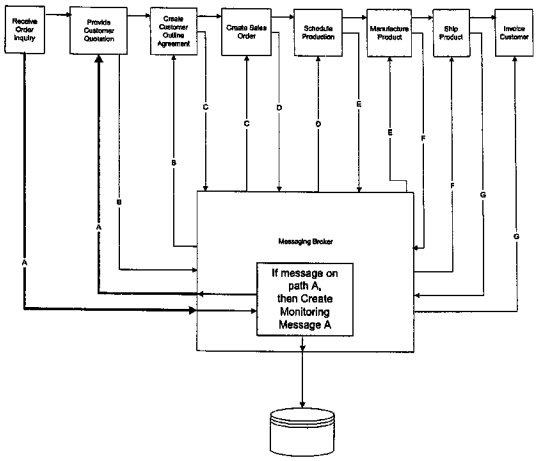
Primary Examiner—Andy Ho

(57) **ABSTRACT**

The present invention comprises apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes. A central message repository or database is constructed, comprised of monitoring messages sent from process messaging systems. The database may then be accessed or queried as desired. A simulation tool assists in reviewing present and proposed processes and subprocesses before modifying existent systems or creating new systems.

173 Claims, 6 Drawing Sheets



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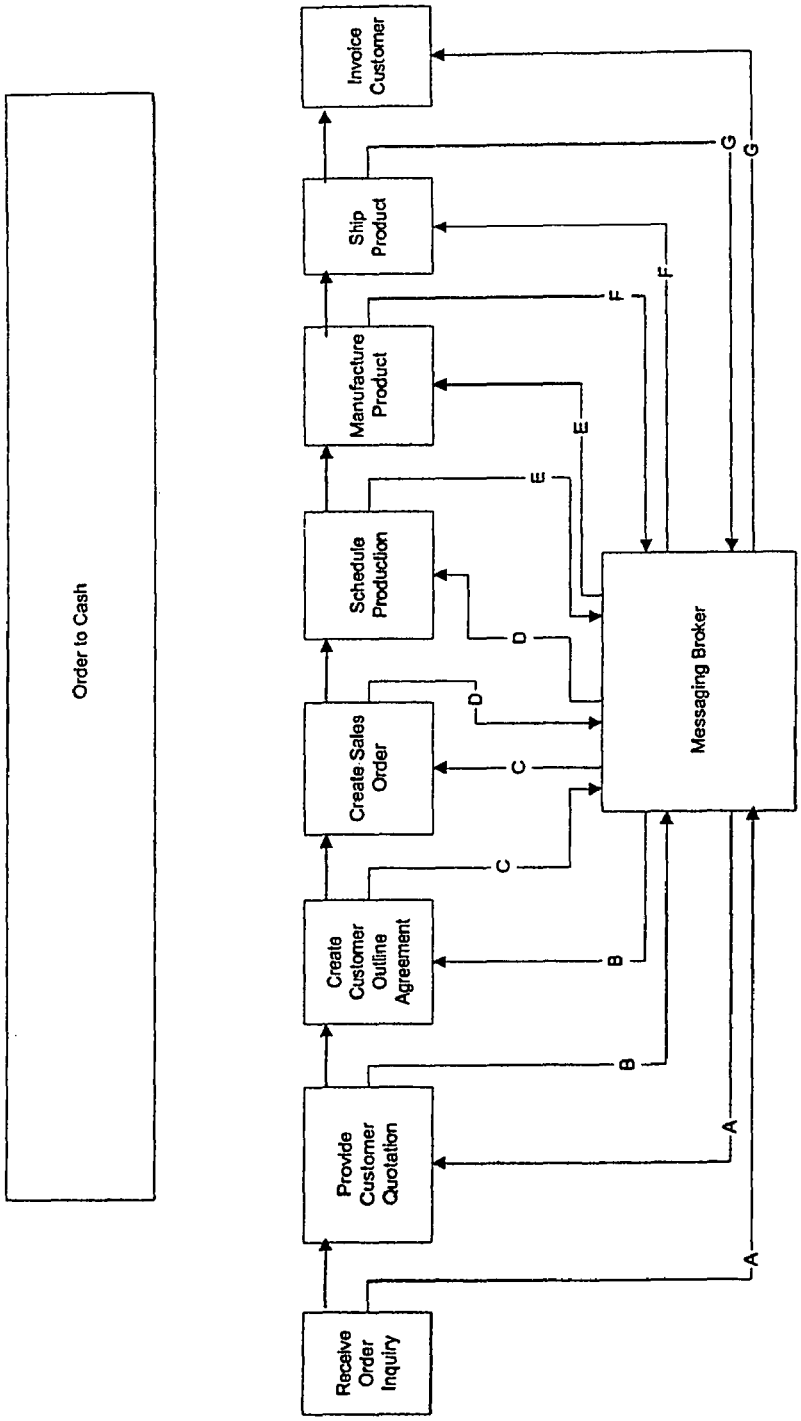

Figure 1

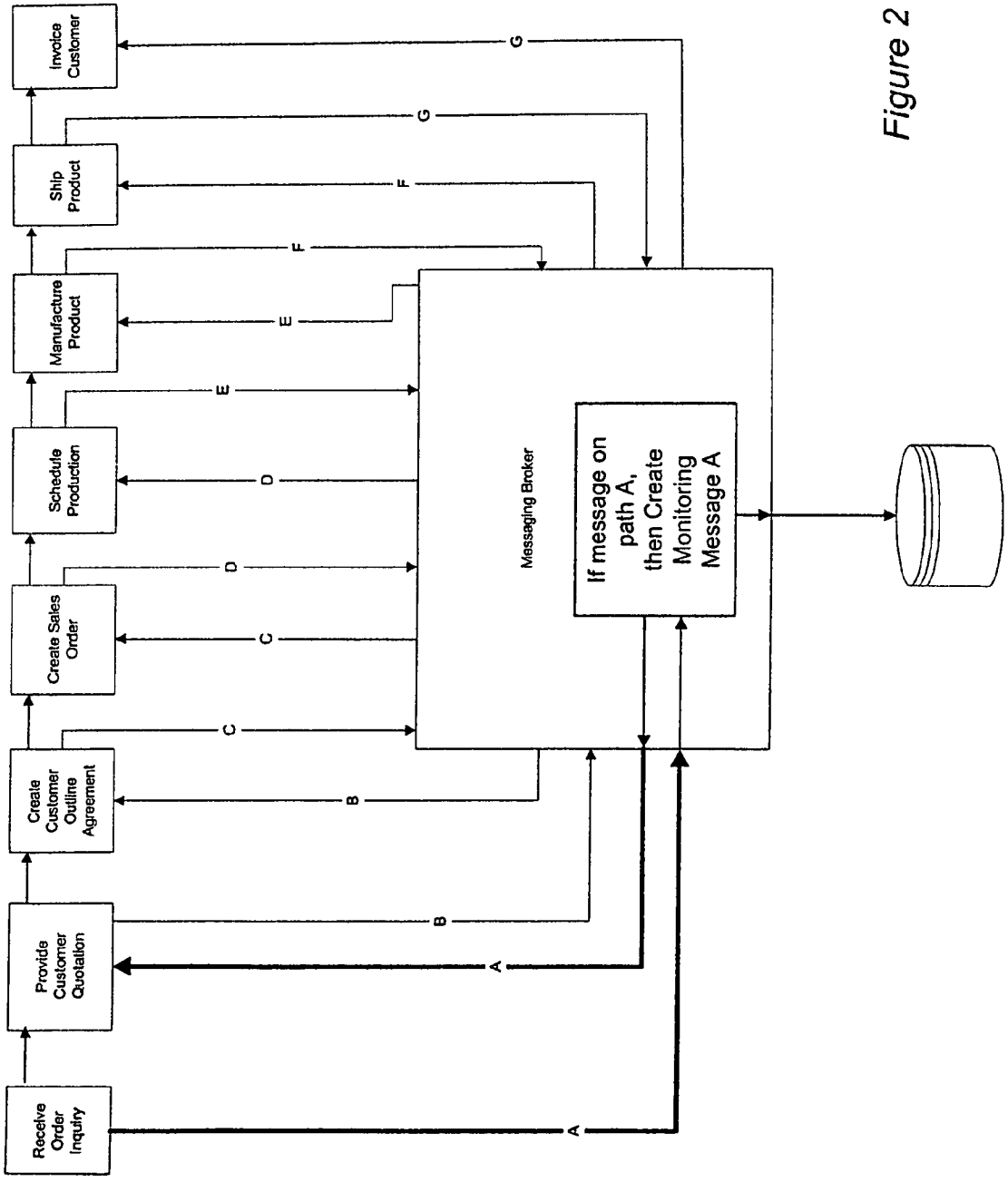

Figure 2

Summary Of Orders

Your Information

Customer Number	Company	Location
5000	Dow Chemical	Midland, MI

Current Orders, Quotes, and Inquiries

Click on an order to view its detailed status and history

Date	Transaction ID	Order Number	Current Status
3/27/2000	0003	800000	INVOICE
3/29/2000	2102	839400	MANUFACTURE
3/31/2000	2204	940302	ORDER

Figure 3

Order History and Tracking Information

Inquiry created 04/18/2000 at 10:18

Your Information

Customer Number	Company	Location
5000	Dow Chemical	Midland, MI

Current Order Status - Transaction 003/Order 800000

INVOICE

Invoice Date: 3/31/00

Order Detail

Material Name	Material Number	Unit of Measure	Quantity	Price Each
Widget	800003	BOX	2	2.00

Order History

INQUIRY

Date	Time	Quote Number
3/25/2000	21:09	200001

QUOTE

Date	Time
3/26/2000	22:15

AGREEMENT

Date	Time
3/27/2000	08:15

ORDER

Date	Time	Order Number
3/27/2000	10:00	800000

SCHEDULE

Date	Time
3/27/2000	12:00

MANUFACTURE

Date	Time	Production Number	Production Location	Status
3/29/2000	11:34	410000	LOCAL	N/A

SHIP

Date	Time	Shipping Method	Tracking Number
3/31/2000	21:00	UPS	1Z4505849939G

INVOICE

Date	Time	Order Number
3/31/2000	21:00	800000

Figure 4

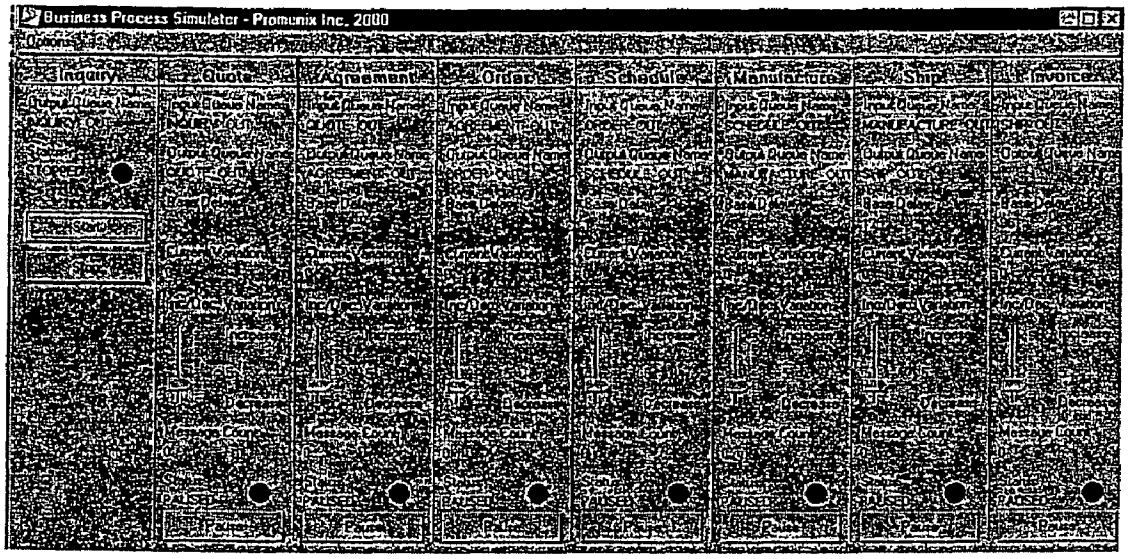
Business Process Simulator - Promonix Inc. 2000
Inquiry
Quote
Agreement
Order
Schedule
Manufacture
Ship
Invoice

Figure 5

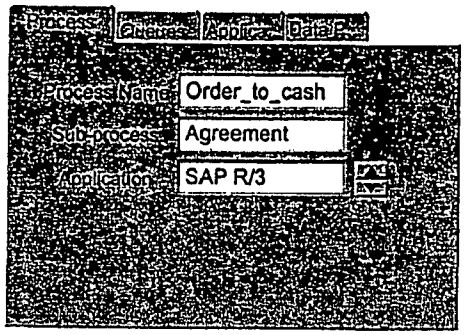

Figure 6

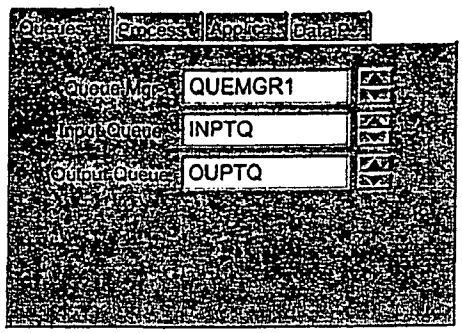

Figure 7

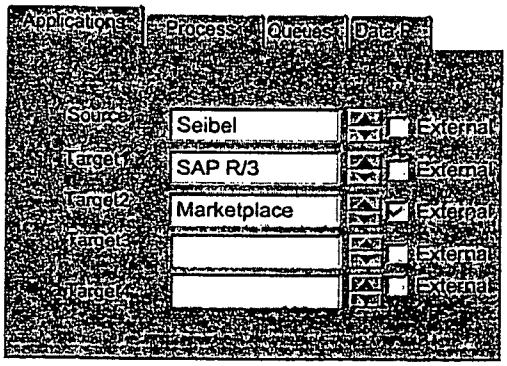

Figure 8

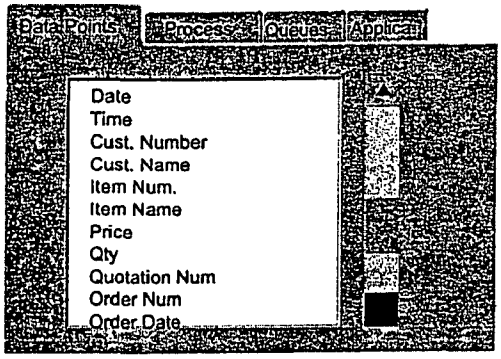

Figure 9

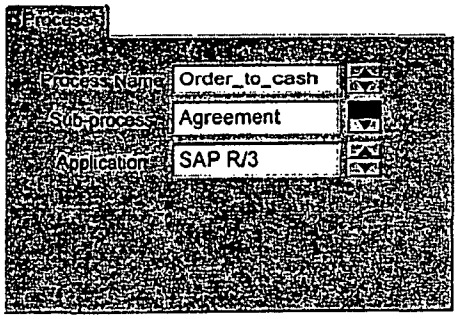

Figure 10

APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation of and claims the benefit of U.S. patent application Ser. No. 09/737,494 filed Dec. 15, 2000, entitled Apparatus and Methods for Isolating and Reviewing Data from Multiple Sources, now issued U.S. Pat. No. 7,062,749.

The present invention relates to apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes. More particularly, the present invention relates to computer-based apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes in an asynchronous messaging environment.

BACKGROUND OF THE INVENTION

The activities of a business or enterprise can be grouped into processes. Processes are business operations that are separated as desired and usually occur across business units. For example, the process of taking orders and turning those orders into revenue may be known as Order to Cash. The processes are comprised of sub-processes. For example, Order to Cash may be broken down into sub-processes such as Receive Order Inquiry, Provide Customer Quotation, Create Customer Outline Agreement, Create Sales Order, Schedule Production, Manufacture Product, Ship Product and Invoice Customer. Each sub-process may in turn be broken down into discrete activities such as providing customer number, entering that customer number, establishing pricing, determining a shipping date, etc.

The processes, sub-processes and activities operate, in part, by communicating information. For example, users may communicate through email. As another example, applications may communicate amongst themselves through electronic data interchange ("EDI") and other similar services. Communication occurs horizontally, that is, among a process, sub-process and activities, as well as vertically, that is, between processes, sub-processes and activities.

Whether communications occur horizontally or vertically, among applications or users, communications are increasingly asynchronous or message based. That is, enterprise communications were formerly primarily synchronous, or connection oriented, in which a connection is established with prior coordination between communication end points with data then being transmitted over the connection. Enterprise communications are now increasingly asynchronous, or connectionless, transmitting data without prior coordination between communication end points, such as through "event based" communications which use messages to move data instead of large files.

Asynchronous or message based communications permit loosely coupled connections among and between systems because the end points do not have to be prepared to receive the data when the message is transmitted. Loosely coupled connections permit more flexibility in assembling processes. Flexibility in assembling processes is desirable in order to permit quick reaction to changing business conditions: if a particular sub-process or activity becomes unusable, the process can be reassembled with a new sub-process or activity. For example, if a Manufacture Product sub-process in the Order to Cash process at Widget Co. enterprise has a specific factory identified to manufacture the product and that factory has a fire or other disaster, making it unusable, Widget Co. will need to substitute a new factory. The ripple effect of that substitution among all of Widget Co.'s processes will change any number of parameters. A loosely coupled asynchronous connection among Widget Co.'s processes provides rapid substitution of the new factory for the old because the end points of communication to the new factory do not have to be predetermined before communications begin with the new factory. Thus, the flexibility of the asynchronous message based communication has permitted quick response to changing business conditions.

Despite this flexibility, asynchronous or message based communications are problematic because of their loosely coupled nature. At any given time, precise information on the progress of the processes is difficult to obtain—messages may be in transit and not instantly locatable. For example, if a customer calls for the status of an order, an enterprise customer service representative may be able to determine nothing more than the fact that the order has been received and that the scheduled ship date is X. There is often no ability to drill down into the information levels and review the status in more granularity, such as the location of the good, the manufacturing status, etc., because the information required to review that status is in transit and unable to be reviewed.

Of course, if the enterprise lacks the ability to access status information, business partners of the enterprise will similarly lack that ability. Thus, asynchronous communications may well increase inefficiency among business partners as well.

The difficulty in reporting caused by message based architecture also makes it difficult for the enterprise to measure the efficiency of its processes and their sub-process. Asynchronous messaging, with its indeterminate transmission of information, means a company may not be able to easily measure the interval between each sub-process, e.g. the time between Scheduling Production and the Manufacturing of a Product, and so easily measure the efficiency of their operations.

Finally, asynchronous messaging may provide an enterprise with an ability to model and simulate processes. That is, since information flows can be readily estimated through enterprises with asynchronous messaging, and processes can be easily modeled from those flows, asynchronous messaging modeling provides the potential to model and simulate processes. That potential is not realized with present technology, however. Moreover, since as described above, enterprises lack information on the processes they have implemented, the enterprises are handicapped in their ability to modify those processes or plan new processes. A modeling and simulation tool, demonstrating processes, sub-processes and their activity or granular detail level would be extremely helpful, and would give the enterprise an opportunity to assemble, test, adjust, and simulate processes and their details.

Accordingly, it is an object of the present invention to provide a tool for simulating message based architectures.

It is a further object of the present invention to provide monitoring capabilities for enterprise processes.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** shows a view of a process.

FIG. **2** shows a view of a process of a preferred embodiment.

FIG. **3** shows a screen of a preferred embodiment.

FIG. **4** shows a screen of a preferred embodiment.

FIG. **5** shows a screen of a preferred embodiment.

FIG. **6** shows a partial view of a preferred embodiment.

FIG. **7** shows a partial view of a preferred embodiment.
FIG. **8** shows a partial view of a preferred embodiment.
FIG. **9** shows a partial view of a preferred embodiment.
FIG. **10** shows a partial view of a preferred embodiment.

SUMMARY OF THE INVENTION

The present invention comprises apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes in an asynchronous messaging environment. For each original message sent within a process, sub-process or activity, the preferred embodiments of the present invention send a separate monitoring message containing data from the central message repository or database. This data may include date, time, customer number, materials, quantity, amount, or other information, and be copied from the original message. Other embodiments may add data to the monitoring message aside from that contained in the original message.

This central message repository or database is comprised of information passing through the enterprise. In effect, the database provides a collection point or an "end point" for the asynchronous communications, and so allows the flexibility of asynchronous communications to be combined with the precision of synchronous communications. The database can be reviewed in any number of ways. For example, the database can be queried to obtain specific information about that particular order or customer or could be examined across larger time spans such as days, weeks, or months, to gauge trends or performance. Of course, some preferred embodiments may wish to create mirror databases or other databases that can be used in various ways.

An enterprise's information flow can also be readily modeled and simulated through creating new process, sub-process and/or activities or altering existing process, sub-process or activities. The information flows from those creations or alterations can be collected in one or more databases and examined as desired.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. **1** shows a sample process, Order to Cash, which is comprised of various sub-processes: Receive Order Inquiry, Provide Customer Quotation, Create Customer Outline Agreement, Create Sales Order, Schedule Production, Manufacture Product, Ship Product and Invoice Customer. The dashed line arrows connecting the sub-processes are the communication paths between the sub-processes. In the example shown in the figure, the sub-processes actually communicate through a messaging broker, such as an IBM MQSeries component, and the paths to and from the component are identified identically. This messaging broker permits certain sophisticated messaging uses, such as message queuing, some data translation, etc.

A messaging component is added to the messaging broker, through methods known in the art. This messaging component creates a "monitoring" message for each original message received by the broker. This monitoring message contains, in this embodiment, specific data generated from the original messages passing between the sub-processes. The monitoring message with its data is then sent from the messaging broker to a central database repository or database (the terms "repository" or "database" are used interchangeably throughout.)

The messaging component may be, in some embodiments, or may not be, in other embodiments, provided by the messaging broker. For example, IBM's MQSeries messaging broker provides a component that can be configured to perform a copying function for the messages it receives, and so create monitoring messages for the messages it receives.

The specific data contained in the monitoring messages (in this embodiment, this data is copied from the original messages passing between the sub-processes) is organized into data fields. Those data fields are path specific in this embodiment. For example, assume a customer calls the enterprise (Widget Co.) whose process is shown in FIG. **1** and asks whether or not Widget Co. has a certain product (Type A Widgets.) That customer request will begin the Receive Order Inquiry sub-process which will end with the generation of a Receive Order Inquiry message traveling to the Provide Customer Quotation sub-process through the messaging broker component. When the messaging broker receives the message on Path A, it will create a monitoring message, and send the monitoring message to the central database repository, as shown in FIG. **2**. In this embodiment, the data contained in the monitoring message is generated from the message on Path A. Other preferred embodiments may alter or add data to the monitoring messages aside from that contained in the original message.

The monitoring message contains, in this embodiment, specific data fields. (Of course, other embodiments may have different data fields.) Those data fields are:

FIELDS	IDENTIFIERS
PROCESS IDENTIFIER	ProID,
SUB-PROCESS IDENTIFIER	SbProID,
CUSTOMER NUMBER	Custno,
PART NUMBER	Partno,
QUANTITY	Qty,
DATE	Date,
TIME	Time

The first field, the PROCESS IDENTIFIER field, provides the identifier for the process, for example, the value "Order to Cash" because the monitoring message is being created within the Order to Cash process. The second field, the SUB-PROCESS IDENTIFIER field, provides the identifier for the sub-process, for example, the value "Inquiry" because the monitoring message is being created within the Inquiry sub-process. This embodiment prepopulates these PROCESS IDENTIFIER and SUB-PROCESS IDENTIFIER fields, with the appropriate values.

The CUSTOMER NUMBER field is assigned to the particular customer generating the inquiry. The PART NUMBER field is the identifier for the particular part and the QUANTITY for the particular quantity. DATE and TIME are the data and time the message is generated. Other message fields for other paths of this embodiment are shown in Table 1. Of course, some, all or none of these fields may be present in other embodiments, as well as other fields as desired. For example, one or more ACTIVITY IDENTIFIER fields may be present in monitoring messages in other embodiments.

The monitoring message data populates one information flow or transaction record ("transaction record.") As monitoring messages progress through any given process and/or sub-process, the transaction record is updated. Once the monitoring messages complete the transaction record, all of the information needed to measure that transaction through the process is contained in one record in the central message database. (Of course, if the monitoring messages do not fully populate the transaction record, e.g., the transaction is

aborted in mid process, then these abandoned records may be made available as well with an indication that they were abandoned.)

The central message database can be reviewed in any number of ways, in order to measure, monitor and track enterprise communications and processes, e.g., to provide information or generate reports. Using the central message database to provide information or generate reports "off loads" the information access or reporting processes from the applications that generate messages initially, e.g., sub-processes such as those seen in FIG. **1**. This off loading relieves some of the monitoring pressure from the source applications so that, for example, any queries that might have been made to the source applications and interfere with or slow down the operation of the source applications can now be made through the central message database.

The information retrieved from the central message database may include, but is not limited to, information about any particular order or customer, information about process efficiency, "snapshot" or time slice information, information across time spans such as days, weeks, or months, information to gauge trends or performance, etc. Also, in some embodiments, a "real-time" tool may be used to track the progress of transaction records and/or processes and use distribution methods such as broadcasting, WAP, etc. to provide the information to users. For example, if a process such as pipeline capacity for oil and natural gas transmissions is implemented and monitored through an embodiment of the present invention, the central message database will constantly broadcast unused pipeline capacity, which information in turn can be used to sell, trade or barter that unused capacity. As another example, information about an enterprise's processes can be made available over an intranet, extranet, the Internet, etc. to business partners or other entities. One example would be providing information to stock analysts so that they could track any particular enterprise's productivity or other areas of interest. Another example would be providing information to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest. In some embodiments, with regard to external entities, communication channels between the external entities and the enterprise might well be established, so that central message databases exist on both ends of the communication channel.

The central message database allows for broader analysis of trends that may include: time between sub-processes, variances by customer, variances by order amount, bottlenecks in the process, etc. For example, it would be possible to determine how many orders stood between Order and Invoice. This may allow for the acceleration of some orders so they could be booked by quarter close. For example, a vendor bottleneck may be identified in the course of review of the processes, sub-processes and/or activities. For example, seasonal variations in processes, sub-processes and/or activities may be identified as well.

Of course, some embodiments may create mirror databases and/or generate other databases that can be used by various entities. For example, an enterprise may create a number of central message databases which could track processes, sub-processes and/or activities in whole or part. These databases could also be combined as desired.

Monitoring message database(s) may be used, in some embodiments, in various ways, either in addition to or instead of central message database(s.) For example, a monitoring message database or a central message database may be used to generate messages and feedback to the processes, sub-processes, activities and/or applications, as well as to users and/or administrators (herein generally "users.") Various messages transmitted from sub-process applications such as error messages would generate special monitoring messages which would be added to a message monitoring database. Other events, exceptions, triggers and thresholds, could be tracked as well in various embodiments and be used to signal conditions, problems, etc. by various methods such as "flagged" or specially designated messages or other indicators.

Access to the database(s) is, in the preferred embodiments, on a secured or authorized basis, with different users obtaining different levels of access to the data in the database.

FIG. **3** shows a screen shot of an example of a preferred embodiment where access was made available to a customer over a corporate extranet. The screen shot is of a report, generated through an XML link to the central message database, of that particular customer's orders. In the preferred embodiments, the customer has the option to "drill down" through this screen to other screens for further detail. So, for example, FIG. **4** shows a result of one such operation, where the customer had drilled down from the screen of FIG. **3**. Of course, these records may vary depending on the status of the transaction, that is, whether the transaction is in the middle of the process, at the beginning of the process, etc. Furthermore, other reporting options may be seen depending on the embodiments. Additionally, in some embodiments the user may have the option to drill down further into or past these levels if desired.

The preferred embodiments of the present invention also provide a simulation module for business processes. The simulation module makes possible simulation of new processes, their sub-processes and the activities that make up the sub-processes. This provides the enterprise or other user with the opportunity to assemble, test, adjust, and simulate processes before they are integrated into the enterprise.

The simulation module of the preferred embodiments provides the ability to assemble simulated processes in two primary ways. The first primary way is through provision of a toolkit or palette of predetermined sub-processes to the user. The user can then choose from that palette of sub-processes to form a process for an organization, which is then used in the simulation as is explained in further detail below.

The second primary method of assembling processes is to provide the user with activities, which are the most granular construct of a sub-process. Additionally, more sophisticated users will be given the opportunity to assemble their own activities. Either or both options of this second primary method can be offered in various embodiments. Additionally, the first and second primary methods can be combined in certain embodiments as well.

The preferred embodiments permit use of discrete activities among sub-processes, perhaps in an object oriented format, in order to save time and increase productivity. These activities can then be connected to form one or more sub-processes, which in turn can be connected to form one or more processes. The ability to create additional sub-processes would allow for the company to add their unique sub-processes to the palette.

It should be noted that in other embodiments, the simulation module may be constructed in other ways. For example, preconfigured, industry-specific processes may be supplied that can be altered and/or provided with enterprise specifics.

The simulation model is contained, in the preferred embodiments, on a corporate intranet or extranet. The underlying assumption of the simulation model in the preferred embodiments is that the completion of each sub-process will generate a message. So, for example, if a process such as that

of FIG. **1** is simulated, the completion of the first sub-process will generate a message to be sent to the next sub-process, the completion of the next sub-process will generate a message that will be sent to the next sub-process, and so on.

FIG. **5** shows a process development environment screen for an example process called "Order" of the simulation module. Sub-processes Inquiry, Quote, Agreement, Order, Schedule, Manufacture, Ship and Invoice have been joined together to comprise this process. The sub-processes, in this example, are predetermined and their activities are predetermined. The input and output queue names are identified where appropriate. For example, the output queue name in the Inquiry sub-process is INQUIRY_OUT. That output queue then feeds data into the input queue of the Quote sub-process. (These are analogous to Path A in FIG. **1**.) The base delay provides the initial time of a sub-process. For example, the base delay for the Quote Sub-process is 1 or a time increment of 1. In contrast the Manufacture Sub-process base delay is 48, so that the time increment for the Manufacture Sub-process is 48. The Current Variation shows the Increase/Decrease Variation set by the slider, permitting an increase or decrease in the latency per process and thus permits the user to see the downstream effect of altering each sub-process time. (Other embodiments may use different apparatus and methods as known in the art to vary the latency of the sub-process.) In this example, the total time of the process is obtained by adding each base delay of each sub-process, however, each sub-process may not affect the other in a geometric or logarithmic progression. For example, varying the base delay by one time increment of the Quote sub-process may not lead to an exact one time increment variation in the Scheduling sub-process.

FIGS. **6** through **9** are examples of tools that are used in this embodiment to construct sub-process modules such as those used in FIG. **5**. For example, FIG. **6** shows the properties of the Agreement sub-process module, which are the process, the sub-process and the application used in the sub-process. The process and sub-process are predetermined in this module. The user has the option of setting the application alternative of the sub-process to one or more predetermined alternatives. These alternatives would be used, for example, when a new application might be used to provide output from the sub-process.

FIG. **7** shows a message queue construction tool for the sub-process identified in FIG. **6**. This tool, which may be another option combined with the process tool of FIG. **6** or some other tool in various embodiments, or may be stand-alone in other embodiments, provides the ability to select a queue manager (a process that manages different message queues in various machines or applications), input queue and output queue for the particular sub-process being simulated. Each of these options, queue manager, input queue and output queue, can be changed by using the arrows to access a drop-down menu of predetermined alternatives. Once the alternatives are chosen, the module can be saved. Of course, in other embodiments non-predetermined alternatives may be used.

FIG. **8** shows an application construction tool, which can be used to select the applications used on either end of the queue or path. Here, there are two separate targets, one external, with a single monitoring message being sent to a central message database, before the source message is split and sent to both target applications. FIG. **9** shows the particular data fields or points that may be captured in the monitoring message. These are selected by highlighting the preferred fields in this embodiment.

Other alternatives are possible for other embodiments of the simulation module. For example, the embodiments discussed above have some alternatives as predetermined, which makes the construction of sub-process modules more convenient. In other embodiments non-predetermined alternatives may be used. Moreover, any desired processes that are not defined in predetermined modules can be developed and made available to the user. For example, a tool such as that shown in FIG. **10** provides the ability to alter the process, the sub-process, and the application, by using the arrows to access a drop-down menu of predetermined alternatives, thus facilitating creation of new processes, sub-processes and/or activities. Other embodiments may use an "open ended" format to allow the creation of new processes and sub-processes and/or activities.

The simulation module is, in the preferred embodiments, either stand-alone or contained as part of a monitoring apparatus and/or system as had been described above. If the latter, then "real-time" data and processes, sub-processes and activities can be used in the simulation apparatus and/or process. The simulator module permits processes and sub-processes to be defined, simulated, and refined before modifying existent systems or implementing new systems.

The above description and the views and material depicted by the figures are for purposes of illustration only and are not intended to be, and should not be construed as, limitations on the invention.

Moreover, certain modifications or alternatives may suggest themselves to those skilled in the art upon reading of this specification, all of which are intended to be within the spirit and scope of the present invention as defined in the attached claims.

TABLE 1

PATH	FIELDS	IDENTIFIERS
B	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	quote,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUOTE NUMBER	quote num,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
C	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	Agreement,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUOTE NUMBER	quote num,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
D	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	order,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
E	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	schedule,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	PRODUCTION NUMBER	production Number,
	PRODUCTION DATE	Production date,
	PRODUCTION LOCATION	production location,
	PRODUCTION STATUS	production status,
	CUSTOMER NUMBER	custno,

TABLE 1-continued

PATH	FIELDS	IDENTIFIERS
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
F	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	mfg,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	PRODUCTION NUMBER	production Number,
	PRODUCTION DATE	Production date,
	PRODUCTION LOCATION	Production location,
	PRODUCTION STATUS	Production status,
	CUSTOMER NUMBER	custno,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
G	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	ship,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	PRODUCTION NUMBER	production Number,
	PRODUCTION DATE	Production date,
	PRODUCTION LOCATION	production location,
	PRODUCTION STATUS	production status,
	CUSTOMER NUMBER	custno,
	SHIPPING DATE	ship date,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time
H	PROCESS IDENTIFIER	Order to cash,
	SUBPROCESS IDENTIFIER	invoice,
	ORDER NUMBER	ordernum,
	QUOTE NUMBER	quote num,
	CUSTOMER NUMBER	custno,
	SHIPPING DATE	ship date,
	MATTER NUMBER	matno,
	QUANTITY	qty,
	PRICE	price,
	AMOUNT	amt,
	DATE	date,
	TIME	time

We claim:

1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

retrieving information from the central message repository.

2. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information about an order from the central message repository.

3. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information about a customer from the central message repository.

4. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving process efficiency information from the central message repository.

5. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving time slice information from the central message repository.

6. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository.

7. A method as in claim **6** wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

8. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information to gauge trends from the central message repository.

9. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information to gauge performance from the central message repository.

10. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge trends.

11. A method as in claim **10** wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

12. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information across a time span from the central message repository to gauge performance.

13. A method as in claim **12** wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

14. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information about process efficiency.

15. A method as in claim **1** wherein said original message data comprises a data field.

16. A method as in claim **15** wherein said data field is path specific.

17. A method as in claim **1** wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process, and wherein said action provides data which is used as a data field within said monitoring message.

18. A method as in claim **1** wherein said retrieving information from the central message repository comprises retrieving information in order to measure, monitor and track enterprise communications and processes.

19. A method as in claim **1** wherein said retrieving information from the central message repository comprises broadcasting unused pipeline capacity.

20. A method as in claim **1** wherein retrieving said information from the central message repository provides an alternative to retrieving original message data from an application that had originally generated said original message data.

21. A method as in claim **1** further comprising relieving monitoring pressure from a source application.

22. A method as in claim **1** further comprising providing a duplicate of said central message repository.

23. A method as in claim 22 further comprising providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.

24. A method as in claim 1 further comprising providing a mirror repository of said central message repository.

25. A method as in claim 24 wherein said mirror repository is used by an external entity.

26. A method as in claim 25 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.

27. A method as in claim 24 wherein, if more than one mirror repository is used, said repositories are combined.

28. A method as in claim 24 wherein said mirror repository is used either in addition to or instead of said central message repository.

29. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.

30. A method as in claim 24 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.

31. A method as in claim 30 wherein said messages comprise error messages.

32. A method as in claim 30 wherein said messages comprise event messages.

33. A method as in claim 30 wherein said messages comprise exception messages.

34. A method as in claim 30 wherein said messages comprise trigger messages.

35. A method as in claim 30 wherein said messages comprise threshold messages.

36. A method as in claim 30 wherein said messages comprise flagged indicators.

37. A method as in claim 30 wherein said messages comprise specially designated messages.

38. A method as in claim 1 wherein said retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.

39. A method as in claim 38 wherein said retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.

40. A method as in claim 1 wherein said retrieving information from the central message repository further comprises permitting a user to retrieve information over a corporate extranet.

41. A method as in claim 1 further comprising providing a report.

42. A method as in claim 41 further comprising providing said report through an XML link to said central message repository.

43. A method as in claim 42 further comprising displaying said report.

44. A method as in claim 40 wherein said user comprises a customer, and said permitting a user to retrieve information over a corporate extranet further comprises permitting said customer to retrieve information concerning said customer's orders.

45. A method as in claim 43 wherein said display provides an option to drill down through said display for further detail.

46. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.

47. A method as in claim 46 wherein said information is distributed using a distribution method selected from the group consisting of an intranet, an extranet, and the Internet.

48. A method as in claim 46 wherein said information is distributed to business partners.

49. A method as in claim 48 wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.

50. A method as in claim 46 wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.

51. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message;

reviewing data collected in said transaction record;

wherein said original message data comprises status information of a process and/or sub process.

52. A method as in claim 51 wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.

53. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.

54. A method as in claim 51 wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.

55. A method as in claim 51 further comprising providing the status of a process by providing access to said central message repository.

56. A method as in claim 51 further comprising adding, to said monitoring message, data other than said original message data.

57. A method as in claim 51 further comprising updating said transaction record.

58. A method as in claim 57 further comprising updating said transaction record by:

providing, through a second monitoring message, a second original message data to said transaction record; and,

populating said transaction record with said second original message data provided by said second monitoring message.

59. A method as in claim 51 further comprising completing a process.

60. A method as in claim 51 further comprising completing said transaction record.

61. A method as in claim 51 further comprising aborting a process.

62. A method as in claim 61 further comprising providing, in said transaction record, an indication that the process has been aborted.

63. A central message repository created by the method of claim 51.

64. A transaction record created by the method of claim 51.

65. A method as in claim 51 wherein said process is a simulated process.

66. A method as in claim 51 wherein said sub process is a simulated sub process.

67. A method as in claim 51 wherein said original message data is simulated original message data.

68. A method as in claim 51 further comprising providing the status of a sub process by providing access to said central message repository.

69. A method as in claim 51 further comprising providing the status of an activity by providing access to said central message repository.

70. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;

transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;

storing said original message data from said first activity, in a transaction record in said central message repository;

transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,

storing said original message data from said second activity, in said transaction record in said central message repository;

wherein said original message data comprises the status of said activity.

71. A method as in claim 70 further comprising determining the status of said sub process.

72. A method as in claim 70 wherein said original message data from each of said first and second activities comprises an activity specific set of data.

73. A method as in claim 70 wherein said first monitoring message further comprises altered original message data.

74. A method as in claim 70 wherein said first monitoring message further comprises data added to said original message data.

75. A method as in claim 70 further comprising reviewing said central message repository.

76. A method as in claim 75 wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.

77. A method as in claim 70 further comprising distributing process progress information in real time.

78. A method as in claim 70 further comprising distributing said process progress information through broadcasting.

79. A method as in claim 70 further comprising distributing said process progress information through the Internet.

80. A method as in claim 70 further comprising analyzing said central message repository in order to determine a process trend.

81. A method as in claim 80 wherein said process trend is selected from the group consisting of: time between subprocesses: variances by customer, variances by order amount, bottlenecks and seasonal variations.

82. A method as in claim 81 wherein orders may be accelerated as a result of said analysis.

83. A method as in claim 70 further comprising providing a monitoring message repository.

84. A method as in claim 70 further comprising providing a report via an XML link to said central message repository.

85. A method as in claim 70 wherein said second monitoring message further comprises altered original message data.

86. A method as in claim 70 wherein said second monitoring message further comprises data added to said original message data.

87. A method as in claim 70 further comprising distributing said process progress information through Wireless Application Protocol.

88. A method as in claim 70 further comprising distributing said process progress information through an intranet.

89. A method as in claim 70 further comprising distributing said process progress information through an extranet.

90. An apparatus for use in an asynchronous messaging environment in a communications system or systems wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, through a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

means for retrieving information from the central message repository.

91. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about an order from the central message repository.

92. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about a customer from the central message repository.

93. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving process efficiency information from the central message repository.

94. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving time slice information from the central message repository.

95. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository.

96. An apparatus as in claim 95 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

97. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge trends from the central message repository.

98. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information to gauge performance from the central message repository.

99. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge trends.

100. An apparatus as in claim 99 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

101. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information across a time span from the central message repository to gauge performance.

102. An apparatus as in claim 101 wherein said time span is selected from the group consisting of at least one day, at least one week, and at least one month.

103. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information about process efficiency.

104. An apparatus as in claim 90 wherein said original message data comprises a data field.

105. An apparatus as in claim 104 wherein said data field is path specific.

106. An apparatus as in claim 90 wherein said original message data is generated from at least one action selected from the group consisting of activity, sub process and process an sub process, or process, and wherein said action provides data which is used as a data field within said monitoring message.

107. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises means for retrieving information in order to measure, monitor and/or track enterprise communications and processes.

108. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository comprises broadcasting unused pipeline capacity.

109. An apparatus as in claim 90 wherein said means for retrieving said information from the central message repository provides an alternative to means for retrieving original message data from an application that had originally generated said original message data.

110. An apparatus as in claim 90 further comprising means for relieving monitoring pressure from a source application.

111. An apparatus as in claim 90 further comprising means for providing a duplicate of said central message repository.

112. An apparatus as in claim 111 further comprising means for providing said duplicate to an external entity, with a communication channel established between said central message repository and said duplicate of said central message repository.

113. An apparatus as in claim 90 further comprising means for providing a mirror repository of said central message repository.

114. An apparatus as in claim 113 wherein said mirror repository is used by an external entity.

115. An apparatus as in claim 113 wherein said mirror repository tracks processes, sub-processes and/or activities in whole or part.

116. An apparatus as in claim 113 wherein, if more than one minor repository is used, said repositories are combined.

117. An apparatus as in claim 113 wherein said mirror repository is used either in addition to or instead of said central message repository.

118. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to the group consisting of processes, sub-processes, activities or applications.

119. An apparatus as in claim 113 wherein said mirror repository or said central message repository may be used to generate messages and/or feedback to users.

120. An apparatus as in claim 119 wherein said messages comprise error messages.

121. An apparatus as in claim 119 wherein said messages comprise event messages.

122. An apparatus as in claim 119 wherein said messages comprise exception messages.

123. An apparatus as in claim 119 wherein said messages comprise trigger messages.

124. An apparatus as in claim 119 wherein said messages comprise threshold messages.

125. An apparatus as in claim 119 wherein said messages comprise flagged indicators.

126. An apparatus as in claim 119 wherein said messages comprise specially designated messages.

127. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises retrieving information from the central message repository on a secure basis.

128. An apparatus as in claim 127 wherein said means for retrieving information from the central message repository on a secure basis further comprises a tiered secure basis, with a user obtaining retrieval rights according to the user's security classification.

129. An apparatus as in claim 90 wherein said means for retrieving information from the central message repository further comprises means for permitting a user to retrieve information over a corporate extranet.

130. An apparatus as in claim 90 further comprising means for providing a report.

131. An apparatus as in claim 130 further comprising means for providing said report through an XML link to said central message repository.

132. An apparatus as in claim 130 further comprising means for displaying said report.

133. An apparatus as in claim 129 wherein said user comprises a customer, and said means for permitting a user to retrieve information over a corporate extranet further comprises means for permitting said customer to retrieve information concerning said customer's orders.

134. An apparatus as in claim 132 wherein said means for displaying said report provides an option to drill down through a display generated by said means for displaying said report for further detail.

135. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, though a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least

one action selected from the group consisting of activity, sub process and process; and,

means for distributing information from the central message repository using a real-time tool which tracks the progress of transaction records and/or processes.

136. An apparatus as in claim **135** wherein said means for distributing information comprises a means for distributing information selected from the group consisting of an intranet, an extranet, and the Internet.

137. An apparatus as in claim **136** wherein said information is distributed to business partners.

138. An apparatus as in claim **137** wherein said information is distributed to actual or potential business partners to check production capacity, shipping capacity, or other areas of interest.

139. An apparatus as in claim **136** wherein said information is distributed to stock analysts to track any particular enterprise's productivity or other areas of interest.

140. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, through a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,

means for updating said transaction record;

wherein said original message data comprises stares information of a process and/or sub process.

141. An apparatus as in claim **140** wherein said original message data comprises at least one field of data selected from the group consisting of date data, time data, customer number data, materials data, quantity data and amount data.

142. An apparatus as in claim **140** wherein said original message data comprises at least one field selected from the group consisting of PROCESS IDENTIFIER, SUB-PROCESS IDENTIFIER, ACTIVITY IDENTIFIER, CUSTOMER NUMBER, PART NUMBER, QUANTITY, DATE and TIME.

143. An apparatus as in claim **140** wherein said original message data comprises at least one field selected from the group consisting of ProID, SbProID, Custno, Partno, Qty, Date and Time.

144. An apparatus as in claim **140** further comprising updating said transaction record by:

means for providing, through a second monitoring message, a second original message data to said transaction record; and,

means for populating said transaction record with said second original message data provided by said second monitoring message.

145. An apparatus as in claim **140** further comprising completing a process.

146. An apparatus as in claim **140** further comprising completing said transaction record.

147. An apparatus as in claim **140** further comprising aborting a process.

148. An apparatus as in claim **140** further comprising providing, in said transaction record, an indication that the record has been abandoned.

149. A central message repository created by the method of claim **140**.

150. A transaction record created by the method of claim **140**.

151. An apparatus as in claim **140** wherein said process is a simulated process.

152. An apparatus as in claim **140** wherein said sub process is a simulated sub process.

153. An apparatus as in claim **140** wherein said original message data is simulated original message data.

154. An apparatus for use in an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for monitoring a sub process, which is comprised of at least a first and second activity, by generating original message data from each of said first and second activities;

means for transmitting said original message data from said first activity, via a first monitoring message, to a central message repository;

means for storing said original message data from said first activity, in a transaction record in said central message repository;

means for transmitting said original message data from said second activity, via a second monitoring message, to said central message repository; and,

means for storing said original message data from said second activity, in said transaction record in said central message repository;

wherein said original message data comprises the status of said activity.

155. An apparatus as in claim **154** further comprising determining the status of said sub process.

156. An apparatus as in claim **154** wherein said original message data from each of said first and second activities comprises an activity specific set of data.

157. An apparatus as in claim **155** wherein said first monitoring message further comprises altered original message data.

158. An apparatus as in claim **155** wherein said first monitoring message further comprises data added to said original message data.

159. An apparatus as in claim **155** further comprising means for reviewing said central message repository.

160. An apparatus as in claim **159** wherein reviewing said central message repository further comprises reviewing information from the group consisting essentially of order information, customer information, process efficiency information, snapshot information, time slice information, daily information, weekly information, monthly information, trend information and performance information.

161. An apparatus as in claim **155** further comprising distributing process progress information in real time.

162. An apparatus as in claim **161** further comprising distributing said process progress information through broadcasting.

163. An apparatus as in claim **161** further comprising distributing said process progress information through the Internet.

164. An apparatus as in claim **155** further comprising analyzing said central message repository in order to determine a process trend.

165. An apparatus as in claim **154** wherein said process trend is selected from the group consisting of: time between sub-processes, variances by customer, variances by order amount, bottlenecks and seasonal variations.

166. An apparatus as in claim **165** wherein orders may be accelerated as a result of said analysis.

167. An apparatus as in claim 155 further comprising providing a monitoring message repository.

168. An apparatus as in claim 155 further comprising providing a report via an XML link to said central message repository.

169. An apparatus as in claim 155 wherein said second monitoring message further comprises altered original message data.

170. An apparatus as in claim 155 wherein said second monitoring message further comprises data added to said original message data.

171. An apparatus as in claim 155 further comprising distributing said process progress information through Wireless Application Protocol.

172. An apparatus as in claim 155 further comprising distributing said process progress information through an intranet.

173. An apparatus as in claim 155 further comprising distributing said process progress information through an extranet.

* * * * *

APPENDIX "F"

COPY OF CERTIFICATE OF SERVICE AND STATEMENT REGARDING SERVICE

CERTIFICATE OF SERVICE UNDER 37 C.F.R. 1.248

Applicant hereby serves the Notification under 37 C.F.R. 4.565 in the above referenced case to:

Joseph E. Chovanes
5 Great Valley Parkway, Suite 329
Malvern, PA 19355

As per U.S.C. §1.248 service is made via first class mail on November 7, 2011.

Respectfully submitted,

Sprinkle IP Law Group

Ariyeh Akmal
Reg. No. 51,388

Dated: November 7, 2011

1301 West 25th Street, Suite 408
Austin, Texas 78705
Tel. (512) 637-9220
Fax. (512) 371-9088

Enclosures: Appendix A - G

APPENDIX "G"

COPY OF
PTO/SB/08a AND PTO/SB/08b
FORMS WITH CITED REFERENCES

INFORMATION DISCLOSURE STATEMENT				Control Number	90/009,960
				Application Number	11/398,133
				Filing Date	April 5, 2006
				First Named Inventor	Vincent R. Cyr
				Group Art Unit	2194 (Prior Examination)
				Examiner Name	HO, Andy (Prior Examination)
Sheet	1	of	1	Attorney Docket Number	OPEN2200-1

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number Number-Kind Code *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	A1	US 7003781	02-21-2006	Blackwell et al.	
	A2	US 6122633	09-19-2000	Leymann et al.	
	A3	US 6073111	06-06-2000	Leymann et al.	
	A4	US 20020038276	06-26-2001	Buhannic et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code *(if known)*	Publication Date MM-DD-YYYY (Number 43)	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear

Examiner Signature		Date Considered	

Substitute Form PTO/SB/08b

INFORMATION DISCLOSURE STATEMENT				Control Number	90/009,960
				Application Number	11/398,133
				Filing Date	April 5, 2006
				First Named Inventor	Vincent R. Cyr
				Group Art Unit	2194 (Prior Examination)
				Examiner Name	HO, Andy (Prior Examination)
Sheet	1	of	1	Atty Docket Number	OPEN2200-1

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
	C1	LEYMANN, FRANK, and ROLLER, DIETER, Production Workflow Concepts and Techniques, Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0, with attached Copyright Certificate from Library of Congress	
	C2	HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00, available at http://redbooks.ibm.com.	

Examiner Signature		Date Considered	

Electronic Acknowledgement Receipt

EFS ID:	11351983
Application Number:	90009960
International Application Number:	
Confirmation Number:	9422
Title of Invention:	
First Named Inventor/Applicant Name:	
Correspondence Address:	-
Filer:	Ari G. Akmal/Delia Narvaiz
Filer Authorized By:	Ari G. Akmal
Attorney Docket Number:	
Receipt Date:	07-NOV-2011
Filing Date:	
Time Stamp:	17:42:45
Application Type:	Reexam (Third Party)

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	Reexam Miscellaneous Incoming Letter	OPEN2200-1_Transmittal_Req_Reexam.pdf	78962 9d1c651f94a559870d9e733f6c2d41c5f864e60e	no	2
Warnings:					
Information:					
2	Receipt of Corrected Original Ex Parte Request	OPEN2200-1_Corr_Req_Reexam.pdf	5826840 0c720dca510747474a295e9f6525e5795fe87712	no	114
Warnings:					
Information:					
3	Receipt of Corrected Original Ex Parte Request	OPEN2200-1_AppB-G.pdf	6507520 51a86b08df2e2b77620334cdb1464102398c6c6e	no	130
Warnings:					
Information:					
		Total Files Size (in bytes):	12413322		

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.

<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.

<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.

<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.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 9422

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
90/009,960	11/07/2011 RULE	717	3992	OPEN2200-1

APPLICANTS

7603674, Residence Not Provided;
YYZ LLC(OWNER), CHADDS FORD, PA;
ARIYEH AKMAL(3RD.PTY.REQ.), AUSTIN, TX;
SPRINKLE IP LAW GROUP, AUSTIN, TX

**** CONTINUING DATA ***************************

This application is a REX of 11/398,133 04/05/2006 PAT 7,603,674
which is a CON of 09/737,494 12/15/2000 PAT 7,062,749

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

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☐ no				
35 USC 119 (a-d) conditions met	☐ yes ☐ no ☐ Met after Allowance			173	8
Verified and Acknowledged	Examiner's Signature Initials				

ADDRESS

JOSEPH E. CHOVANES
5 GREAT VALLEY PARKWAY
SUITE 329
MALVERN, PA19355

TITLE

APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES

FILING FEE RECEIVED		
2520	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/009,960	11/07/2011	7603674	OPEN2200-1	9422

7590 11/09/2011

JOSEPH E. CHOVANES
5 GREAT VALLEY PARKWAY
SUITE 329
MALVERN, PA 19355

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 11/09/2011

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patents and Trademark Office
P.O.Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS
SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

Date:

MAILED

NOV 09 2011

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. : 90009960
PATENT NO. : 7603674
ART UNIT : 3992

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified ex parte reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the ex parte reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Ex Parte Reexamination Interview Summary – Pilot Program for Waiver of Patent Owner's Statement	**Control No.** 90/009,960	**Patent For Which Reexamination is Requested** 7,424,133
	Examiner Tredelle Denise	**Art Unit** 3992

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

All participants (USPTO official and patent owner):

(1) Tredelle D. Jackson (3)

(2) Joseph E. Chovanes Reg # 33841 (4)

Date of Telephonic Interview: 11/08/11.

The USPTO official requested waiver of the patent owner's statement pursuant to the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The patent owner **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

☐ The patent owner **did not agree** to waive its right to file a patent owner's statement under 35 U.S.C. 304 at this time.

The patent owner is not required to file a written statement of this telephone communication under 37 CFR 1.560(b) or otherwise. However, any disagreement as to this interview summary must be brought to the immediate attention of the USPTO, and no later than one month from the mailing date of this interview summary. Extensions of time are governed by 37 CFR 1.550(c).

*For more information regarding this pilot program, see *Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings*, 75 *Fed. Reg.* 47269 (August 5, 2010), available on the USPTO Web site at http://www.uspto.gov/patents/law/notices/2010.jsp.

☒ USPTO personnel were unable to reach the patent owner.

The patent owner may contact the USPTO personnel at the telephone number provided below if the patent owner decides to waive the right to file a patent owner's statement under 35 U.S.C. 304.

/Tredelle Jackson/ 571-272-2783
Signature and telephone number of the USPTO official who contacted or attempted to contact the patent owner.

cc: Requester (if third party requester)

Ex Parte Reexamination Interview Summary – Pilot Program for Waiver of Patent Owner's Statement	**Control No.** 90/009,960	**Patent For Which Reexamination is Requested** 7,424,133
	Examiner Tredelle Denise	**Art Unit** 3992

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

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/Tredelle Jackson/ 571-272-2783

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cc: Requester (if third party requester)

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/Tredelle Jackson/ 571-272-2783

Signature and telephone number of the USPTO official who contacted or attempted to contact the patent owner.

cc: Requester (if third party requester)

Litigation Search Report CRU 3999

Reexam Control No. 90/009,960

TO: Examiner **Location: CRU** **Art Unit: 3999** **Date: 11/09/11** **Case Serial Number: 90/009,960**	**From: Tredelle Jackson** **Location: CRU 3999** **MDE 5D30** **Phone: (571) 272-2783** **Tredelle.Jackson@uspto.gov**

Search Notes

Litigation Search for U.S. Patent Number 7,424,133.
Sources:

1) I performed a KeyCite Search in Westlaw, which retrieves all history on the patent including any litigation.

2) I performed a search on the patent in Lexis CourtLink for any open dockets or closed cases.

3) I performed a search in Lexis in the Federal Courts and Administrative Materials databases for any cases found.

4) I performed a search in Lexis in the IP Journal and Periodicals database for any articles on the patent.

5) I performed a search in Lexis in the news databases for any articles about the patent or any articles about litigation on this patent.

Westlaw.

Date of Printing: Nov 09, 2011

KEYCITE

C US PAT 7424133 METHOD AND APPARATUS FOR CAPTURING, GEOLOCATING AND MEASURING OBLIQUE IMAGES, Assignee: Pictometry International Corporation (Sep 09, 2008)

History

Direct History

=> 1 **METHOD AND APPARATUS FOR CAPTURING, GEOLOCATING AND MEASURING OBLIQUE IMAGES,** US PAT 7424133, 2008 WL 4136295 (U.S. PTO Utility Sep 09, 2008) (NO. 10/701839)

Patent Family

2 OBLIQUE IMAGES AND GEO-LOCATION DATA CAPTURING SYSTEM FOR PHOTOGRAMMETRY, HAS IMAGE AND DATA ACQUIRING SOFTWARE READING IMAGE-DATA AND GEO-LOCATING SIGNALS, AND ASSOCIATING EACH DATA SIGNAL WITH RELATED LOCATING SIGNAL, Derwent World Patents Legal 2004-402730

Assignments

3 Action: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). Number of Pages: 004, (DATE RECORDED: Feb 04, 2011)

4 Action: NOTICE OF SECURITY INTEREST Number of Pages: 006, (DATE RECORDED: Jan 21, 2011)

5 Action: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). Number of Pages: 004, (DATE RECORDED: Feb 17, 2006)

Patent Status Files

.. Request for Re-Examination, (OG DATE: Jan 27, 2009)

Prior Art (Coverage Begins 1976)

C 7 AIRBORNE IMAGING SYSTEM USING GLOBAL POSITIONING SYSTEM (GPS) AND INERTIAL MEASUREMENT UNIT (IMU) DATA, US PAT 5894323Assignee: TASC, Inc,, (U.S. PTO Utility 1999)

C 8 AUTONOMOUS ELECTRO-OPTICAL FRAMING CAMERA SYSTEM WITH CONSTANT GROUND RESOLUTION, UNMANNED AIRBORNE VEHICLE THEREFOR, AND METHODS OF USE, US PAT 6130705Assignee: Recon/Optical, Inc., (U.S. PTO Utility 2000)

C 9 DEVICE AND SYSTEM FOR LABELING SIGHT IMAGES, US PAT 6222583Assignee: Nippon Telegraph and Telephone Corporation, (U.S. PTO Utility 2001)

C 10 ELECTRO-OPTICAL IMAGING ARRAY AND CAMERA SYSTEM WITH PITCH RATE IMAGE MOTION COMPENSATION, US PAT 6088055Assignee: Recon /Optical, Inc., (U.S. PTO Utility 2000)

C 11 ELECTRO-OPTICAL IMAGING ARRAY AND CAMERA SYSTEM WITH PITCH RATE IMAGE MOTION COMPENSATION WHICH CAN BE USED IN AN AIRPLANE IN A DIVE BOMB MANEUVER, US PAT 5844602Assignee: Recon/Optical, Inc., (U.S. PTO Utility 1998)

C 12 ELECTRO-OPTICAL IMAGING DETECTOR ARRAY FOR A MOVING VEHICLE WHICH INCLUDES TWO AXIS IMAGE MOTION COMPENSATION AND TRANSFERS PIXELS IN ROW DIRECTIONS AND COLUMN DIRECTIONS, US PAT 5798786Assignee: Recon/Optical, Inc., (U.S. PTO Utility 1998)

C 13 ELECTRO-OPTICAL RECONNAISSANCE SYSTEM WITH FORWARD MOTION COMPENSATION, US PAT 6373522Assignee: BAE SYSTEMS Information and Electronic, (U.S. PTO Utility 2002)

C 14 ELECTRO-OPTICAL RECONNAISSANCE SYSTEM WITH FORWARD MOTION COMPENSATION, US PAT 6256057Assignee: Lockhead Martin Corporation, (U.S. PTO Utility 2001)

C 15 HIGH ASPECT STEREOSCOPIC MODE CAMERA AND METHOD, US PAT 6747686Assignee: Recon/Optical, Inc., (U.S. PTO Utility 2004)

C 16 IDENTIFICATION OF GROUND TARGETS IN AIRBORNE SURVEILLANCE RADAR RETURNS, US PAT 4758850Assignee: British Aerospace Public Limited Company, (U.S. PTO Utility 1988)

C 17 MAPPING AND ANALYSIS SYSTEM FOR PRECISION FARMING APPLICATIONS, US PAT 5467271Assignee: TRW, Inc., (U.S. PTO Utility 1995)

C 18 METHOD AND APPARATUS FOR GENERATING A COMPREHENSIVE SURVEY MAP, US PAT 5414462 (U.S. PTO Utility 1995)

C 19 METHOD AND APPARATUS FOR GENERATING HIGH RESOLUTION CCD CAMERA IMAGES, US PAT 5251037Assignee: Hughes Training, Inc., (U.S. PTO Utility 1993)

C 20 METHOD AND APPARATUS FOR MAPPING AND MEASURING LAND, US PAT 5247356 (U.S. PTO Utility 1993)

C 21 METHOD AND AN ARRANGEMENT FOR DETERMINING THE SPATIAL COORDINATES OF AT LEAST ONE OBJECT POINT, US PAT 6731329Assignee: ZSP Geodaetische Systeme GmbH, (U.S. PTO Utility 2004)

C 22 SELF-CALIBRATING, DIGITAL, LARGE FORMAT CAMERA WITH SINGLE OR MULTIPLE DETECTOR ARRAYS AND SINGLE OR MULTIPLE OPTICAL SYSTEMS, US PAT 7009638Assignee: Vexcel Imaging GmbH, (U.S. PTO Utility 2006)

C 23 SYSTEM AND METHOD FOR IMAGE MOTION COMPENSATION OF A CCD IMAGE SENSOR, US PAT 6108032Assignee: Lockheed Martin Fairchild Systems, (U.S. PTO Utility 2000)

No Documents Found

No documents were found for your search terms
"**724133 or 7,424,133**"

- OR -
Click "Search Using Natural Language" to run your search as Natural Language search.

Click "Edit Search" to return to the search form and modify your search.

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- Remove some search terms.
- Use more common search terms, such as those listed in "Suggested Words and Concepts."
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patno=742133

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or	or	w/seg	in same segment
w/N	within N words	w/s	in same sentence
pre/N	precedes by N words	and not	and not

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In

002133 (74) 742133 October 20, 1903

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

742133

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Link to Claims Section

October 20, 1903

NOZZLE.

INVENTOR: HOWARD B. SHERMAN, OP MICHIGAN

APPL-NO: 002133 (74)

GRANTED-DATE: October 20, 1903

CORE TERMS: spindle, sleeve, nozzle, neck, stuffing-box, casting, packing-ring, sheet metal, rod, separately, threaded, cast, screwed, stamped, packing, stream, novel, owing, bore, thickness, stronger, waterway, lighter, slipped, threads, hose, rear, ring, accompanying drawings, integrally

Source: **Command Searching > Utility, Design and Plant Patents** i
Terms: **patno=742133** (Suggest Terms for My Search)
View: KWIC
Date/Time: Wednesday, November 9, 2011 - 3:34 PM EST

Patent Assignment Abstract of Title

Total Assignments: 1

Application #: 11398133 **Filing Dt:** 04/05/2006 **Patent #:** 7603674 **Issue Dt:** 10/13/2009

PCT #: NONE **Publication #:** US20060200804 **Pub Dt:** 09/07/2006

Inventors: Vincent R. Cyr, Kenneth Fritz

Title: APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES

Assignment: 1

Reel/Frame: 017823 / 0572 **Received:** 06/22/2006 **Recorded:** 06/22/2006 **Mailed:** 06/22/2006 **Pages:** 4

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: PROMENIX, INC. **Exec Dt:** 06/16/2006

Assignee: YYZ LLC
130 COMMONS CT.
CHADDS FORD, PENNSYLVANIA 19317

Correspondent: JOSEPH E. CHOVANES
5 GREAT VALLEY PARKWAY
MALVERN, PA 19355

Search Results as of: 11/09/2011 03:23 PM

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/009,960	11/07/2011	7603674

CONFIRMATION NO. 9422

SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

REEXAMINATION REQUEST NOTICE

OC000000050901440

Date Mailed: 11/10/2011

NOTICE OF REEXAMINATION REQUEST FILING DATE

(Third Party Requester)

Requester is hereby notified that the filing date of the request for reexamination is 11/07/2011, the date that the filing requirements of 37 CFR § 1.510 were received.

A decision on the request for reexamination will be mailed within three months from the filing date of the request for reexamination. (See 37 CFR 1.515(a)).

A copy of the Notice is being sent to the person identified by the requester as the patent owner. Further patent owner correspondence will be the latest attorney or agent of record in the patent file. (See 37 CFR 1.33). Any paper filed should include a reference to the present request for reexamination (by Reexamination Control Number).

cc: Patent Owner
JOSEPH E. CHOVANES
5 GREAT VALLEY PARKWAY
SUITE 329
MALVERN, PA 19355

/sdstevenson/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

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
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www.uspto.gov

REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/009,960	11/07/2011	7603674

CONFIRMATION NO. 9422

REEXAM ASSIGNMENT NOTICE

JOSEPH E. CHOVANES
5 GREAT VALLEY PARKWAY
SUITE 329
MALVERN, PA 19355

OC000000050901441

Date Mailed: 11/10/2011

NOTICE OF ASSIGNMENT OF REEXAMINATION REQUEST

The above-identified request for reexamination has been assigned to Art Unit 3992. All future correspondence to the proceeding should be identified by the control number listed above and directed to the assigned Art Unit.

A copy of this Notice is being sent to the latest attorney or agent of record in the patent file or to all owners of record. (See 37 CFR 1.33(c)). If the addressee is not, or does not represent, the current owner, he or she is required to forward all communications regarding this proceeding to the current owner(s). An attorney or agent receiving this communication who does not represent the current owner(s) may wish to seek to withdraw pursuant to 37 CFR 1.36 in order to avoid receiving future communications. If the address of the current owner(s) is unknown, this communication should be returned within the request to withdraw pursuant to Section 1.36.

cc: Third Party Requester(if any)
SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

/sdstevenson/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/009,960	11/07/2011	7603674	OPEN2200-1	9422

7590 12/01/2011

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SUITE 329
MALVERN, PA 19355

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 12/01/2011

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/009,960*.

PATENT NO. *7603674*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Order Granting / Denying Request For Ex Parte Reexamination	Control No.	Patent Under Reexamination
	90/009,960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

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

The request for *ex parte* reexamination filed *07 November 2011* has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a)☐ PTO-892, b)☒ PTO/SB/08, c)☐ Other: _____

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). **EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.**

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

cc:Requester (if third party requester)

DECISION

1. A substantial new question of patentability affecting claims 1-173 of United States Patent Number 7,603,674 B2 (Cyr et al) is raised by the Request for *ex parte* reexamination filed 11/07/2011.

References Cited in the Request

2. A total of six references in various combinations have been asserted in the Request as providing teachings relevant to the claims of the Cyr '674 patent. The proposed references which make up the combinations are as follows:

Production Workflow – (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0)

Blackwell – (U.S. Patent No. 7,003,781, published 02/21/2006)

Advanced Workflow Solutions (AWS) – (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00)

Leymann '633 – (U.S. Patent No. 6,122,633, published 09/19/2000)

Leymann '111 – (U.S. Patent No. 6,073,111, published 06/06/2000)

Buhannic – (U.S. Patent Application Publication No. 2002/0038276, published 03/28/2002)

Identification of Every Claim for Which Reexamination is Requested

3. The six references cited above are discussed in the Request regarding claims 1-173 of the Cyr '674 patent. Pages 10-20, 27-32, 37-44, 47-48, and 51-55 of the Request details out proposed substantial new questions of patentability in light of the combination of the six references cited above.

Prosecution History

4. The Cyr '674 patent was originally assigned serial number 11/398,133 and was filed 04/05/2006. The 11/398,133 application was a continuation of application number 09/737,494, filed 12/15/2000. A preliminary amendment was filed 04/21/06 cancelling all original claims 1-42 and adding new claims 43-222. A non-final action was mailed 03/04/2008 rejecting claims 43-84 under statutory double patenting in view of U.S. Patent No. 7,062,749. Dependent claims 85-87 were objected to as being allowable if rewritten in independent form including all of the limitations of the base claim and any interleaving claims. Claims 88-222 were allowed. In response to an amendment filed 07/07/2008 arguing the validity of the double patenting rejection (Remarks: Page 27: "the limitation in claim 43 of the present application of 'retrieving information from the central message repository' does not appear to be in the claims of the '749 patent"), the examiner issued a second non-final action on 10/28/2008. Said second non-final action allowed claims 43-92 and rejected claims 133-222 under 35 U.S.C. 101 for being directed to non-statutory subject matter. Claims 93 and 183 were rejected under statutory double patenting in view of U.S. Patent No. 7,062,749 and claims 113 and 203 were rejected under non-statutory double patenting in view of U.S. Patent No. 7,062,749. An amendment filed

01/26/2009 amended independent claims 133, 178, 183, and 203 to overcome the rejection under 35 U.S.C. 101. The amendment also amended independent claims 93 and 183 to incorporate the limitations of dependent claims 94 (now canceled) and 190 (now canceled) respectively. In response to the amendment, the examiner then mailed a notice of allowance on 04/13/2009 allowing claims 43-93, 95-183, 185-187, 191-200, and 203-222 (renumbered 1-173). No specific reasons for allowance was given by the examiner. However the prosecution history appears to indicate at least the following limitations to have been considered the allowable features:

(1) Limitations directed toward reviewing/retrieving data collected in a transaction record from a central message repository (See: Response filed 07/07/2008 and canceled claim 94: 01/26/2009)

(2) Limitations directed toward a means for updating a transaction record (See: canceled claim 190: 01/26/2009)

5. Of the six references in the currently filed Request, portions of the Production Workflow and Leymann '633 references were cited by the Applicant but were never previously discussed nor applied to the Cyr '674 patent during prior examination. None of the other four references were previously discussed by the examiner nor applied to any of the claims in the prosecution history of the Cyr '674 patent.

Substantial New Question of Patentability

6. For purposes of determination, independent claims 1, 51, and 140 are used as representative claims for the proposed rejections in the request. The italicized sections of independent claims 1, 51, and 140 below are utilized by the examiner to show how specific teachings of the proposed references create a substantial new question of patentability in light of the original prosecution history.

Claim 1:

A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

retrieving information from the central message repository.

Claim 51:

A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of origami message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message;

reviewing data collected in said transaction record;

wherein said original message data comprises status information of a process and/or sub process.

Claim 140:

An apparatus for use m an asynchronous messaging environment in a communication system or systems, wherein said messaging environment comprises at least one original message comprised of original message data, the apparatus comprising:

means for providing, through a monitoring message, at least part of said original message data to a central message repository;

means for populating a transaction record in said central message repository with said original message data provided by said monitoring message; and,

means for updating said transaction record;

wherein said original message data comprises stares information of a process and/or sub process.

Production Workflow

7. Production Workflow discloses various concepts, techniques, architectures, and implementations of workflow management systems.

The Request shows that Production Workflow appears to disclose, for independent claims 1, 51, and 140:

retrieving information from the central message repository;

reviewing data collected in said transaction record; and

means for updating said transaction record (Production Workflow: pages 44-46, 58-60, 105-107, & 366; See also the Request, pages 15-25)

Portions of the Production Workflow reference were cited by the Applicant during the prior examination of the Cyr '674 patent. However, the Production Workflow reference was never previously discussed nor applied in a rejection to the Cyr '674 patent during prior examination. The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

It is agreed that the consideration of the Production Workflow reference raises an SNQ as to independent claims 1, 51, and 140 of the Cyr '674 patent as pointed out above. There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not these claims are patentable.

Accordingly, the Production Workflow reference raises a substantial new question of independent claims 1, 51, and 140, which question has not been decided in a previous examination of the Cyr '674 patent nor was there a final holding of invalidity by the Federal Courts regarding the Cyr '674 patent.

Blackwell

8. Blackwell discloses a system for monitoring the operation of a distributed data processing system via the correlation of events through message sensing and capturing.

The Request shows that Blackwell appears to disclose, for independent claim 1:

retrieving information from the central message repository (See the Request, pages 27-36)

Blackwell was not of record in the prior examination.

It is agreed that the consideration of Blackwell raises an SNQ as to independent claim 1 of the Cyr '674 patent as pointed out above. There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not these claims are patentable.

Accordingly, Blackwell raises a substantial new question of independent claim 1, which question has not been decided in a previous examination of the Cyr '674 patent nor was there a final holding of invalidity by the Federal Courts regarding the Cyr '674 patent.

Advanced Workflow Solutions (AWS)

9. Advanced Workflow Solutions (AWS) discloses topics related to architecture, design, and implementation of IBM's FlowMark workflow management system.

The Request shows that Advanced Workflow Solutions (AWS) appears to disclose, for independent claims 1, 51, and 140:

retrieving information from the central message repository;

reviewing data collected in said transaction record; and

means for updating said transaction record (Advanced Workflow Solutions (AWS): Pages 81-91; See also the Request, pages 37-47)

Advanced Workflow Solutions (AWS) was not of record in the prior examination.

It is agreed that the consideration of Advanced Workflow Solutions (AWS) raises an SNQ as to independent claims 1, 51, and 140 of the Cyr '674 patent as pointed out above. There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not these claims are patentable.

Accordingly, Advanced Workflow Solutions (AWS) raises a substantial new question of independent claims 1, 51, and 140, which question has not been decided in a previous examination of the Cyr '674 patent nor was there a final holding of invalidity by the Federal Courts regarding the Cyr '674 patent.

Buhannic

10. Buhannic discloses a system for tracking the status of securities trades by monitoring messages related to said trades via a message broker server.

The Request shows that Buhannic appears to disclose, for independent claims 1, 51, and 140:

retrieving information from the central message repository;

reviewing data collected in said transaction record; and

means for updating said transaction record (Buhannic: Paragraphs 15, 17-22, & 28; See also the Request, pages 51-58)

Buhannic was not of record in the prior examination.

It is agreed that the consideration of Buhannic raises an SNQ as to independent claims 1, 51, and 140 of the Cyr '674 patent as pointed out above. There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not these claims are patentable.

Accordingly, Buhannic raises a substantial new question of independent claims 1, 51, and 140, which question has not been decided in a previous examination of the Cyr '674 patent nor was there a final holding of invalidity by the Federal Courts regarding the Cyr '674 patent.

Leymann '111 and Leymann '633

11. These two references are cited in the request as references used in combinations with the Advanced Workflow Solutions (AWS) reference above to read on dependent claims. In light of the SNQ raised in view of the Advanced Workflow Solutions (AWS) reference, these two references also raise an SNQ in view of dependency.

Leymann '111 was not of record in the prior examination and thus was not previously discussed by the examiner nor applied to any of claims in the prior examination. Leymann '633

was cited by the Applicant during the prior examination of the Cyr '674 patent. However, the Leymann '633 reference was never previously discussed nor applied in a rejection to the Cyr '674 patent during prior examination. The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

It is agreed that the consideration of these two references in combination with the Advanced Workflow Solutions (AWS) reference raises an SNQ as to the claims of the Cyr '674 patent as pointed out above. There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not these claims are patentable.

Accordingly, the Leymann '111 and Leymann '633 references in combination with the Advanced Workflow Solutions (AWS) reference raise a substantial new question, which question has not been decided in a previous examination of the Cyr '674 patent nor was there a final holding of invalidity by the Federal Courts regarding the Cyr '674 patent.

Scope of Reexamination

12. Claims 1-173 will be reexamined as requested in the Request.

Conclusion

13. Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,603,674 B2 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

All correspondence relating to this ex parte reexamination proceeding should be directed as follows:

By U.S. Postal Service Mail to:

Mail Stop Ex Parte Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to:

(571) 273-9900
Central Reexamination Unit

By hand to:

Customer Service Window
Randolph Building
401 Dulany St.
Alexandria, VA 22314

By EFS-Web:

Registered users of EFS-Web may alternatively submit such correspondence via the electronic filing system EFS-Web, at

https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html

EFS-Web offers the benefit of quick submission to the particular area of the Office that needs to act on the correspondence. Also, EFS-Web submissions are "soft scanned" (i.e., electronically uploaded) directly into the official file for the reexamination proceeding, which offers parties the opportunity to review the content of their submissions after the "soft scanning" process is complete.

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/Adam L Basehoar/

Primary Examiner, Art Unit 3992

Substitute Form for PTO/SB/08a

INFORMATION DISCLOSURE STATEMENT				Control Number	90/009,960
				Application Number	11/398,133
				Filing Date	April 5, 2006
				First Named Inventor	Vincent R. Cyr
				Group Art Unit	2194 (Prior Examination)
				Examiner Name	HO, Andy (Prior Examination)
Sheet	1	of	1	Attorney Docket Number	OPEN2200-1

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number Number-Kind Code (If known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	A1	US 7003781	02-21-2006	Blackwell et al.	
	A2	US 6122633	09-19-2000	Leymann et al.	
	A3	US 6073111	06-06-2000	Leymann et al.	
	A4	US 20020038276	06-26-2001	Buhannic et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code (If known)	Publication Date MM-DD-YYYY (Number 43)	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear

Examiner Signature	/Adam Basehoar/	Date Considered	11/28/2011

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /AB/

Receipt date: 11/07/2011

90009960 - GAU: 3992

Substitute Form PTO/SB/08b

INFORMATION DISCLOSURE STATEMENT				Control Number	90/009,960
				Application Number	11/398,133
				Filing Date	April 5, 2006
				First Named Inventor	Vincent R. Cyr
				Group Art Unit	2194 (Prior Examination)
				Examiner Name	HO, Andy (Prior Examination)
Sheet	1	of	1	Atty Docket Number	OPEN2200-1

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
	C1	LEYMANN, FRANK, and ROLLER, DIETER, Production Workflow Concepts and Techniques, Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0, with attached Copyright Certificate from Library of Congress	
	C2	HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00, available at http://redbooks.ibm.com.	

Examiner Signature	/Adam Basehoar/	Date Considered	11/28/2011	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /AB/

Reexamination	Application/Control No. 90009960	Applicant(s)/Patent Under Reexamination 7603674
	Certificate Date	**Certificate Number**

Requester Correspondence Address: ☐ **Patent Owner** ☒ **Third Party**
SPRINKLE IP LAW GROUP 1301 W. 25TH STREET SUITE 408 AUSTIN, TX 78705

LITIGATION REVIEW ☒	ALB (examiner initials)	11/28/2011 (date)
Case Name		Director Initials
2:11-cv-01609-JCJ (Open)		ADK for SY

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	**NUMBER**
1. None Found	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	11/28/2011	ALB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

DECLARATION UNDER 37 C.F.R. §1.131

I, Vincent R. Cyr, make this declaration in support of YYZ's Owner's Statement, filed herewith, and in the above identified reexamination, and do hereby declare the following:

1. I am a named inventor of the above-identified patent (the" '674 patent" or the "patent").

2. I am the managing partner of YYZ LLC, the owner of the patent.

3. I have been duly authorized by YYZ LLC to file this declaration.

4. I have read the Order Granting Request For Ex Parte Reexamination dated December 1, 2011 (the "Order") in connection with the present reexamination.

5. The Order, at paras. 5 and 6, identifies a substantial new question of patentability.

6. In the Order, a book by Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques, Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (hereafter "Production Workflow") is identified as raising a substantial new question of patentability with respect to claims 1, 51 and 140

of the ‘674 Patent.

7. In the Order, US Patent No. 7,003,781 issued to Blackwell et al. (hereafter "Blackwell") is identified as raising a substantial new question of patentability with respect to claims 1 of the '674 Patent.

8. In the Order, US Patent Publication No. 2002/0038276 issued to Buhannic et al. (hereafter "Buhannic") is identified as raising a substantial new question of patentability with respect to claims 1, 51, and 140 of the '674 Patent.

9. I have read and understand the Production Workflow, Blackwell and Buhannic references and the corresponding material in the Order concerning Production Workflow, Blackwell and Buhannic.

10. Assuming for the moment that Production Workflow, Blackwell and Buhannic function as the Order proposes, the inventions defined and set forth in at least independent claims 1, 51 and 140 (the “independent claims”) of the patent were conceived in this country at least as early as December 31, 1999 which is before the copyright date printed on the Production Workflow reference; well before the filing date of Blackwell (May 5, 2000) and well before the priority date of Buhannic (June 26, 2000); and there was diligent reduction to practice following conception.

11. Conception of the inventions defined by the independent claims was at least as early as December 31, 1999, is illustrated in Exhibits A-E hereto and my testimony below.

12. Exhibit A is a memorandum I prepared for our customers of my company Promenix, Inc. dated August 1998.

13. I do not claim that conception dated from Exhibit A, rather Exhibit A is the first evidence I can find that I began to recognize and appreciate the components of the inventions defined in the independent claims.

14. At about the date of Exhibit A, Promenix was engaged in installing Enterprise Application Integration systems in companies using SAP's R/3, as shown in the Exhibit.

15. Exhibit A came about because I got interested in the capabilities of Intelligent Messaging to solve Application Integration issues. Even with systems with applications designed to work together, like R/3, legacy apps, "add-on" systems and communication backbones create integration issues.

16. Intelligent messaging helps address these issues by, as I noted at the time:

> **Intelligent Messaging Can Help**
>
> Intelligent messaging is the transformation and transmission of data from/to specific locations based upon specific data content across multiple hardware and software platforms. Intelligent messaging comprises asynchronous communications, rules-based decisions, and message routing. Full-powered intelligent messaging is capable of dynamic, real-time, application and maintenance of business logic abstracted from individual application systems. [Page 5, Exhibit A.]

17. During 1999, I increasingly became interested by the possibilities of messaging in what was the then-new field of business monitoring.

18. During 1999, I conceived of the inventions as defined by at least the independent claims by forming a definite and permanent idea of the complete

and operable inventions realized and defined by the independent claims.

19. During 1999, I formed a definite and permanent idea that monitoring messages could be used from a messaging system (e.g., IBM MQSeries) with a central message repository and providing, through a monitoring message, at least part of said original message data to that repository in order to identify the status of a business process and its various elements. Such could be used internally for status updates, disseminated to prospective customers, used by investors, etc. I also began to, after conception, diligently reduce the inventions defined by the claims to practice.

20. Exhibit B is a spreadsheet initially created by me in our offices in Chadds Ford, PA on January 11, 2000, after I formed the definite and permanent idea referred to in the paragraph above and in my effort to diligently reduce the inventions as defined by the claims to practice. A screen printout of the document properties of Exhibit B (first page of the Exhibit) shows the creation date of January 11, 2000.

21. The spreadsheet at page 3 of Exhibit B shows, at the first tab labeled Process Elements, and the third page of the Exhibit (the tabs are reprinted at page 2 of Exhibit B) a sample business process broken into possible subelements in preparation for the sample run of the second tab of Exhibit B.

22. The spreadsheet at page 4 of Exhibit B shows, at the second tab of Exhibit B , a sample run of a simulation of a process with subprocesses, as well as data. This run was undertaken on our SAP R/3 installation in our offices, and was undertaken at least in part to capture data through a monitoring message

("original message data") in a database or central message repository.

23. Exhibit C shows (XML) code that was developed and used in constructing sample runs, such as the one shown in Exhibit C. Such code would be used in the course of providing, through a monitoring message, at least part of original message data to a central message repository in order to identify the status of a business process and its various elements, and the code shown in Exhibit C was developed by me, and others under my direction, such as Kenneth Fritz, the co-inventor and employee at Promenix at the time in Promenix' offices in Chadds Ford.

24. The process, simulation, and data referred to in Exhibits A - C were the monitoring messages and the central message repository of the independent claims of the patent, each of which reference a monitoring message and central message repository.

25. Exhibit D was prepared by me on March 9, 2000 in my office at Chadds Ford, PA in my continuing diligent effort to reduce the inventions as defined by the claims to practice.

26. Exhibit D is an initial draft of an internal specification regarding design parameters of the inventions defined by the claims of the patent.

27. Exhibit D also contains information that was also used in the patent. See the Introduction in light of the Background section of the patent; Diagram 1 of Exhibit D in light of exemplary Figure 1 and Figure 2 of the patent.

28. Exhibit D also contains references to monitoring messages and database or central message repository as defined in the independent claims.

a. For example, the final paragraph of the Introduction section states:

> Using MQSeries and MQSeries Integrator, we are going to simulate a process and its related sub-processes. As each event takes place, we are going to send messages with information pertaining to that event through MQSI to a database. This database will hold the messages (in XML format), which we will use to report against. The diagram 1.0 shows the overall layout of this concept.

(as well as the referenced diagram 1.0 on the next page of Exhibit D.)

b. For example, the final paragraph of the Development Approach states:

> Database update – This process will take XML event messages from MQSI and insert them into a database of messages. The key needs to be defined which will allow for inquiry and reporting. The entire XML message will be placed in one field of the database.

29. Co-inventor Kenneth Fritz had been assisting me in diligently reducing the claims to practice. Mr. Fritz did so at our offices in Chadds Ford, and evidence of his diligence is seen Exhibit E, which is draft documentation of a model, written in Visual Basic 6.0 and utilizing IBM's MQSeries ActiveX objects, dated August 7, 2000. Exhibit E also contains information that was also used in the patent. See, e.g., Figure 1 of Exhibit E and Figure 5 of the patent.

30. Therefore the methods and apparatus in accordance with at least the independent claims of the patent were conceived at least as early as December 31, 1999 and diligently reduced to practice following conception by constructing and writing software code and documentation in accordance with Exhibits A-E and conducting tests that established that the methods and apparatus of the inventions defined by the claims worked for their intended purposes, which all occurred prior to the 2000 copyright date of Production

Workflow, the May 5, 2000 filing date of Blackwell and the June 26, 2000 priority date of Buhannic.

31. Moreover, it should be noted, the above recitation is in support of the Owner's Response to the substantial new question of patentability, and as noted in that response, I have filed this declaration only to antedate the use of Production Workflow, Blackwell and Buhannic, and have assumed only for the purposes here that such do serve as prior art. However, as noted in our Response, we also do not believe the references are prior art, and we do, in the event an Office Action is issued with regard to Production Workflow, Blackwell and/or Buhannic as references, reserve all rights to file further and supplemental declarations antedating Production Workflow, Blackwell and Buhannic.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: February 1, 2012

VINCENT R. CYR
YYZ LLC

EXHIBIT A

Systems Integration:

Using Intelligent Messaging with SAP R/3™

Vincent R. Cyr
President, Promenix Inc.

August 1998

Executive Summary

Implementing SAP R/3 involves many elements; Business process understanding, software configuration, education of users and support personnel, and a myriad of other related activities. One of the more challenging elements involves the integration of R/3 with all of the other systems in your organization (and possibly with systems external to your organization). This paper provides an insight to the use of *Intelligent Messaging* (IM) to speed up the integration process as well as providing a long-term strategy for additional integration efforts.

Whether you believe in *Best in Class* or *Best of Breed,* the fact remains that heterogeneous systems exist in your organization and they probably will continue to do so for many years to come. In fact, given the proliferation of packaged applications, custom development tools, and Internet –based applications, heterogeneous systems are likely to increase in number rather than decrease. The need for integrating these systems continues to challenge all organizations.

Intelligent messaging provides several benefits to an organization: asynchronous communications, data transformation, message routing, and most importantly, rules-based decision processes. All of these components combined make for a flexible, reliable, and maintainable infrastructure for application integration efforts. With the abstraction of business logic away from individual programs, changes can be made much more quickly and with fewer staff. People are more focused on solving the business problem instead of the technical problems regarding the integration of these disparate systems.

Using the following sections, a cohesive strategy can be developed to enable your organization to solve these integration problems.

Challenges of Systems Integration

Today, more than ever, well-executed systems integration efforts are the difference between successful implementations of software solutions and failures destined to the "great idea, bad implementation" trash heap. There is no magic potion, no silver bullet, when it comes to linking these multi-architected, multi-OS, multi-communication protocol environments. In most cases, if there are two systems that can be integrated efficiently, it is most likely an accident rather than a planned occurrence. If the need for integration is going to continue to expand at these rates, what we need is an understanding of the elements affecting our abilities to deliver. What tools, methods, and approaches could we use to increase our likelihood of success? Let us understand the elements affecting systems integration: Business processes, heterogeneous systems, scarcity of talent, and the pace of change.

Understanding of Business Processes

As more and more companies embrace ERP core solutions, by necessity, they become more focused on the core business process rather than the event or base transaction. This processed focused view has been impressed upon our organizations since Hammer & Champy published "Reengineering the Corporation". In addition, SAP AG has made process-oriented configuration of their R/3 software product easier and easier as each new release of the software is produced.

Unfortunately, very few legacy systems are process oriented. They are transaction and/or event based. This presents a problem when trying to establish integration points with an ERP system that is being implemented based on process threads. This means that business and systems analysts are required to understand how a legacy system fits within and entire process. This work should evolve into process maps that detail what system is involved in which part of the process. This is a vital and crucial step in the systems integration process that will lead to a better understanding of the systems that run your organization. Time consuming? Yes. A waste of time? Absolutely not! This is the reference point for your organization's application portfolio. It is from this that you can determine what system stays, goes, or needs to be phased out over time. It outlines areas that can be supplemented or replaced by your ERP system. It also provides visible identification of areas where additional software (non-ERP) may add value in a process thread.

You do not need to do this in one giant step. Start one process thread at a time. Require all new application development efforts to include supporting process diagrams and flows. As systems are being upgraded, add these process tasks to the effort. Over time, this discipline can become a natural part of your organization's work habits.

Systems, Systems, and more Systems

The proliferation of software and the solutions that can be provided by that software continues at what seems to be an unending pace. Legacy systems, once thought to have limited existences, now are being given new life as a result of Year 2000 efforts. Instead of turning them off, their value to the organization continues into the next millennium.

The packaged software supply continues to grow as the barrier to entry for software companies continues to be limited only by ideas and people to execute them; capital is plentiful and there are no other real assets to buy. These range from large ERP packages to small, "point solution" packages designed to solve a unique business function. The result of this: more software packages for you to incorporate into your organization that meet specific business processes and functions.

Robust application development environments and tools such as Borland's Delphi, Microsoft's Visual Studio, and others, are allowing for the creation of new software systems by internal application development departments at a blistering pace. Instead of large development projects aimed at the whole corporation, departments are now able to create their own applications very quickly. With the increased presence of the Internet and E-Commerce, the need for more systems, quickly, is increased. The result: more systems to integrate with existing systems.

When you put all of these factors together, your get systems, systems, and more systems with no relief in sight! What is even more problematic is that these systems need to communicate with each other. As mentioned earlier, businesses are becoming more process-oriented in how they behave. Systems must be integrated to support these processes. If you cannot stop the proliferation of systems, you must find a way to link them together quickly, efficiently, and in a way that long-term support and maintenance is possible.

The Talent Shortage

Numerous studies are confirming what has been known for several years – there are not enough skilled resources to do the work that is required. The Information Technology Association of America estimates that there are currently 340,000 unfilled positions in the computer industry. Studies from the American Electronics Association show that graduates in computer science and math decreased 29% from 1985 to 1996. With an industry growth rate exceeding 15%, it becomes quite apparent that there is a major talent shortage (Figure 1.)

What does this mean to those having to integrate systems? It means you must find methods and tools that can make those resources that you have more productive. You need to re-think the traditional approaches to systems integration; the coding of point-to-point program interfaces that link a program from one system to a program in another system. This traditional approach is labor intensive, something that you do not have available. In addition, this approach lends itself to inconsistencies in development,

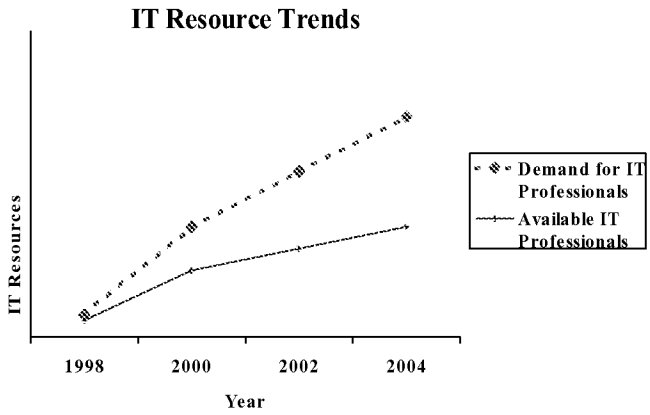


Figure 1.

implementation, and support.

Reductions in Timeframes

When was the last time a project was allowed 36 months, 24 months, or even 18 months to complete? In today's fast-paced business climate, systems projects have short timeframes of 3–6 months. If there are many systems to integrate, there is no time to code these integration points together. There is no time to learn a new programming language or architecture. The only activity you have time for is figuring out where these integration points need to be and how you can patch it together quickly. The pressure to speed up integration is not about to end. Therefore, new ways to improve productivity reduce learning curves, and focus on value-added activities needs to be embraced.

Intelligent Messaging Can Help

Intelligent messaging is the transformation and transmission of data from/to specific locations based upon specific data content across multiple hardware and software platforms. Intelligent messaging comprises asynchronous communications, rules-based decisions, and message routing. Full-powered intelligent messaging is capable of dynamic, real-time, application and maintenance of business logic abstracted from individual application systems. Let's examine these components in more detail.

Asynchronous Communications

Asynchronous communications means that when an application is sending data to another application, the sending application does not wait for the receiving application to process the data before moving on. In military terms, think of this as a "fire and forget" process similar to a cruise missile after it has been launched. The ship or aircraft, once a launch has been executed, can sail or fly wherever it wants to with a highly confident assurance that the missile will reach its target without any other assistance. The assumption is clear: if I send it, it will be processed.

Now, with asynchronous communications, it is prudent to include a queuing mechanism in order to make sure that in the event that the receiving system is not active, data is not lost. This queuing is also important for situations that require rollbacks or reruns of processing. These queues act as data buckets that hold data temporarily until the appropriate applications acknowledge that it is safe to empty the buckets. Keep in mind that the acknowledgement is primarily to the queuing mechanism; not the sending application. The sending application is busy doing something else at this time; not waiting around for some acknowledgement.

This is beneficial because an application that uses asynchronous communications does not need to wait around for a response from some external system before continuing its processing. Networks do not have to maintain open sessions across applications waiting for responses. In short, applications and networks become more efficient. Data can be processed and routed with much more expediency. With the increased need for bandwidth of the network, moving messages is much more "bandwidth friendly" than synchronous communications within a network or across larger WANs.

Rules-Based Decisions

Application logic, in its essence, is really an organization of decisions needing to be applied to a specific piece of data. These are the rules that must be followed in order for information to be produced.. Given the computer's strength in processing rules, the more the rules of an application can be organized, optimized, and de-coupled from the file-handling and data handling routines, the more the power of the computer can be utilized. In addition, these rules can also me managed and maintained more effectively;

an extremely valuable attribute given today's rapidly changing business demands. There is a simplicity that can be achieved by instructing the computer to do a specific action when the data contains a certain value.

Routing

A message, like a letter sent to a friend, has no value unless it is received. For letters, we have learned to trust FedEx to guarantee delivery to the right destination. All FedEx letters go to Memphis, their destinations are determined, and then they are put onto the plane going to that destination. That is what routing does for intelligent messaging. Messages have destinations that are determined in various ways; some destinations are pre-defined, some are based upon data content, and some are based upon lack of content. Routing takes the message, determines the correct destination, and sends it on its way. It is like a large mail-sorter; look at the address and send it on its way. One important element is the ability to take one inbound message and send different pieces to different locations. This provides a very efficient method of sending data to many places with a single input message.

Dynamic Application and Maintenance of Business Logic

There is one element that is not inherent to intelligent messaging but is such a critical component, it needs to be considered. The rules and routing are very powerful in the organization of your business logic. However, if these are static, hard-coded, difficult-to-maintain blobs of code, they do nothing in making your systems adaptable and flexible. Unless this business logic can be easy to change and maintain, your change request will sit in some development queue that will be accessed sometime in the year 2000 – right behind the 500 requests that came in before yours. Do not worry, your business unit manager will make sure that no area of his business will change for the next few years.
Remember the talent shortage? Remember the reduced timeframes? You may have a long wait if you do not have anyone around who can make these changes. What you must consider is a solution that will enable you to change these applications much faster that the traditional development path. You must have rules that are easy to develop and maintain.

SAP R/3

Much has already been said and written about SAP and its client/server ERP product, R/3. It is a powerful core enterprise package that has become the backoffice application infrastructure for thousands of companies. Since its existence in your organization is either real or imminent, your task is to integrate your existing systems to it. You may have to also integrate new add-on functionality as part of the R/3 implementation project. You also may have to integrate it with other companies that you do business with. All of these scenarios are real and their challenges can sometimes be minimal or they can be quite extensive. Fortunately, the ability to integrate these systems with R/3 has improved dramatically over the past few years; mainly as a result of SAP embracing an asynchronous messaging architecture.

Messaging Inherent within SAP

In 1994, SAP introduced Application Link Enabling (ALE). Designed to promote R/3 to R/3 communications, this architecture used messages from business scenarios to communicate asynchronously from one R/3 system to another. For example, the process of distributing changes to a customer master record from a central R/3 system to R/3 systems located in other divisions or plants was accomplished by sending a message (in the form of an SAP Intermediate Document record (IDOC)) to the target systems at the time of the customer record change. This architecture has since evolved to now be the core of the new Business Framework from SAP. This framework promotes a "loosely-coupled" integration between different R/3 modules. This allows for the propagation of R/3 systems to satisfy business requirements while maintaining integration between components. This is accomplished using the asynchronous messaging approach of ALE and IDOCs. It is important to note that R/3, while capable of these messaging capabilities, is first and foremost a business application package, not an intelligent messaging package. R/3 should not be designated as your message hub. It is your core application software that can efficiently and effectively operate in an asynchronous message architecture.

Value Provided to SAP R/3 by Intelligent Messaging

Whether intentional or unintentional, by implementing SAP R/3, you have started the introduction of a message-oriented architecture into your organization. This added benefit provided by R/3 will move your organization away from inflexible, inefficient, hard-to-manage systems to those that are more adaptive and flexible to your company's demands.

Flexible, Adaptive Integration Architecture

As mentioned earlier, systems within an organization change almost daily. New systems are created, old ones are changed, and some are taken out of service. Business needs are constantly challenging the organization to have information readily at hand. Given SAP R/3's flexible approach to message exchange, if you can move data from and to R/3 via this method, you can start making your new and existing systems just as flexible and adaptive. Intelligent messaging can help turn these static, inflexible systems into a continuation of a business process that includes R/3. Changes can be made quicker. Systems can be added or removed quicker. Your R/3 system will now be able to exchange information within your organization as well as to systems external to your organization. This improves and enriches the information within the R/3 system and your organization. You increase the return on your investment in R/3.

Abstraction of Application Logic Away from Programs

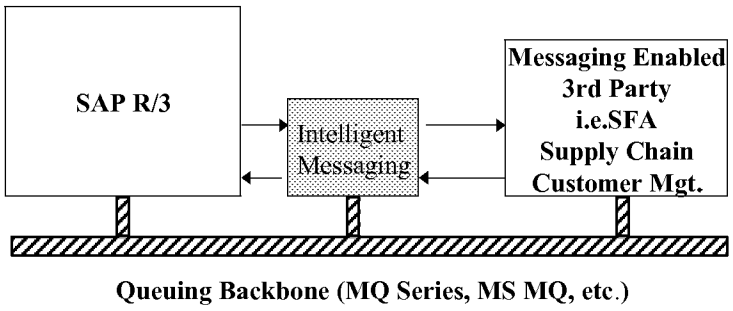
One of the benefits of R/3's ALE approach is that the need to perform programming in R/3 to integrate systems has been greatly reduced. Since there are many different business scenarios that have been developed by SAP into ALE/IDOC combinations, many interfaces require little to no programming at all in R/3. Business rules can be configured for the appropriate logic and messages can be routed based upon those rules. If the target or source systems are enabled by intelligent messaging, the need for any programming to be performed has been greatly reduced. If a change is required to support a new business rule, R/3 and the related systems can be changed very quickly. Programs do not have to be changed, compiled, or promoted. The skill set required to perform these changes may already exist within your organization.

Focused Efforts of Solving Business Problems, Not Technology Problems

Too often in our business, the integration effort ends up focusing on the technical challenges instead on solving the business problem. This is not a fault of the people working on these issues. It is a result of not having a common approach to integrating these systems, not having a message-oriented architecture that makes data easier to move and distribute, and not having business rules abstracted from the programs to allow for quicker, easier changes.
There is only so much time in a day. Do you want your people trying to figure out how to get an ASCII file into EBCDIC or do you want them determining what rule and route to apply if the data is coming from a specific, high-volume customer? Using R/3 and intelligent-messaging, it becomes easier to focus on the business problem, not the technology problem.

Enhanced Functionality from Legacy and Third Party Applications

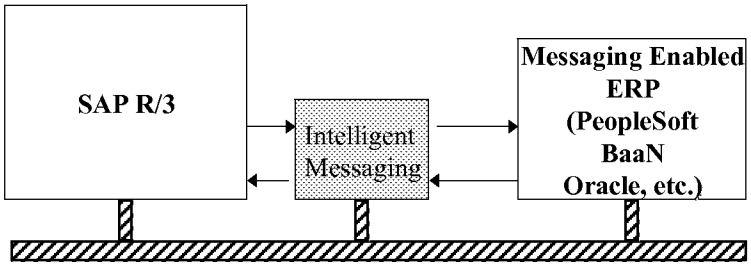
The following diagrams depict various applications of intelligent messaging with SAP R/3. As you can see, the flexibility that is gained from intelligent messaging is only limited to the ingenuity of your people. The first diagram shows a third-party application, such as sales force automation (SFA) connected to R/3.



Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 to non-R/3 communications can be integrated

This speeds up the integration process and reduces the need for the 3rd party software to write integration points for every ERP or legacy system. Instead, they write to a common messaging API.

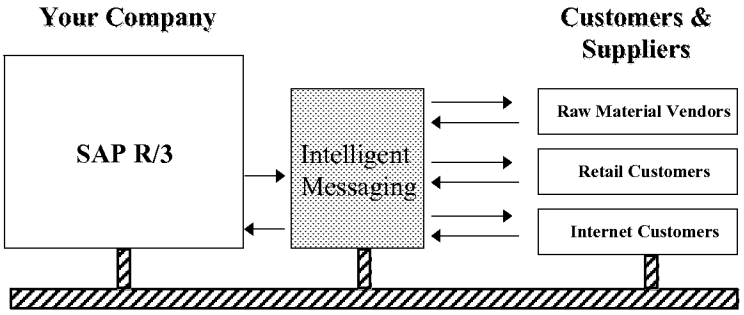
In the next figure, intelligent messaging is used to connect SAP R/3 with another ERP package such as PeopleSoft or BaaN. Because of acquisitions and industry consolidations, many organizations are finding themselves with more than one ERP system. Intelligent messaging can be used to leverage the investments made in both packages.



Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 to other ERP packages within an organization can be integrated.

This speeds up the integration process and reduces the need to wait for a standards group to define each ERP process. The ERP vendors "message enable" their packages (i.e. SAP's ALE) in order to facilitate this communication.

As your organization increases its electronic communication with external customers and suppliers, using intelligent messaging will permit you to apply specific rules and routing information to your data depending on the data content. Certain customers may have priority over others. Certain vendors may receive certain messages based on the nature of the parts being supplied.

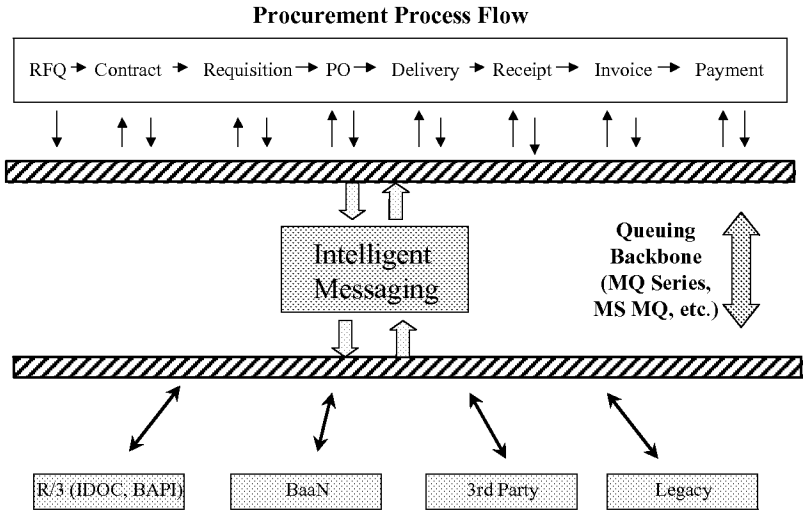


Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 information to non-SAP systems of suppliers and customers can be integrated. This cross-organizational interchange of information improves the total order to fulfillment to cash process.

It is important to remember that your partners have many systems that are disparate from your own . Using intelligent messaging, they are able to keep their systems while still being able to take advantage of cross-organizational information flows.

This last diagram presents a more process-oriented view of intelligent messaging and how all of these pieces start to fit together. As you can see, a process-oriented approach coupled with intelligent messaging leads to a workflow-driven organization that has messages traveling from business event to event via the intelligent messaging engine. This messaging engine exchanges information with various systems (legacy, ERP, 3rd party) as the process is executed.

Process Oriented Application Integration



Conclusion

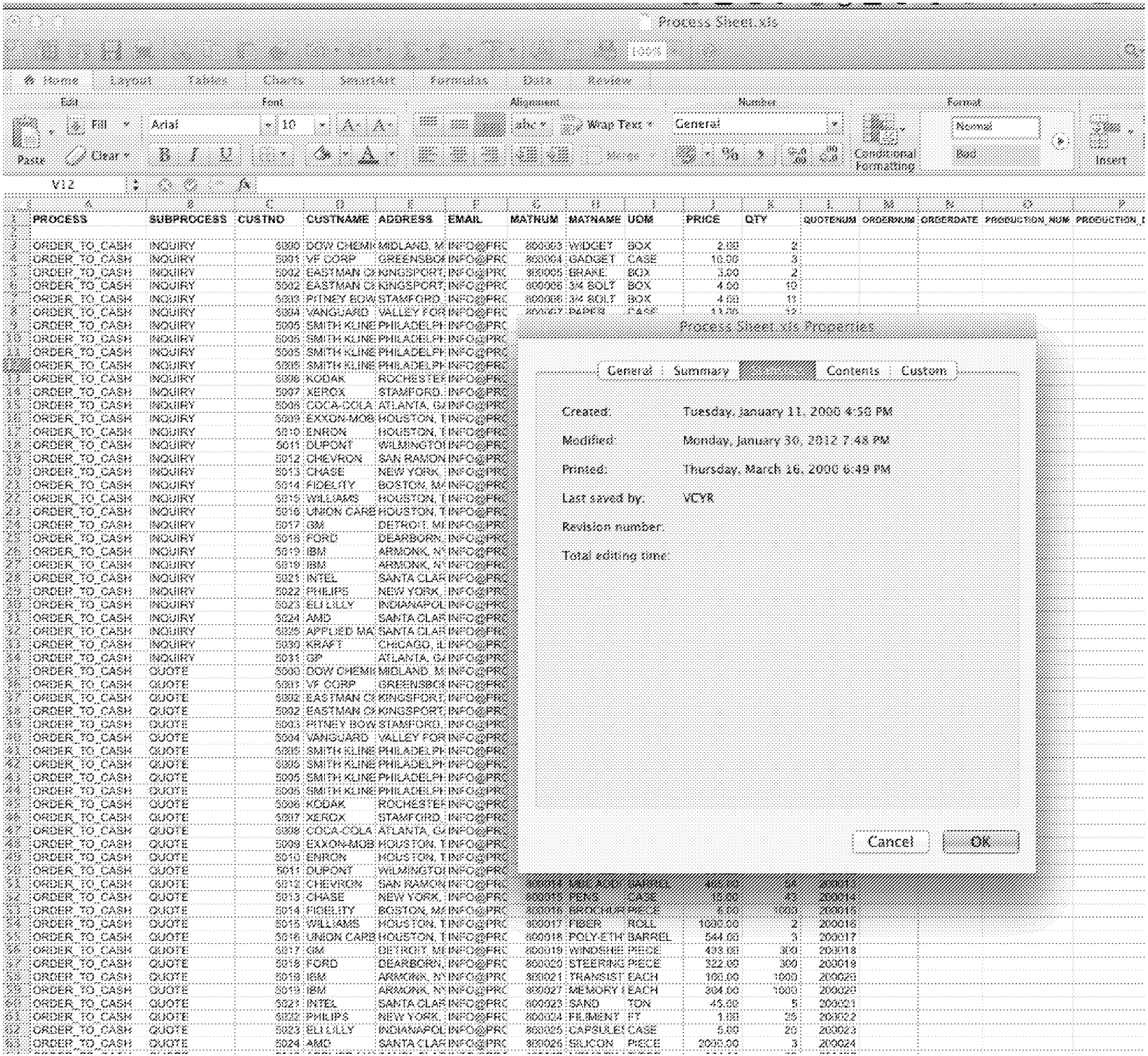
There are many challenges when implementing systems. Business process design, software configuration, training, resistance to change, etc. One challenge that is common to all organizations is the need to integrate all of these systems together. Alone, each system performs a specific piece of a complete business process. Using SAP R/3, more of these processes can be integrated within one application package. However, the legacy systems that remain, the additional third-party software, and internal custom development, all must be tied together with R/3. Intelligent messaging, with its asynchronous architecture, flexibility, and abstraction of business logic, provides a solution to bringing these disparate pieces together. Keep in mind, there are no silver bullets. This still requires strategic thinking, careful planning, and commitment to execution. The short-term payback is an accelerated method in completing your integration efforts for your R/3 implementation. The long-term payback is an integration architecture that lends itself to faster response to changing business needs.

About Promenix

Promenix is a systems integration service provider focusing on Enterprise Application Integration around SAP R/3. Located outside of Philadelphia, PA, Promenix helps its customers integrate their legacy and 3rd-party packages with SAP R/3 using such integration software as MQ Series from IBM and MQ Series Integrator from New Era of Networks, Inc.

They can be reached at (610) 361-1560, www.promenix.com.

EXHIBIT B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Layout
Tables
Charts
SmartArt
Formulas
Data
Review
Edit
Font
Alignment
Number
Format
Fill
Arial
10
Wrap Text
General
Normal
Bad
Paste
Clear
Conditional Formatting
Insert
V12
PROCESS
SUBPROCESS
CUSTNO
CUSTNAME
ADDRESS
EMAIL
MATNUM
MATNAME
UOM
PRICE
QTY
QUOTENUM
ORDERNUM
ORDERDATE
PRODUCTION_NUM
ORDER_TO_CASH
INQUIRY
QUOTE
Process Sheet.xls Properties
General
Summary
Contents
Custom
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Modified:
Monday, January 30, 2012 7:48 PM
Printed:
Thursday, March 16, 2000 6:49 PM
Last saved by:
VCYR
Revision number:
Total editing time:
Cancel
OK

HP_1003_0333

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material	Customer Inquiry	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Customer		Sales Group					
				Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material	Customer Quotation	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Inquiry		Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material	Customer Outline Agreement	Sales org.					
		Batch		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
Order-to-cash	Create Sales Order	Material	Sales Order	Sales org.					
		Batch	Production Order	Division					
		Business Partner	Manufacturing Order	Sales Office					
		Time	Purchase Req.	Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
		Sales Promotion							
Order-to-cash	Ship Product	Material	Outbound Delivery	Shipping Point					
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Credit Account							
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
Order-to-cash	Invoice Customer	Material	Customer Billing Documen						
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Contract							
		Customer Complaint Order							
		Credit Memo Request							
		Debit Memo Request							
		Returns							
Order-to-cash	Receive Payment	Invoice Number							
		Material							
		Customer							

Process Elements | Raw Data | Sheet3

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material BOM Business Partner Customer	Customer Inquiry	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material BOM Business Partner Time Customer Inquiry	Customer Quotation	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation	Customer Outline Agreement	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Sales Order	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation Customer Contract Sales Promotion	Sales Order Production Order Manufacting Order Purchase Req.	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Ship Product	Material Batch Business Partner Time Customer Sales Order Customer Credit Account Customer Inquiry Customer Quotation Customer Contract	Outbound Delivery	Shipping Point					
Order-to-cash	Invoice Customer	Material Batch Business Partner Time Customer Sales Order Customer Contract Customer Complaint Order Credit Memo Request Debit Memo Request Returns	Customer Billing Document						
Order-to-cash	Receive Payment	Invoice Number Material Customer Amount							

PROCESS	SUBPROCESS	CUSTNO	CUSTNAME	ADDRESS	EMAIL	MATNUM	MATNAME	UOM	PRICE	QTY	QUOTENUM	ORDERNUM	ORDERDATE	PRODUCTION_NUM	PRODUCTION_DATE	PRODUCTION_LOC	PRODUCTION_STATUS	AMT	TERMS	SHIP_DATE	INVOICE_DATE	EVENT_DATE	EVENT_TIME
ORDER_TO_CASH	INQUIRY	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5001	VF CORP	GREENSBOF	INFO@PRC	800004	GADGET	CASE	10.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10									NET/30				
ORDER_TO_CASH	INQUIRY	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11									2/10				
ORDER_TO_CASH	INQUIRY	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12									2/10				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21									NET/30				
ORDER_TO_CASH	INQUIRY	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11									NET/30				
ORDER_TO_CASH	INQUIRY	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23									NET/30				
ORDER_TO_CASH	INQUIRY	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11									NET/30				
ORDER_TO_CASH	INQUIRY	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24									NET/30				
ORDER_TO_CASH	INQUIRY	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54									NET/30				
ORDER_TO_CASH	INQUIRY	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43									2/10				
ORDER_TO_CASH	INQUIRY	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000									2/10				
ORDER_TO_CASH	INQUIRY	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25									NET/30				
ORDER_TO_CASH	INQUIRY	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30									NET/30				
ORDER_TO_CASH	INQUIRY	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5									NET/30				
ORDER_TO_CASH	QUOTE	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
ORDER_TO_CASH	QUOTE	5001	VF CORP	GREENSBOF	INFO@PRC	800004	GADGET	CASE	10.00	3	200002								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	QUOTE	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	QUOTE	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5	200006								NET/30				
ORDER_TO_CASH	QUOTE	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21	200007								NET/30				
ORDER_TO_CASH	QUOTE	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
ORDER_TO_CASH	QUOTE	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2	200009								NET/30				
ORDER_TO_CASH	QUOTE	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	QUOTE	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
ORDER_TO_CASH	QUOTE	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24	200012								NET/30				
ORDER_TO_CASH	QUOTE	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54	200013								NET/30				
ORDER_TO_CASH	QUOTE	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43	200014								2/10				
ORDER_TO_CASH	QUOTE	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000	200015								2/10				
ORDER_TO_CASH	QUOTE	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2	200016								NET/30				
ORDER_TO_CASH	QUOTE	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3	200017								NET/30				
ORDER_TO_CASH	QUOTE	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300	200018								NET/30				
ORDER_TO_CASH	QUOTE	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300	200019								NET/30				
ORDER_TO_CASH	QUOTE	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000	200020								NET/30				
ORDER_TO_CASH	QUOTE	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
ORDER_TO_CASH	QUOTE	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5	200021								NET/30				
ORDER_TO_CASH	QUOTE	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25	200022								NET/30				
ORDER_TO_CASH	QUOTE	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	QUOTE	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	QUOTE	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
ORDER_TO_CASH	QUOTE	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30	200026								NET/30				
ORDER_TO_CASH	QUOTE	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5	200027								NET/30				
ORDER_TO_CASH	AGREEMENT	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
ORDER_TO_CASH	AGREEMENT	5001	VF CORP	GREENSBOF	INFO@PRC	800004	GADGET	CASE	10.00	3	200002								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	AGREEMENT	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21	200007								NET/30				
ORDER_TO_CASH	AGREEMENT	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
ORDER_TO_CASH	AGREEMENT	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2	200009								NET/30				
ORDER_TO_CASH	AGREEMENT	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	AGREEMENT	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
ORDER_TO_CASH	AGREEMENT	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24	200012								NET/30				
ORDER_TO_CASH	AGREEMENT	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54	200013								NET/30				
ORDER_TO_CASH	AGREEMENT	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43	200014								2/10				
ORDER_TO_CASH	AGREEMENT	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000	200015								2/10				
ORDER_TO_CASH	AGREEMENT	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2	200016								NET/30				
ORDER_TO_CASH	AGREEMENT	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3	200017								NET/30				
ORDER_TO_CASH	AGREEMENT	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300	200018								NET/30				
ORDER_TO_CASH	AGREEMENT	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300	200019								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5	200021								NET/30				
ORDER_TO_CASH	AGREEMENT	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25	200022								NET/30				
ORDER_TO_CASH	AGREEMENT	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	AGREEMENT	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	AGREEMENT	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
ORDER_TO_CASH	AGREEMENT	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30	200026								NET/30				

ORDER_TO_CASH	AGREEMENT	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027							NET/30
ORDER_TO_CASH	ORDER	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	ORDER	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	ORDER	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	ORDER	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	MANUFACTURE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00	LOCAL		NET/30

ORDER_TO_CASH	SHIP	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00		
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00		
ORDER_TO_CASH	SHIP	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00		
ORDER_TO_CASH	SHIP	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00		
ORDER_TO_CASH	SHIP	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00		
ORDER_TO_CASH	SHIP	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	INVOICE	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00	
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00	
ORDER_TO_CASH	INVOICE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
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ORDER_TO_CASH	INVOICE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
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ORDER_TO_CASH	INVOICE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	

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      <EVENT_TIME/>
   </PROCESS>
</PROCESS_DOC>
```

```
<?xml version="1.0" standalone="yes"?>
<!-- DOCTYPE DOCUMENT SYSTEM "dtdname.dtd"  -->
<PROCESS>
   <SUBPROCESS>
        <CUSTOMER>
                <CUSTNO>
                </CUSTNO>

                <CUSTNAME>
                </CUSTNAME>

                <ADDRESS>
                </ADDRESS>

                <EMAIL>
                </EMAIL>

        </CUSTOMER>

        <MATERIAL>
                <MATNUM>
                </MATNUM>

                <MATNAME>
                </MATNAME>

                <UOM>
                </UOM>

                <PRICE>
                </PRICE>

                <QTY>
                </QTY>

        </MATERIAL>

        <SALES_DATA>
                <QUOTENUM>
                </QUOTENUM>

                <ORDERNUM>
                </ORDERNUM>

                <ORDERDATE>
                </ORDERDATE>
```

```
                <MANUFACT_DATA>
                        <PRODUCTION_NUM>
                        </PRODUCTION_NUM>

                        <PRODUCTION_DATE>
                        </PRODUCTION_DATE>

                        <PRODUCTION_LOC>
                        </PRODUCTION_LOC>

                        <PRODUCTION_STATUS>
                        </PRODUCTION_STATUS>

                </MANUFACT_DATA>

                <INVOICE_DATA>
                        <AMT>
                        </AMT>

                        <TERMS>
                        </TERMS>

                        <DATE>
                        </DATE>

                </INVOICE_DATA>

        </SALES_DATA>
   </SUBPROCESS>
</PROCESS>
```

```
<PROCESS>
   <SUBPROCESS>
        <CUSTOMER>
                <CUSTNO>
                </CUSTNO>

                <CUSTNAME>
                </CUSTNAME>

                <ADDRESS>
                </ADDRESS>

                <EMAIL>
                </EMAIL>

        </CUSTOMER>

        <MATERIAL>
                <MATNUM>
                </MATNUM>

                <MATNAME>
                </MATNAME>

                <UOM>
                </UOM>

                <PRICE>
                </PRICE>

                <QTY>
                </QTY>

        </MATERIAL>

        <SALES_DATA>
                <QUOTNUM>
                </QUOTENUM>

                <ORDERNUM>
                </ORDERNUM>

                <ORDERDATE>
                </ORDERDATE>

                <MANUFACT_DATA>
                        <PRODUCTION_NUM>
```

```
                        </PRODUCTION_NUM>

                        <PRODUCTION_DATE>
                        </PRODUCTION_DATE>

                        <PRODUCTION_LOC>
                        </PRODUCTION_LOC>

                        <PRODUCTION_STATUS>
                        </PRODUCTION_STATUS>

                </MANUFACT_DATA>

                <INVOICE_DATA>
                        <AMT>
                        </AMT>

                        <TERMS>
                        </TERMS>

                        <DATE>
                        </DATE>

                </INVOICE_DATA>

        </SALES_DATA>
   </SUBPROCESS>
</PROCESS>
```

EXHIBIT D

Process Metrics Project
March 9, 2000

Design Specification 1.0

Last Revised By:	Date	Additions
Vincent Cyr	March 9, 2000	Initial Draft

Introduction

The activities that take place within a company to conduct its business are organized into processes. Each process is comprised of sub-processes that break down the process into more discreet elements – eventually becoming transactions. For example, the activity of a business that involves making products and selling them for money is known as "Order-to-Cash". This process is broken down into sub-processes that deal with the individual steps - first obtaining a prospective customer – to the manufacturing of product(s), shipping, and invoicing of that customer.

Each of these sub-processes is triggered by an event that passes information to the next sub-process so that action can be carried out. Often, an application may be responsible for one or more of these sub-processes. In the case of SAP, its integrated applications allow for many of the sub-processes activities to be carried out within the entire SAP R/3 system.

However, in many cases, some of the sub-processes are carried out by different applications or in the cases of e-commerce, may be carried out by entirely different organizations or companies.

How then, does someone inside the organization or outside the organization know at what point their particular order resides? Calling someone may cause a cascading number of phone calls, e-mails, faxes, system look-ups, etc. to determine status of the order. This is highly inefficient and results in poor customer response and service. In addition, being able to measure performance across the sub-processes would have vale to those in the organization trying to determine inefficiencies in their operations. Imagine the ability to know how long it took to go from order to manufacturing to shipping during each step of the process. Imagine being able to know exactly where in the process an order is even if your company is not performing one or more sub-processes. This project is intended to demonstrate how we can use messaging to make this possible.

Using MQSeries and MQSeries Integrator, we are going to simulate a process and its related sub-processes. As each event takes place, we are going to send messages with information pertaining to that event through MQSI to a database. This database will hold the messages (in XML format), which we will use to report against. The diagram 1.0 shows the overall layout of this concept.

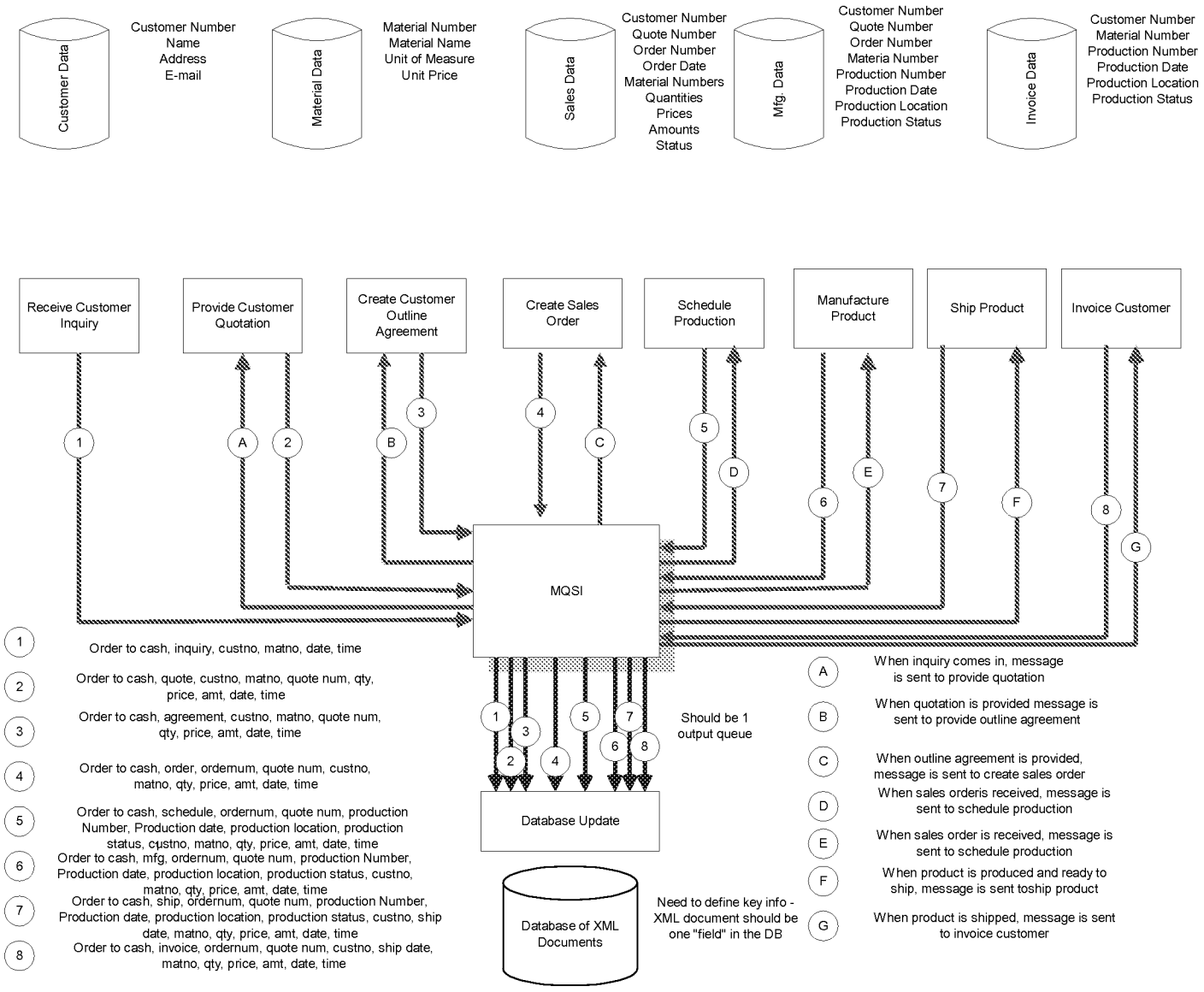
Customer Data
Customer Number
Name
Address
E-mail
Material Data
Material Number
Material Name
Unit of Measure
Unit Price
Sales Data
Customer Number
Quote Number
Order Number
Order Date
Material Numbers
Quantities
Prices
Amounts
Status
Mfg. Data
Customer Number
Quote Number
Order Number
Materia Number
Production Number
Production Date
Production Location
Production Status
Invoice Data
Customer Number
Material Number
Production Number
Production Date
Production Location
Production Status
Receive Customer Inquiry
Provide Customer Quotation
Create Customer Outline Agreement
Create Sales Order
Schedule Production
Manufacture Product
Ship Product
Invoice Customer
MQSI
Database Update
Database of XML Documents
Should be 1 output queue
Need to define key info - XML document should be one "field" in the DB
1 Order to cash, inquiry, custno, matno, date, time
2 Order to cash, quote, custno, matno, quote num, qty, price, amt, date, time
3 Order to cash, agreement, custno, matno, quote num, qty, price, amt, date, time
4 Order to cash, order, ordernum, quote num, custno, matno, qty, price, amt, date, time
5 Order to cash, schedule, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
6 Order to cash, mfg, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
7 Order to cash, ship, ordernum, quote num, production Number, Production date, production location, production status, custno, ship date, matno, qty, price, amt, date, time
8 Order to cash, invoice, ordernum, quote num, custno, ship date, matno, qty, price, amt, date, time
A When inquiry comes in, message is sent to provide quotation
B When quotation is provided message is sent to provide outline agreement
C When outline agreement is provided, message is sent to create sales order
D When sales orderis received, message is sent to schedule production
E When sales order is received, message is sent to schedule production
F When product is produced and ready to ship, message is sent toship product
G When product is shipped, message is sent to invoice customer

Diagram 1.0

Development Approach

We should approach development by stubbing out pieces of functionality and validating the design in a step-by-step approach. We will then build upon these pieces as we increase capability. We will build the following components:

Process Engine – This will be the application that simulates the applications that perform the sub-processes of the main process. The main process will be Order-to-Cash. The sub-processes are: Inquiry, Quotation, Outline Agreement, Sales Order, Schedule Production, Manufacture, Ship, and Invoice. The Process Engine (PE) should be one program (C++ or Java Servelet) that has each of the sub-processes as a separate function within the application. All inputs and outputs should use MQSeries queues. MQSI application group/message types to distinguish messages from sub-processes. The PE will need to access various databases in order to obtain information about customers, materials, sales, manufacturing, shipping, and invoicing. Load programs may need to be developed to create sample data for these databases. We must also have a method for varying the time intervals between processes (throttling) to simulate real-life time lags between sub-process steps. For example, it may take 1 day between ordering a product and manufacturing a product, we need to show that variation so when we report the results, they appear realistic. The PE should be developed so that we can test the message flow first, then we can add database access and fill out the message structures.

MQSeries Integrator – MQSI will be the formatting and routing engine of this design. There will be several different formats coming into MQSI from the various sub-processes. The app group/message type in the MQRFH will determine which format to use. There will be one outbound format that will be used to send all event information to a database that will store all event messages. This format should be XML and one document should consist of all of the possible data elements across the process. These messages will all be placed on one output queue. The other outbound formats will be messages sent to the next sub-process in the process thread; on another queue, separate from the XML queue.

Database update – This process will take XML event messages from MQSI and insert them into a database of messages. The key needs to be defined which will allow for inquiry and reporting. The entire XML message will be placed in one field of the database. There should be a cleanup routine to purge older messages (all related to each other) based on a date or key parameter. Extraction of information from the database will be both inquiries against a particular order/customer/material/sub-process or a more generic statistical presentation of data across the entire process. Many of these inquiries are yet to be defined. Presentation of the information will be web-based using XSL style sheets.

At this point in the design, we should stub these pieces out and put as much together to test out these concepts. We will test these components and determine how to move forward from this point.

XML Document

One XML document is to be used for all of the messages coming out of each sub-process of the entire process thread. The data elements include:

Process
- Sub-process name (1 or more)
- Sub-process info (1 or more)
  - Date
  - Time
  - Customer (1)
    - Customer Number
    - Customer Name
    - Customer Address
    - Customer E-mail
  - Material (1 or more)
    - Material Number
    - Material Name
    - Unit of Measure
    - Price
    - Quantity
  - Sales Data (1)
    - Quotation Number
    - Order Number
    - Order Date
    - Manufacturing Data (1)
      - Production Number
      - Production Date
      - Production Location
      - Production Status
    - Invoice Data (1)
      - Amount
      - Terms
      - Date

EXHIBIT E

Author	Date	Description
Ken Fritz	08/07/2000	Initial Draft

About Process Metrics Simulator

The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory.

The program is initialized by a file which must be located in the c:\process\ directory on the users machine, called ProcessSim.ini. The file should be somewhat self explanatory; however, see the detailed documentation for more information.

This software was written in Visual Basic 6.0 and utilizes IBM's MQSeries ActiveX objects.

Process Metrics Simulator, 1.0a Documentation

Author	Date	Description
Ken Fritz	08/07/2000	Detailed Software Documentation, Initial Draft

I. Basic Design Goals

The simulator is intended to be a flexible utility to model business processes utilizing a variety of messaging constructs and formats. In its final version it will:

- Be written in a platform independent language
- Utilize multiple messaging transports (ie. Tibco, MQSeries)
- Utilize flexible message formats
- Allow for dynamic construction of business processes (Snap-in model)
- Allow for user interaction in setting latency and message drops/stoppage.

Currently, the simulator is in a very basic alpha development version which does the following:

- Supports a basic 8 process production model.
- Utilizes MQSeries messaging
- Allows for user configurable latency settings
- Supports only one basic XML message format.
- Written in Visual Basic 6.0

This document covers only the alpha version currently available.

II. User Interface

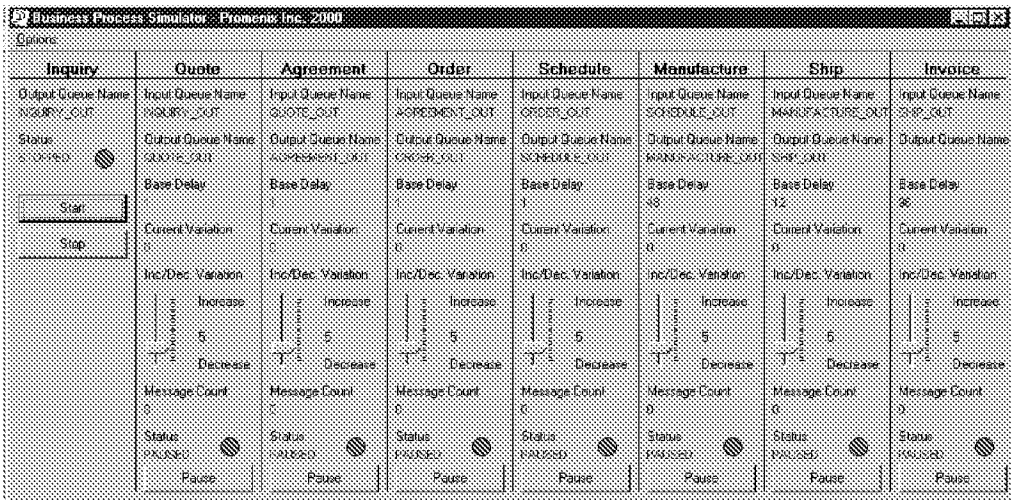

Figure 1 – Process Simulator GUI

The GUI for the process simulator is shown in Figure 1. The GUI allows the user to control all runtime parameters of the package which are limited to the following:

- Starting/Stopping by process
- Latency per process

Also, the GUI will indicate settings for pre-runtime configurable options:

- Input/Output Queue Names
- Base Variation

Finally, the GUI will also indicate dynamic parameters including final latency (delay), message count, and status of each process.

III. Sample Configuration File

Note: This file must be located in "C:\Process\" directory and named processsim.ini

[Common]	
QMGR = CONF01	The queue manager to be used
CHARACTERSET = 437	The MQSeries character set
DBQNAME = DB_IN	Database queue name
MQSI_Q_OUT = TESTQ	MQSI output queue
[Inquiry]	Settings for Inquiry process
OUTPUTQNAME = INQUIRY_OUT	Output queue
INITIAL_STATUS = 0	Initial status (0 = Stopped, 1 = Running)
XMLFILE = "c:\inquiry.txt"	XML document file
[Quote]	Settings for quote process
INPUTQNAME = INQUIRY_OUT	Input queue name
OUTPUTQNAME = QUOTE_OUT	Output queue name
BASEVARIATION = 1	Base variation (Delay) setting
INITVARIATION = 5	Initial random seed value (variation can be MAX +5 if this is 5)
XMLFILE = "c:\test.xml"	XML Document file
[Agreement]	Agreement process
INPUTQNAME = QUOTE_OUT	Settings are the same for the rest of these processes as for quote process.
OUTPUTQNAME = AGREEMENT_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[OrderProcess]	
INPUTQNAME = AGREEMENT_OUT	
OUTPUTQNAME = ORDER_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Schedule]	
INPUTQNAME = ORDER_OUT	
OUTPUTQNAME = SCHEDULE_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Manufacture]	
INPUTQNAME = SCHEDULE_OUT	
OUTPUTQNAME = MANUFACTURE_OUT	
BASEVARIATION = 48	

INITVARIATION = 5 XMLFILE = "c:\test.xml" [Ship] INPUTQNAME = MANUFACTURE_OUT OUTPUTQNAME = SHIP_OUT BASEVARIATION = 12 INITVARIATION = 5 XMLFILE = "c:\test.xml" [Invoice] INPUTQNAME = SHIP_OUT OUTPUTQNAME = INVOICE_OUT BASEVARIATION = 96 INITVARIATION = 5 XMLFILE = "c:\test.xml"	

IV. Sample XML Document Format

```
<PROCESS>
    ORDER_TO_CASH
  <SUBPROCESS>
      SHIP
    <CUSTOMER>
        <CUSTNO>5000</CUSTNO>
        <CUSTNAME>DOW CHEMICAL</CUSTNAME>
        <CITY>MIDLAND</CITY>
        <STATE>MI</STATE>
        <EMAIL>INFO@PROMENIX.COM</EMAIL>
    </CUSTOMER>
    <MATERIAL>
        <MATNUM>800003</MATNUM>
        <MATNAME>WIDGET</MATNAME>
        <UOM>BOX</UOM>
        <PRICE>2</PRICE>
        <QTY>2</QTY>
    </MATERIAL>
    <SALES_DATA>
        <QUOTENUM>200001</QUOTENUM>
        <ORDERNUM>800000</ORDERNUM>
        <ORDERDATE>3/27/00</ORDERDATE>
    </SALES_DATA>
    <MANUFACT_DATA>
        <PRODUCTION_NUM>410000</PRODUCTION_NUM>
        <PRODUCTION_DATE>3/29/00</PRODUCTION_DATE>
        <PRODUCTION_LOC>LOCAL</PRODUCTION_LOC>
        <PRODUCTION_STATUS />
    </MANUFACT_DATA>
    <INVOICE_DATA>
        <AMT />
        <TERMS>NET/30</TERMS>
        <SHIP_DATE>3/31/00</SHIP_DATE>
        <INVOICE_DATE />
    </INVOICE_DATA>
  </SUBPROCESS>
  <EVENT_DATE />
  <EVENT_TIME />
</PROCESS>
```

V. Basic theory of operation

Initialization process:

1. Call ReadINI
    a. Open the ini file (must be c:\process\processsim.ini)
    b. Read all global variables from the INI
2. Call InitGUI
    a. Initialize labels and display settings
    b. Set status flags
    c. Set initial timer intervals
3. Call InitXMLFiles
    a. Load XML files into memory from disk
4. Call InitDOMS
    a. Create DOM Objects for each process
    b. Load XML from InitXMLFiles into DOMs
    c. Parse XML
5. Call StartTimers
    a. Set initial timer intervals to 100 ms
    b. By doing so, starts message processing

Initial process (trigger process)

1. Load initial dummy values into the pre-existing XML DOM
2. Generate a random TID
    a. Done with following formula: Year & Month & Day & Timer * Rnd (Where timer is seconds past midnight)
3. Dump XML to variable
4. Write contents of variable to the output queue and DB/MQSI queue

Messages are processed in the following sequence by a generic process:

1. Listener listens on input queue for the process
2. Message listener tries to retrieve a message with no wait interval.
    a. If message not available, timer interval set to 5000 (5 seconds) to allow processor to do other things while waiting for another message to arrive.
    b. If the message is there, processing continues
3. When message arrives, retrieve correlation ID
4. Set GUI parameters
    a. Timer interval to 100 (100 milliseconds)
    b. Change status to “Running” if it was “Paused”
    c. Change indicator from red to green
5. Create XMLDOM object
6. Load retrieved message into DOM and parse
7. Load values from retrieved message into variables (Currently static – should be dynamic in future)
8. Create random delay value
9. Using the XMLDOM created in the initialization for the base document, load values from the retrieved message into the new message
10. Change the time and date on the message by adding the delay value
11. Dump the XML from the DOM object into a variable
12. Write the contents of the variable to an MQ message having the same correlation ID as the previous to both the output queue and the MQSI/DB Output queue.

CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a copy of the enclosed documents was served according to 37 C.F.R. § 1.248 and MPEP 2249 on the requester in this reexamination by first class mail on February 1, 2012:

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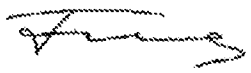
Fax. (512) 371-9088

Dated: February 1, 2012

Respectfully Submitted,



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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	CONTROL No. 90/009960
Filing Date	Dec. 15, 2000
First Named Inventor	Cyr, Vincent
Art Unit	3992
Examiner Name	Adam Basehoar
Attorney Docket Number	YYZ RE-002

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 5,301,320			
		US- 5,581,691			
		US- 6,092,102			
		US- 6,256,676			
		US- 6,725,445			
		US- 6,961,735			
		US- 6,970,945			
		US-			
		US-			
		US-			
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		WO 00/46723	08/10/2000	MACINTYRE		
		EP 0 974 919 A2	01/26/2000	HITACHI		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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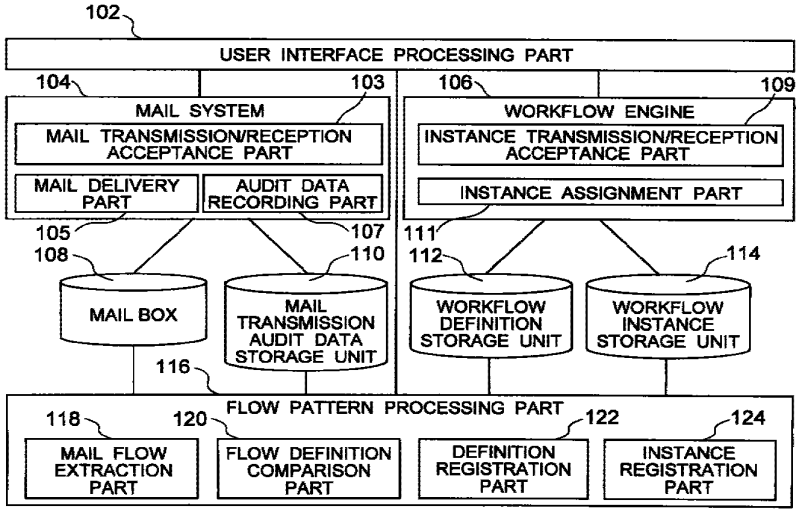
(54) Method of managing workflow based on electronic mail system

(57) In a workflow management system, a mail instance can be easily registered as a workflow instance and workflow definitions, and a workflow instance can be replaced at any process stage by other workflow definitions including present workflow definitions. A mail flow pattern is extracted from a mail transmission audit data storage unit (110), and a flow definition comparison part (120) compares the mail flow pattern with the flow definitions stored in a workflow definition storage unit (112). A definition registration part (122) and an instance registration part (124) register the mail flow pattern information as instance information of designated workflow definitions and as new workflow definitions. In accordance with predefined workflow definitions, intersectional workflow definitions and extended workflow definitions corresponding to a mail flow are selected and displayed. The mail flow pattern is registered in the workflow definition storage unit (112) as flow definitions based upon the flow definitions selected from among the displayed workflow definitions.

FIG. 1



EP 0 974 919 A2

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a workflow management method for a system in which works are performed via a network interconnecting user interfaces, and more particularly to a workflow management method for a system in which a combination of a mail system and a workflow management system are operated.

Description of the Related Art

[0002] In a workflow system, a flow of works by paper documents is changed to a flow of works by electronic chits and books realized on a computer system to perform works of circulation, acceptance and the like. Also in this country, the workflow system is applied to electronic mails, discussion database and the like.

[0003] A known workflow is disclosed, for example, in the article "Substantial Ability of Power Workflow", at pp. 61-71 in the March 1998 issue of the "Intranet" magazine published by Softbank-Sha. According to this article, the workflow management system defines a flow of works (documents) to automatically circulate the works in accordance with the definitions to thereby shorten the work time and improve the productivity. According to the article, the workflow management system has three constituent elements: workflow definition, execution, and administration. As the workflow definition, an electronic document to be circulated and circulation destinations of the document are defined. As the workflow execution, the document is circulated in accordance with the definitions. As the workflow administration, the process state of the circulated document is recorded to monitor the work progress, and a flow of works is statistically analyzed to provide tools for improving works. A workflow is defined through programming using scripts (language), storing a circulation order in a table, using a chart, or the like.

[0004] An example of a system capable of referring to audit data of sent mails is disclosed, for example, in "Electronic Mail System" of JP-A-7-336385. According to this technique, audit data of electronic mail circulation on a plurality of networks are stored in one storage unit of the networks, and any terminal at the plurality of networks can refer to audit data of mail circulation.

[0005] An approach to managing workflow definitions is disclosed, for example, in "Workflow System" of JP-A-8-123744. According to this technique, workflow definitions are distributed to and independently managed by a plurality of sections and departments, by linking different workflow definitions via input and output ports of each group of workflow definitions.

[0006] The above-described conventional techniques are, however, associated with the following first to third problems.

[0007] First, after an electronic mail document is circulated, work progress is managed. In this case, in order to manage the works as a workflow instance, this workflow instance is required to be newly entered into a computer, resulting in a complicated operation. The electronic mail system of JP-A-7-336385 cannot generate a workflow instance by using audit data of mail circulation.

[0008] Second, it is not possible to reuse the flow of mail circulation as workflow definitions usable by other users. According to the above-cited article, process definitions corresponding to workflow definitions of this invention are generated by a process definition tool. Even if a flow of once circulated mails is again used with less modification, it is necessary to execute an operation for workflow definitions.

[0009] Third, even a circulated workflow instance cannot be reused as another workflow definition instance including a post-process, when the post-process becomes necessary for the instance. With the workflow system of JP-A-8-123744, when a user of workflow definitions is changed to another user, it is necessary to change the workflow definitions at the input and output ports, and the original workflow definitions cannot be changed at an optional position.

SUMMARY OF THE INVENTION

[0010] It is a first object of the present invention to solve the first problem and provide a workflow management method capable of easily registering a mail instance as a workflow instance.

[0011] It is a second object of the present invention to solve the second problem and provide a workflow management method capable of easily registering a mail instance as workflow definitions.

[0012] It is a third object of the present invention to solve the third problem and provide a workflow management method capable of changing a workflow instance at any intermediate process stage to other workflow definitions including current workflow definitions.

(1) In order to achieve the above objects, in a workflow management method of this invention, audit data of sent mails and mail contents are stored, a mail flow pattern is extracted from the stored audit data of sent mails, the extracted mail flow pattern is compared with preloaded flow definition information to obtain a mail extended workflow or a mail intersectional workflow as a pattern of a workflow, and this pattern is registered as new workflow definitions. Extended workflow definition means workflow definition containing therein an intersectional workflow pattern, and intersectional workflow definition means workflow definition contained in the intersectional workflow pattern.

(2) In a workflow management method for managing a flow of works by referring to flow definition information of an instance, an extended workflow or an intersectional workflow for workflow definitions of an already entered workflow instance is derived from workflow definition information preloaded in storage means, and the workflow instance is recreated as instance information of the obtained workflow definitions.

(3) In a workflow management method of this invention, a mail flow of a selected mail is displayed, intersectional workflow definitions and extended workflow definitions matching the mail flow are derived from predefined workflow definitions and displayed, one of the displayed flow definitions is selected, and the mail flow is registered as flow definitions based upon the selected flow definition.

(4) In a workflow management method of this invention, a mail flow of a selected mail is displayed, intersectional workflow definitions and extended workflow definitions matching the mail flow are derived from predefined workflow definitions and displayed, and the mail flow is registered as an instance of the selected flow definitions.

(5) In a workflow management method of this invention, a mail flow is displayed, extended workflow definitions and intersectional workflow definitions of the displayed mail flow are displayed, and a workflow instance is recreated as an instance of the extended workflow definitions for workflow definitions which are original definitions of the displayed flow definitions.

(6) In a workflow management method of the invention, relations between extended workflows and intersectional workflows for a plurality of workflow definitions are stored and managed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Fig. 1 is a functional block diagram illustrating a workflow management method according to a first embodiment of the invention.

Fig. 2 is a functional block diagram illustrating a workflow management method according to a second embodiment of the invention.

Fig. 3 is a diagram showing an example of a mail box according to the invention.

Fig. 4 is a diagram showing an example of audit data of sent mails according to the invention.

Fig. 5 is a diagram showing an example of workflow definitions.

Fig. 6 is a diagram showing an example of a workflow instance according to the invention.

Fig. 7 is a flow chart illustrating an operation of a user interface processing part shown in Fig. 1.

Fig. 8 is a flow chart illustrating an operation of a mail flow extracting part shown in Fig. 1.

Fig. 9 is a diagram showing an example of a mail flow corresponding to audit data of sent mails according to the invention.

Fig. 10 is a flow chart illustrating a matching process to be executed by a workflow definition comparison part shown in Fig. 1.

Fig. 11 is a flow chart illustrating a process of a workflow definition registration part shown in Fig. 1.

Fig. 12 is a flow chart illustrating a process of a workflow instance registration part shown in Fig. 1.

Fig. 13 is a diagram showing an example of a mail flow display according to the invention.

Fig. 14A is a diagram showing an example of a workflow definition display obtained through extension of a mail flow according to the invention.

Fig. 14B is a diagram showing an example of a workflow definition display obtained through extraction of a mail flow according to the invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0014] Embodiments of the invention will be described in detail with reference to the accompanying drawings.

(1st Embodiment)

[0015] Fig. 1 is a functional block diagram illustrating a workflow management method according to the first embodiment of the invention. The functions illustrated in Fig. 1 are provided by a server of a client-server system realizing a workflow system.

[0016] Of the blocks shown in Fig. 1, a mail box 108, a mail transmission audit data storage unit 110, a workflow definition storage unit 112 and a workflow instance storage unit 114 are hardware having a storage function, and the other blocks including a user interface processing part 102, a mail system 104, a workflow engine 106 and a flow pattern processing part 116 are all software which executes programs. The mail system 104 and workflow engine 106 provide known functions.

[0017] The user interface processing part 102 calls a mail transmission/reception acceptance part 103 of the mail system 104 via a connection link. If a call is a mail transmission request, the mail transmission/reception acceptance part 103 calls a mail delivery part 105 which analyzes the contents of a mail to be transmitted and stores the mail in a mail box of a user who is specified by the contents of the mail or the address of the mail in the mail box 108. After the mail is delivered by the mail delivery part 105, an audit data recording part 107 stores assignment audit data in the mail transmission audit data storage unit 110. If a call is a mail reception request, the mail transmission/reception acceptance part 103 acquires a mail corresponding to a called user from the mail box 108 and outputs it to the user interface processing part 102.

[0018] The user interface processing part 102 also

calls an instance transmission/reception acceptance part 109 of the workflow engine 106 via a connection link. If a call is an instance transmission (transition) request, the instance transmission/reception acceptance part 109 calls an instance assignment part 111. The instance assignment part 111 acquires workflow definitions corresponding to an instance to be transmitted, from the workflow definition storage unit 112, determines a next assignment user to which the instance is delivered, in accordance with the workflow definition, and updates the workflow instance storage unit 114 so that the instance becomes an object to be processed by the next assignment user. If a call is an instance reception request, the instance transmission/reception acceptance part 109 acquires an instance corresponding to the called user from the workflow instance storage unit 114 and outputs it to the user interface processing part 102.

[0019] The user interface part 102 also calls the flow pattern processing unit part 115 via a directly connected link, reads information from the mail box 108, mail transmission/reception audit data storage unit 110 or workflow definition storage unit 112, and writes workflow definition information into the workflow definition storage unit 112 and a workflow instance into the workflow instance storage unit 114.

[0020] The flow-pattern processing part 116 includes a mail flow extraction part 118, a flow definition comparison part 120, a definition registration part 122 and an instance registration part 124. The invention is characterized in the provision of the flow pattern processing part 116 which is realized by programs providing the functions of these parts 118, 120, 122, and 124. The detailed flow charts illustrating the processed to be executed by the mail flow extraction part 118, flow definition comparison unit part 120, definition registration part 122 and instance registration part 124 are shown respectively in Figs. 8, 10, 11 and 12.

[0021] Fig. 3 shows an example of data stored in the mail box 108 shown in Fig. 1.

[0022] As shown in Fig. 3, the mail box 108 is constituted of a user list 302 and user specific mail boxes 304 assigned to respective users corresponding to fields of the list 302. In this example shown in Fig. 3, mail boxes 304 for users A and B are shown. The user specific mail box 304 is constituted of a mail sender field 306, a mail subject field 308, a carbon copy recipient field 310, a message ID field 312, a reference message (message for reference to the mail) ID field 314, and a mail content field 315. The message ID field 312 is an identifier which the mail system uniquely assigns to each mail. In this example shown in Fig. 3, the messages b98012001 and c98012101 of users B and C in the mail sender field 306, supplied to users C and B in the carbon copy recipient ID field 310, make reference to a similar message a98012001 of user A in the reference message ID field 314. In other words, this example shows a case where a mail having the message ID b98012001 and the mail sender B and referring to the message ID a98012001, and a mail having the message ID c98012101 and the mail sender C and referring to the message ID a98012001 are stored in the mail box 108.

[0023] Fig. 4 shows an example of data stored in the mail transmission audit data storage unit 110 shown in Fig. 1.

[0024] As shown in Fig. 4, the mail transmission audit data storage unit 110 is constituted of a mail transmission date/time field 402, a mail sender field 404, a mail recipient field 406, a carbon copy recipient field 408, a message ID field 410, a reference message ID field 412, and a mail subject field 414. In the example shown in Fig. 4, mail transmission audit data of three days from 98/01/20, 13:00 to 98/01/22, 13:00 is given.

[0025] Fig. 5 shows an example of workflow definitions stored in the workflow definition storage unit 112 shown in Fig. 1.

[0026] As shown in Fig. 5, the workflow definitions 112 are constituted of activities representative of processes such as those indicated at 502 and 506 and arrows representative of process flows such as those indicated at 504. Of the activities representative of processes, the activities 502 are work activities corresponding to users including persons in charge and supervisors, and the activities 506 are control activities whereat a split condition is made to change the process flow. In the lower right area in Fig. 5, a correspondence table is provided which shows assignments 508 at each activity and corresponding workers 510. A, M and N are persons in charge, B and P are section managers, C is a department manager, and D is a planning person. After an instance is passed from a person 1 in charge to a section manager 1 and a department manager 1, revised or accepted instances are collected at a person 2 in charge. If the instance is accepted by a section manager 2, it is passed to a department manager 2. If the department manager 2 does not accept it, the instance is returned to the person 2 in charge. If the instance is accepted by the department manager 2, it is passed to a planning person, whereas if it is not accepted, the instance is again returned to the person 2 in charge.

[0027] Fig. 6 shows an example of instance information stored in the workflow instance storage unit 114 shown in Fig. 1.

[0028] As shown in Fig. 6, instance information is constituted of an instance ID 602, a definition ID 604, a state 606, workflow relevant data 608 and additive information 610. When an instance is generated, the workflow engine 106 assigns the instance a unique ID and changes the state each time the circulation destination of the instance is changed. In accordance with the workflow relevant data and workflow definition set by workers, the workflow engine 106 determines the next circulation destination or destinations. In the example shown in Fig. 6, after AA0001 and 0001 are allocated as the instance ID 602 and definition ID 604, the instance is passed to the section manager 2 shown in Fig. 5 as

indicated by the state 606 and accepted by the section manager 2 as indicated by the workflow relevant data 608, and a planning document is designated as the additive information 610.

[0029] Next, the operation of the workflow management method of this invention to be executed in response to a user operation will be described with reference to Figs. 7, 13 and 14.

[0030] Fig. 7 is a flow chart illustrating the operation of the user interface processing part 102 shown in Fig. 11. Fig. 13 is a diagram showing an example of a mail flow display, and Figs. 14A and 14B are diagrams showing examples of workflow definitions obtained through extension and extraction of a mail flow.

[0031] The mail flow shown in Fig. 13 is extracted from the mail transmission audit data storage unit 110 shown in Fig. 1. As shown in Fig. 13, the mail flow has a condition list (mail list) 1302 shown in the upper half area and a mail flow chart 1304 shown in the lower half area. The mail list 1302 includes date/time, mail sender activity, a subject and the like, and the mail flow chart 1304 shows the order of mail transmissions. In this example shown in Fig. 13, after an instance is transmitted from user A to users B and C, the users B and C return it to the user A.

[0032] Fig. 14A shows an extended workflow definition list obtained through extension of the mail flow upon clicking the "mail flow" shown in Fig. 13, and Fig. 14B shows an intersectional workflow definition list obtained through extraction of the mail flow upon clicking the "mail flow" shown on the upper left of Fig. 13. In the example shown in Fig. 14A, an extended workflow definition chart covering the whole work from the person in charge to the planning person is displayed upon clicking a planning proposal flow in an extended workflow definition area 1402. In the example shown in Fig. 14B, only a portion wherein an instance is passed from a person in charge to a section manager and a department manager and a presence/absence of a comment on a business trip report is returned to the person in charge, is extracted from the whole flow, upon clicking a business report flow in an intersectional workflow definition area 1404.

[0033] Referring to Fig. 7, the user interface processing part 102 displays the mail list 1302 shown in Fig. 13 (Step 702) and waits for an input of a mail or a user operation (Step 704). Upon a user operation is input, it is checked whether a mail flow of a selected mail is already extracted and whether the user operation is a mail flow extraction operation or a comparison operation (Step 706). If the user operation is the mail flow extraction operation or the mail flow is not still extracted, the flow stands by until it is confirmed that a user operation for the extraction is entered (Step 712) and thereafter the mail flow extraction part 118 extracts the mail flow (Step 714) to display a mail flow chart 1304 (Fig. 13) (Step 716).

[0034] If the judgement at Step 706 indicates that the operation is a definition comparison operation and if the mail flow is already extracted, a user confirmation input is waited (Step 718), and the flow definition comparison part 120 performs a comparison process between the mail flow and workflow definitions (Step 720).

[0035] With this process, as shown in Figs. 14A and 14B, a list of definitions having the matched flows is displayed as the extended workflow definition list 1402 and intersectional workflow definition list 1404 (Step 722) to wait for an operation input (Step 708).

[0036] After a registration operation input or a user operation input is waited for (Step 708), if the user selects a flow in the definition list, the selected workflow definition is displayed as a flow definition chart 1406 (Fig. 14), whereas the registration operation is entered, it is checked whether the registration operation is a definition registration operation or an instance registration operation (Step 710). In the case of the definition registration operation, the definition registration part 122 registers workflow definitions (Step 724). In the case of the instance registration operation, the instance registration part 124 registers a workflow instance (Step 726). If the operation input is neither the definition registration or the instance registration, the flow waits for a mail/operation selection input (Step 704).

[0037] Next, with reference to Figs. 8 and 9, the detailed operation of the mail flow extraction part 714 will be described.

[0038] Fig. 8 is a flow chart illustrating an operation of extracting a mail flow from the mail transmission audit data storage unit 110 shown in Fig. 1. Fig. 9 is a diagram illustrating how a mail flow stored in the storage unit 110 is extracted.

[0039] First, it is checked from the mail transmission audit data storage unit 110 whether the selected mail has a reference message (Step 802). As shown in Fig. 9, the reference message is identified by the reference message ID in the reference message ID field 412 in the mail transmission audit data storage unit 110 which stores mail transmission audit data in the order of transmission. If there is audit data of the reference message, a mail corresponding to the audit data is selected (Step 804) and it is checked again whether the selected mail has the reference message (Step 802). If there is no audit data of the reference message, the mail sender activity in the audit data of the selected mail is used as a start activity of the mail flow (Step 806). The mail sender activity is the activity described in the recipient field 404 of the mail transmission audit data storage unit 110.

[0040] The reason why the reference message is again checked at Step 802 after the audit data is once selected at Step 804, is to search the first written mail by checking links of reference messages. Namely, by sequentially searching reference messages, a mail having no reference message can be found which is the first written mail.

[0041] The above operations will be described specifically with reference to Fig. 9. A mail flow shown in a

lower area in Fig. 9 is extracted from the mail transmission audit data shown in a higher area in Fig. 9. If a selected mail has a reference message, a mail corresponding to the reference message is selected, whereas if a selected mail has no reference message, the mail sender activity in the selected audit data is used as a mail flow start activity. Mails having the message ID of the start activity as the reference message IDes are searched. If there is such audit data, an arrow is added between the mail sender activity of the first selected audit data and the mail sender activity of the next searched audit data to draw a mail flow. In the example shown in Fig. 9, assuming that audit data 902 having the message ID of c98012101 of the activity C is first selected, audit data 904 having a message ID a98012001 as the reference message ID of the activity C is selected. In this case, since the audit data 904 has no reference message, the activity A (906) which is the mail sender activity of the audit data 904 is used as the flow start activity.

[0042] Reverting to Fig. 8, audit data having the message ID of the selected audit data as its reference message ID is searched from the mail transmission audit data storage unit 110 (Step 808) to judge whether there is any such audit data (Step 810). If there is such audit data, the sender activity of the searched audit data and an arrow connecting the sender activity of the searched audit data and the sender activity of the selected audit data are added to the mail flow chart (Step 812). The selected audit data is replaced by the searched audit data (Step 814) to thereafter return to Step 808 whereat the above operations are repeated.

[0043] The above operations will be described with reference to Fig. 9. As the audit data having the message ID of a98012001 of the mail audit data 904 of the sender activity A, there are two sets of audit data 908 and 902 having the message IDes b98012001 and c98012101 respectively of the sender activities B and C. Therefore, arrows between A and B and between A and C are added. Since audit data 910 has the message ID of the audit data 908 as its reference message ID, an arrow is added between the activities B and A from B to A. Similarly, activities B, C and D and arrows between A and B, between B and C and between C and D are added.

[0044] If at Step 810 shown in Fig. 8 there is no audit data having the message ID of the selected audit data as its reference message ID, mail audit data including the same mail sender activity as the mail recipient activity of the first selected audit data and having a later date/time is searched from another branch of the graph (step 816). If there is such audit data, an arrow is added between the sender activity of the first selected audit data and the sender activity of the searched sender audit data, whereas if there is no such audit data, the process is terminated.

[0045] The above operations will be described with reference to Fig. 9. Since there is no mail audit data having as its reference message the audit data 902 of the sender activity C, audit data including the recipient activity A of the audit data 902 and having a later date/time is searched. The sender activity or audit data 910 is such audit data, so that an arrow is added between the sender activity C (912) of the audit data 902 and the sender activity A (914) of the audit data 910. With the above operations, a mail flow 916 shown in Fig. 9 can be generated.

[0046] Next, the detailed operation to be executed by the workflow definition comparison part 120 will be described with reference to Figs. 10 and 14.

[0047] Fig. 10 is a flow chart illustrating the operation of the workflow definition comparison part 120 shown in Fig. 1. Figs. 14A and 14B show examples of workflow definitions obtained through extension or extraction of the mail flow.

[0048] First, a mail flow of a designated mail is selected to show the mail flow such as shown in Fig. 13 (Step 1002). The workflow definitions are selected as shown in Fig. 14A or 14B (Step 1004). Next, the start activity of the mail flow is selected to select a group of activities having the same contents as in the sender field of the start activity, and the contents of the selected first activity are replaced by the selected group name (Step 1005). For example, "A" of the mail flow chart shown in Fig. 13 is replaced by "person in charge". Next, the start activity of the replaced mail flow chart is compared with the start activity of the workflow definition chart (Step 1006) to check whether they are coincident (Step S1008). For example, the start activity of the mail flow chart shown in Fig.13 is compared with the start activity of the workflow definition chart shown in Fig. 14A or 14B. If not coincident and there is the next definition, the flow returns to Step 1004 (Step 1018) to compare the next definition in a manner similar to the above operation. If coincident, the next activities are selected (Step 1010) to repeat the comparison starting at Step 1005 until it becomes that there is no next activity of either mail flow activity or workflow activity. If there is no next activity, it is judged which of the mail flow activity and workflow activity becomes absent (Step 1012). If the workflow activity becomes absent first, the selected definitions are used as the intersectional workflow (Step 1014), whereas if the mail flow activity becomes absent first, the selected definitions are used as the extended workflow (Step 1016) to thereafter advance to Step 1018.

[0049] Fig. 14A shows an example of the extended workflow, and Fig. 14B shows an example of the intersectional workflow. As compared to the mail flow chart 1304 shown in Fig. 13, the extended workflow includes the mail flow chart whereas the intersectional workflow is included in the mail flow chart.

[0050] Next, the operation of the workflow definition registration part 122 will be described.

[0051] Fig. 11 is a flow chart illustrating the operation of the workflow definition registration part 122 shown in

Fig. 1.

[0052] First, it is checked whether the workflow definition chart selected at Step 708 shown in Fig. 7 is an extended workflow or an intersectional workflow (Step 1102). If the workflow definition chart is the intersectional workflow, the intersectional workflow definitions are compared with the mail flow definitions generated at Step 714 shown in Fig. 7 to thereby add definitions not contained in the intersectional workflow definitions but contained in the mail flow (Step 1104). If the workflow definition chart is the extended workflow chart, the extended workflow definitions are compared with the mail flow definitions to thereby delete definitions contained in the extended workflow and not contained in the mail flow (Step 1106). The newly formed definitions are registered in the workflow definition storage unit 112 (Step 1108).

[0053] Next, the operation of the workflow instance registration part 124 will be described with reference to Fig. 12. Fig. 12 is a flow chart illustrating the operation of the workflow instance registration part 124 shown in Fig. 1.

[0054] First, it is checked whether the workflow definitions selected at Step S708 shown in Fig. 7 have a split condition (Step 1202). If not, the flow advances to Step 1208, whereas if they have a split condition, the condition of the split selected by the mail flow is read (Step 1204) to set workflow relevant data of an instance which satisfies the split condition (Step 1206). Thereafter, the state of the instance corresponding to the last activity of the mail flow and the a definition ID of the selected workflow definitions are set (Step 1208). A unique instance ID is set and the selected mail flow is registered in the workflow instance storage unit 114 as the instance of the selected definitions (Step 1210).

[0055] As described above, according to this embodiment, circulation is not required to start from the workflow system, but it can be first started from the mail system and then a workflow instance can be easily entered. It is therefore possible to distribute a load on the workflow system to the mail system. Since the workflow definitions can be easily formed by using audit data of mail circulation, the number of work processes for forming workflow definitions can be reduced. When workflow definitions and instances are generated from the mail flow by referring to already formed workflow definitions, mail flow definitions and workflow definitions are compared on a display screen. It is therefore easy to determine the workflow definitions.

[0056] In the above embodiment, a combination of the mail system and workflow system is used. The invention is also applicable to only a workflow system. In the following, a second embodiment applying the invention only to a workflow system will be described.

(2nd Embodiment)

[0057] Fig. 2 is a functional block diagram illustrating a workflow management method according to the second embodiment of the invention.

[0058] The configuration of the second embodiment is simplified more than that shown in Fig. 1. This system is constituted of a user interface processing part 102, a workflow engine 106, a workflow definition storage unit 112, a workflow instance storage unit 114, a workflow audit data storage unit 202, and a flow pattern processing part 116 made of a flow definition comparison part 120 and an instance registration part 124. The user interface processing part 102, workflow engine 106 and flow pattern processing part 116 other than the storage units 112, 114 and 202 are made of software.

[0059] The user interface processing part 102 calls an instance transmission/reception acceptance part 109 of the workflow engine 106 via a connection link. If a call is an instance transmission (transition) request, the instance transmission/reception acceptance part 109 calls an instance assignment part 111. The instance assignment part 111 acquires workflow definitions corresponding to an instance to be transmitted, from the workflow definition storage unit 112, determines a next assignment user to which the instance is delivered, in accordance with the workflow definition, and updates the workflow instance storage unit 114 so that the instance becomes an object to be processed by the next assignment user. If a call is an instance reception request, the instance transmission/reception acceptance part 109 acquires an instance corresponding to the called user from the workflow instance storage unit 114 and outputs it to the user interface processing part 102.

[0060] Data stored in the workflow audit data storage unit 202 is similar to that stored in the mail transmission audit data storage unit 110 shown in Fig. 1. However, the reference message ID and message ID are replaced by an instance ID.

[0061] In this embodiment, it is possible to register an already entered and circulated workflow as an instance of other similar workflow definitions. Therefore, even an instance whose processes are not still determined to the last process, can be processed as a workflow instance. Furthermore, since the composition relationship of workflow definitions can be obtained, management of workflow definitions is easy.

[0062] In the system shown in Fig. 2, a workflow instance is processed and workflow definitions corresponding to the instance are already present. Therefore, it is not necessary as in the case of mail analysis in the system shown in Fig. 1 to extract workflow definitions and register them.

[0063] As described so far, the invention has the following advantages: (1) Circulation is not required to start from the workflow system, but it can be first started from the mail system and then a workflow instance can be easily entered. It is therefore possible to distribute a load on the workflow system to the mail system. (2) Since the workflow definitions can be easily formed by

using audit data of mail circulation, the number of work processes for forming workflow definitions can be reduced. (3) When workflow definitions and instances are generated from the mail flow by referring to already formed workflow definitions, mail flow definitions and workflow definitions are compared on a display screen. It is therefore easy to determine the workflow definitions. (4) It is possible to register an already entered and circulated workflow as an instance of other similar workflow definitions. Therefore, even an instance whose processes are not still determined to the last process, can be processed as a workflow instance. (5) Furthermore, since the composition relationship of workflow definitions can be obtained, management of workflow definitions is easy.

Claims

1. A workflow management method for managing mail transmission/reception and a flow of works in accordance with workflow definition information for defining a flow of works, the method comprising the steps of:

   a) storing mail transmission audit data;
   b) comparing (720) pattern information of a mail flow derived from the mail transmission audit data with preloaded workflow definition information, to obtain an extended workflow or an intersectional workflow of the mail flow; and
   c) registering (724, 726) the mail flow pattern information including the extended workflow or the intersectional workflow in the workflow definition information as new workflow definition information.

2. A workflow management method for managing a flow of works in accordance with workflow definition information for defining a flow of works, the method comprising the steps of:

   deriving an extended workflow or an intersectional workflow of workflow definitions of an already circulated workflow instance from workflow definition information stored in storage means (112); and
   recreating the workflow instance as instance information of the workflow definitions derived from the storage means.

3. A workflow management method according to claim 1, wherein said step c) comprises the subsidiary steps of:

   c1) displaying (716) a mail flow selected from the mail transmission audit data;
   c2) displaying (722) intersectional workflow definitions or extended workflow definitions in predefined workflow definitions matching the mail flow; and
   c3) registering (724, 726) the mail flow as new flow definitions based upon the flow definition selected from the displayed flow definitions.

4. A workflow management method according to claim 1, wherein said step b) comprises the subsidiary steps of:

   b1) judging (802) whether there is a reference message which refers to a selected mail, when the mail flow is derived from the mail transmission audit data;
   b2) if there is audit data having the reference message, selecting (804) a mail corresponding to the history;
   b3) if there is no audit data having the reference message, setting (806) a sender activity of the audit data of the selected mail as a start activity of the mail flow to be derived;
   b4) searching (808) audit data containing a message identifier of the selected audit data as an identifier of the reference message, from the mail transmission audit data;
   b5) if there is such audit data, adding (812) an arrow between the sender activity of the selected audit data and the sender activity of the searched audit data;
   b6) replacing (814) the selected audit data by the searched audit data and repeating said steps b4) and b5);
   b7) if there is no audit data containing a message identifier of the selected audit data as an identifier of the reference message, searching (816) from another graph branch mail audit data having a sender activity same as the sender activity of the selected audit data and a later date and time; and
   b8) if a search result indicates that there is such audit data, adding (818) an arrow between the sender activity of the selected audit data and the sender activity of the searched audit data.

5. A workflow management method according to claim 1, wherein said step c) comprises the subsidiary steps of:

   c1) judging (1102) whether the workflow definition information selected from storage means is an extended workflow or an intersectional workflow;
   c2) if the intersectional workflow, comparing (1104) the intersectional workflow definitions with the mail flow derived from the stored mail transmission audit data, and generating flow definitions by adding definitions not present in

the mail flow from the intersectional workflow definitions;

c3) if the extended workflow, comparing (1106) extended workflow definitions with the mail flow derived from the stored mail transmission audit data, and generating flow definitions by deleting definitions not present in the mail flow from the extended workflow definitions; and

c4) registering (1108) the flow definitions generated at said step c2) or c3) as new workflow definitions.

6. A workflow management method using a processing apparatus, comprising the steps of:

deriving a mail flow from stored mail transmission audit data or from contents of mails;

selecting (1202) workflow definitions from storage means and checking whether the workflow definitions have a split condition;

if there is a split condition, reading (1204) the split condition selected by the mail flow and setting workflow relevant data of an instance satisfying the split condition;

setting (1208) a state of the instance corresponding to a last activity of the mail flow and a definition identifier of the selected workflow definitions; and

registering (1210) the selected mail flow as an instance of the selected workflow definitions.

7. A storage medium storing a program for a processing apparatus to execute a workflow management method for managing mail transmission/reception and a flow of works in accordance with workflow definition information for defining a flow of works, the method comprising the steps of:

a) storing mail transmission audit data;

b) comparing (720) pattern information of a mail flow derived from the mail transmission audit data with preloaded workflow definition information, to obtain an extended workflow or an intersectional workflow of the mail flow; and

c) registering (724, 726) the mail flow pattern information including the extended workflow or the intersectional workflow in the workflow definition information as new workflow definition information.

8. A workflow management method using a processing apparatus comprising the steps of:

a) comparing (720) flow pattern information of electronic mails derived from mail transmission audit data with preloaded workflow definition information; and

b) in accordance with a comparison result, registering (724, 726) the flow pattern information to the workflow definition information as new workflow definitions.

9. A workflow management method using a processing apparatus comprising the steps of:

a) comparing (720) flow definitions in flow pattern information of electronic mails derived from mail transmission audit data with flow definitions in preloaded workflow definition information; and

b) if the flow definitions are coincident, registering (724) the flow pattern information to the workflow definition information as new workflow definitions.

10. A workflow management system for managing mail transmission/reception and a flow of works in accordance with workflow definition information for defining a flow of works, comprising:

a) means (107) for storing mail transmission audit data;

b) means (120) for comparing pattern information of a mail flow derived from the mail transmission audit data with preloaded workflow definition information, to obtain an extended workflow or an intersectional workflow of the mail flow; and

c) means (122) for registering the mail flow pattern information including the extended workflow or the intersectional workflow in the workflow definition information as new workflow definition information.

11. A workflow management method for managing mail transmission/reception and a flow of works in accordance with workflow definition information for defining a flow of works, the method comprising the steps of:

displaying (702) a mail flow of a selected mail;

deriving (714) at least one of intersectional workflow definitions and extended workflow definitions matching the mail flow, of predefined workflow definitions, and displaying the derived flow definitions;

selecting one of the displayed flow definitions; and

registering (724) the mail flow as flow definitions based upon the selected flow definition.

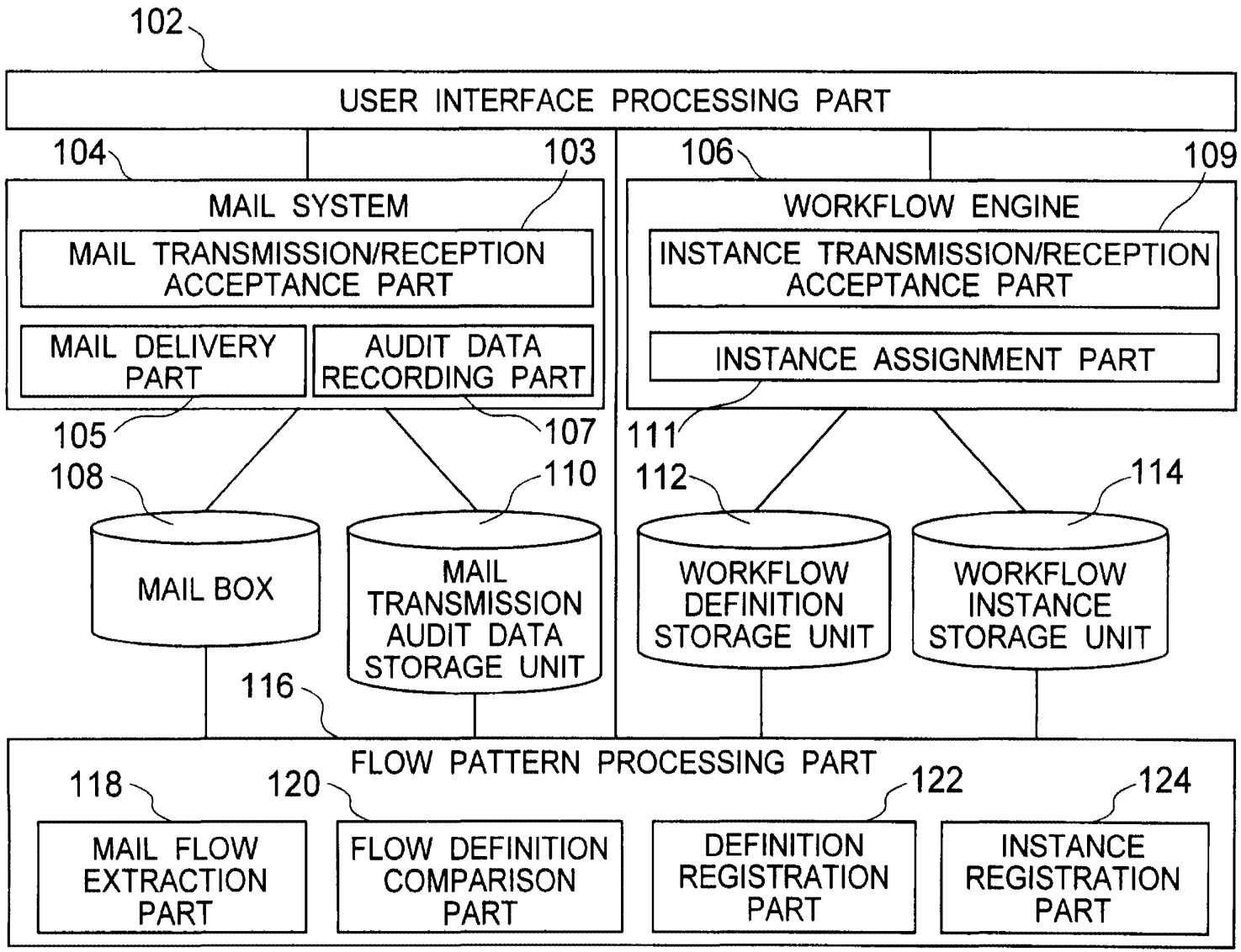
12. A workflow management method for managing mail transmission/reception and a flow of works in accordance with workflow definition information for defining a flow of works, the method comprising the steps of:

displaying (702) a mail flow;

displaying (714) extended workflow definitions and intersectional workflow definitions of the displayed mail flow in accordance with preloaded workflow definitions; and

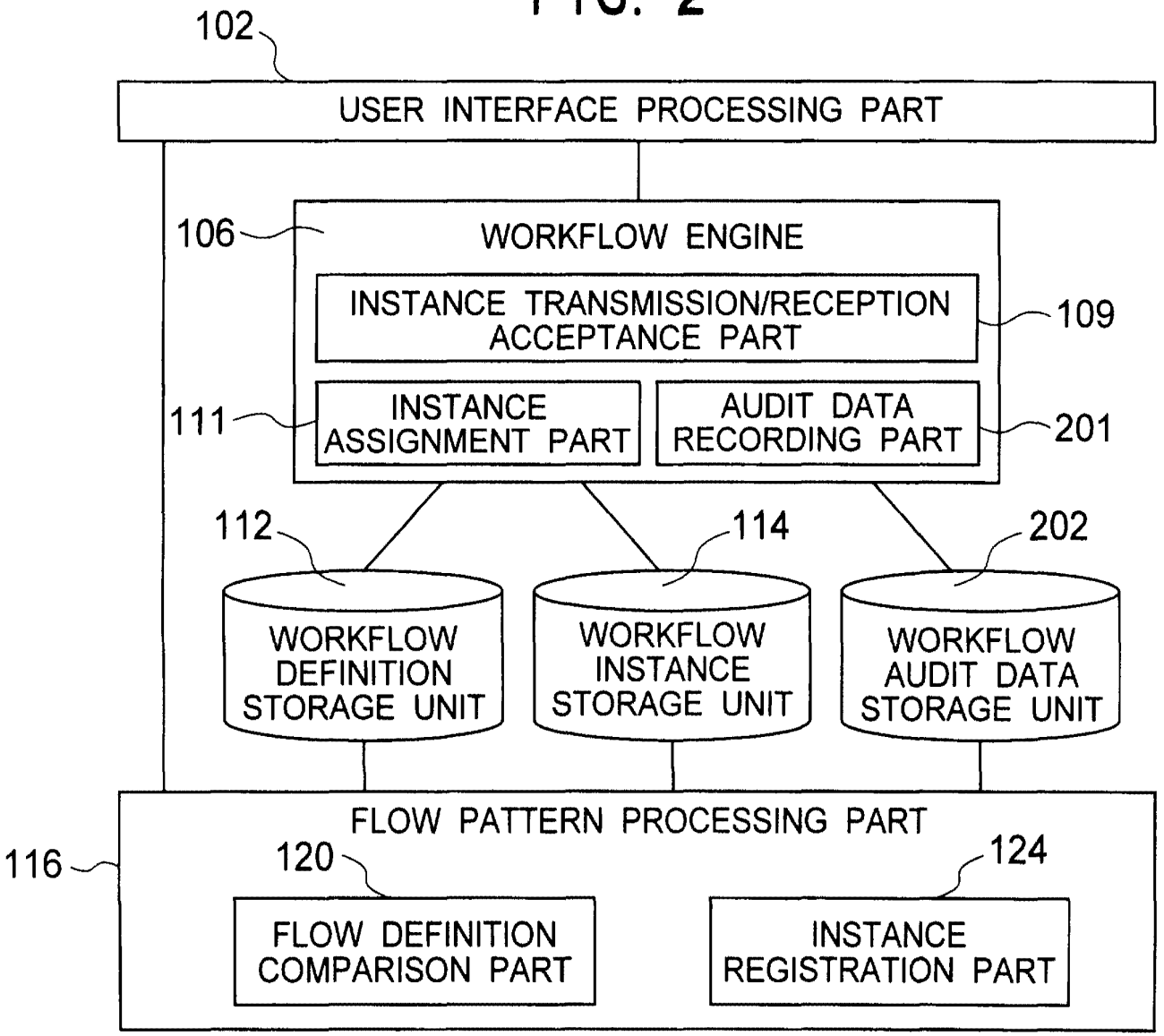
recreating (726) a workflow instance as an instance of the workflow definitions containing the displayed flow definitions.

FIG. 1



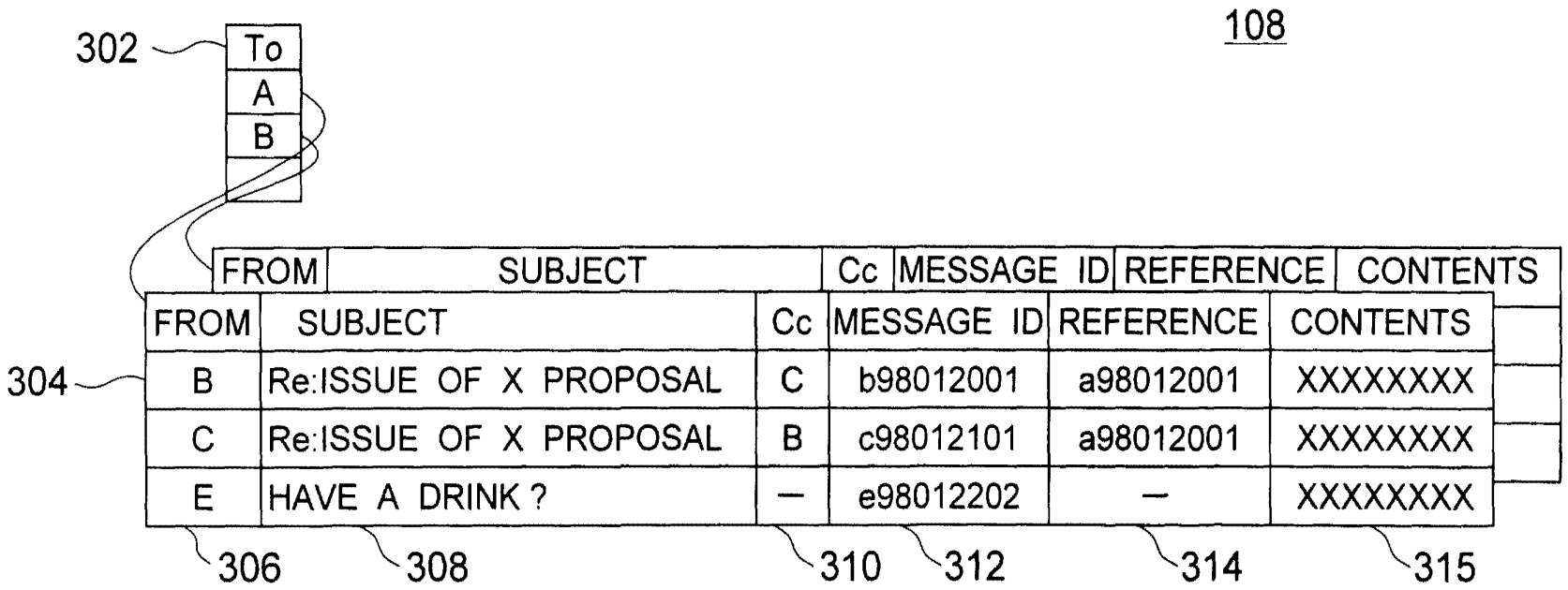
EP 0 974 919 A2

FIG. 2



EP 0 974 919 A2

FIG. 3



EP 0 974 919 A2

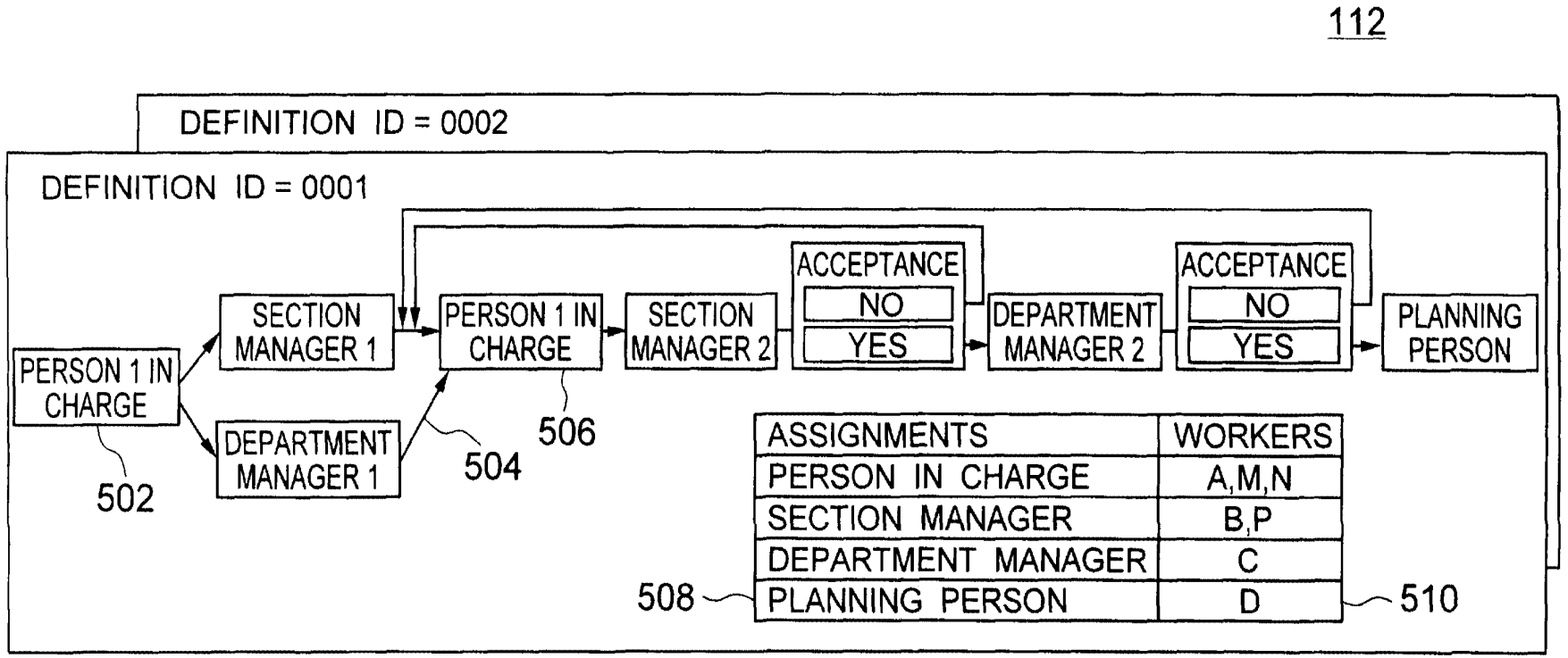
FIG. 4

110

402 DATE/TIME	404 FROM	406 To	408 Cc	410 MESSAGE ID	412 REFERENCE	414 SUBJECT
...	...	...	...	...	...	...
98/01/20 13:00	A	B,C	—	a98012001		ISSUE OF X PROPOSRAL
98/01/20 15:00	B	A	C	b98012001	a98012001	Re:ISSUE OF X PROPOSRAL
...	...	...	...	...	...	...
98/01/21 10:00	C	A	B	c98012101	a98012001	Re:ISSUE OF X PROPOSRAL
...	...	...	...	...	...	...
98/01/22 09:00	A	B	—	a98012201	b98012001	Re⁻2:ISSUE OF X PROPOSRAL
...	...	...	...	...	...	...
98/01/22 10:00	B	C	A	b98012201	a98012201	Re⁻3:ISSUE OF X PROPOSRAL
...	...	...	...	...	...	...
98/01/22 13:00	C	D	A,B	b98012201	a98012201	Re⁻4:ISSUE OF X PROPOSRAL

EP 0 974 919 A2

FIG. 5



EP 0 974 919 A2

FIG. 6

114

602 INSTANCE ID	604 DEFINITION ID	606 STATE	608 WORKFLOW RELEVANT DATA	610 ADDITIVE INFORMATION
AA0001	0001	SUPERVISOR 2	ACCEPT = YES	PLANNING DOCUMENT.doc

EP 0 974 919 A2

FIG. 7

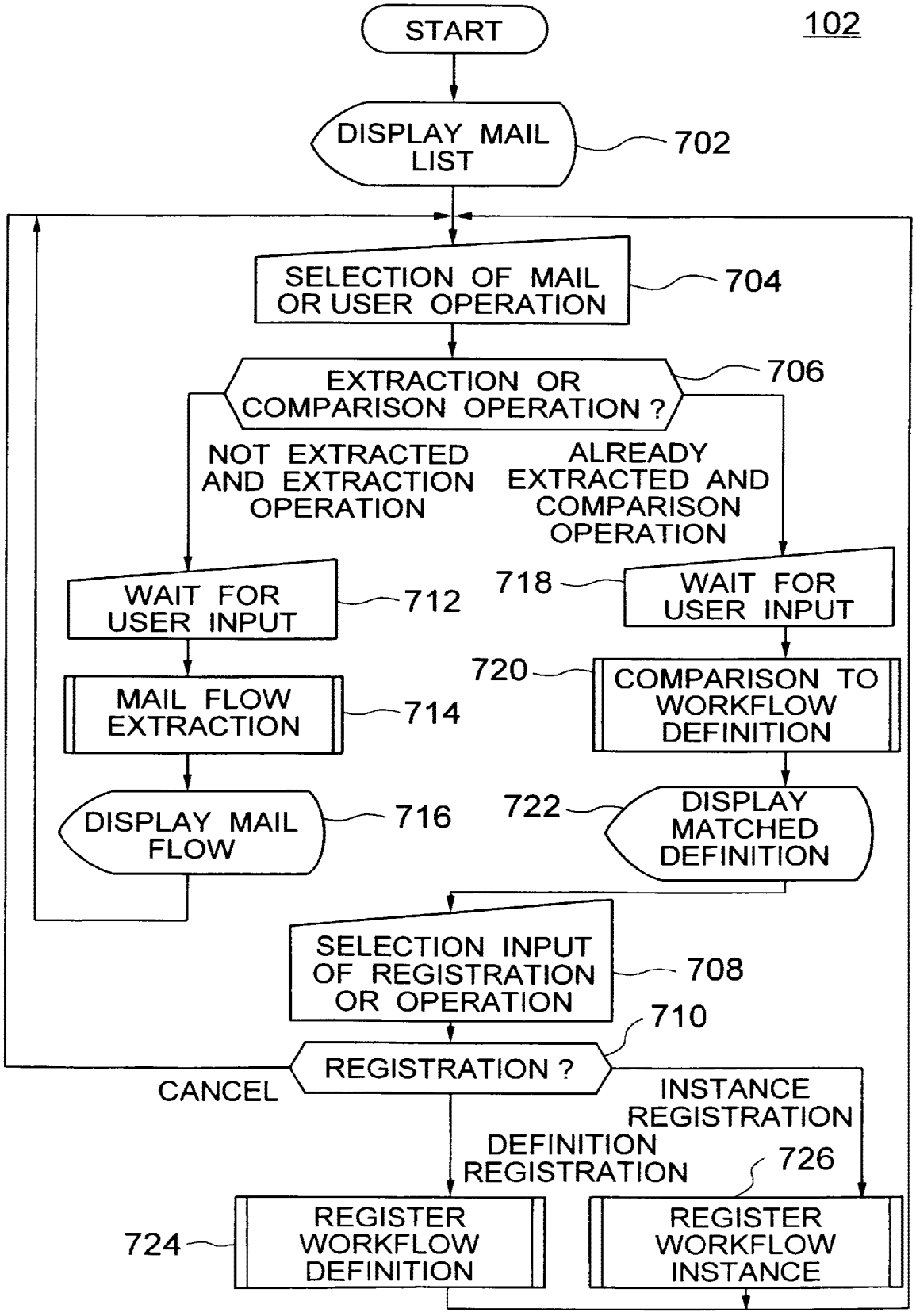

102
START
DISPLAY MAIL LIST
702
SELECTION OF MAIL OR USER OPERATION
704
EXTRACTION OR COMPARISON OPERATION ?
706
NOT EXTRACTED AND EXTRACTION OPERATION
ALREADY EXTRACTED AND COMPARISON OPERATION
WAIT FOR USER INPUT
712
MAIL FLOW EXTRACTION
714
DISPLAY MAIL FLOW
716
718
WAIT FOR USER INPUT
720
COMPARISON TO WORKFLOW DEFINITION
722
DISPLAY MATCHED DEFINITION
SELECTION INPUT OF REGISTRATION OR OPERATION
708
710
REGISTRATION ?
CANCEL
INSTANCE REGISTRATION
DEFINITION REGISTRATION
726
724
REGISTER WORKFLOW DEFINITION
REGISTER WORKFLOW INSTANCE

FIG. 8

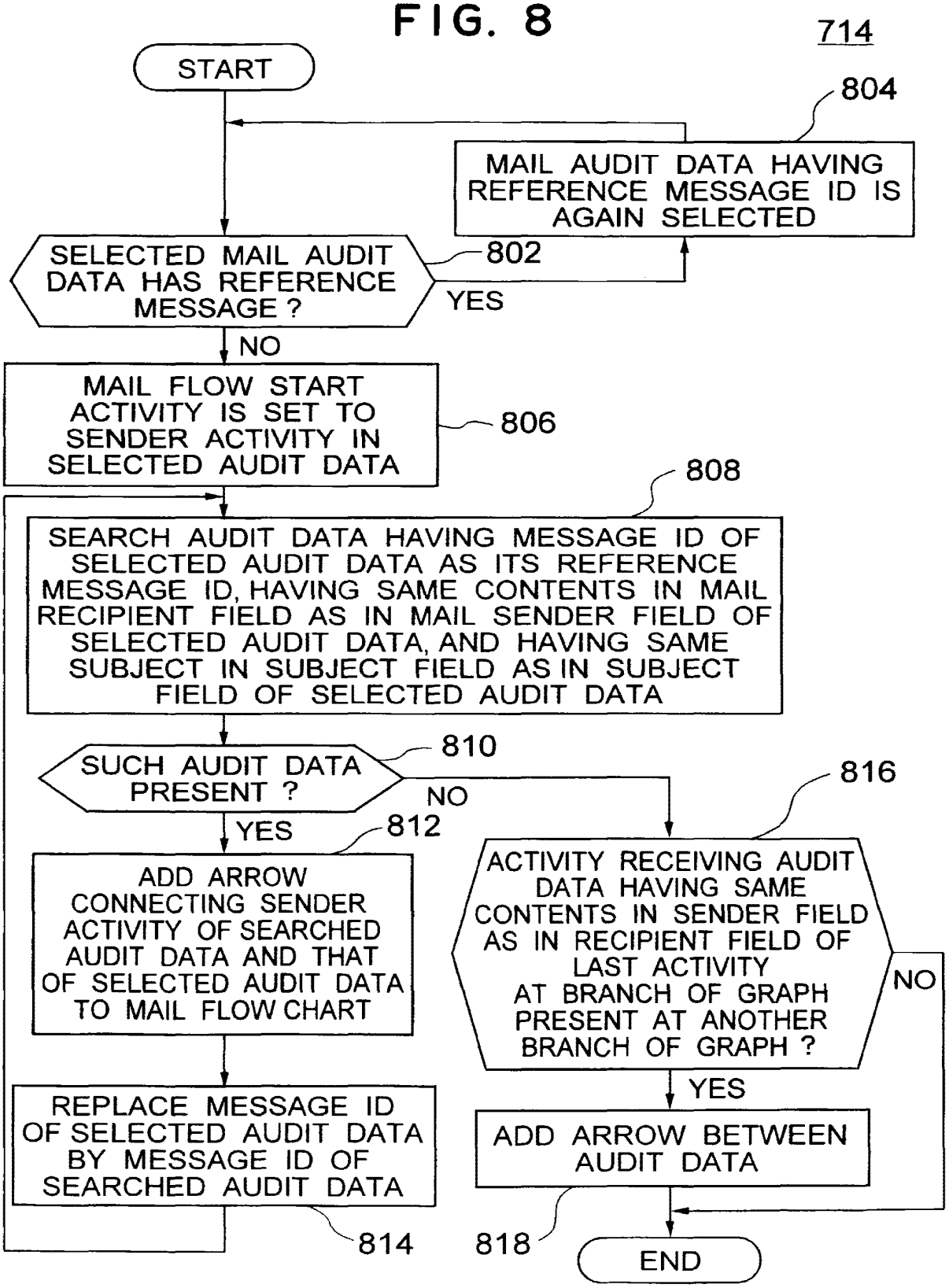
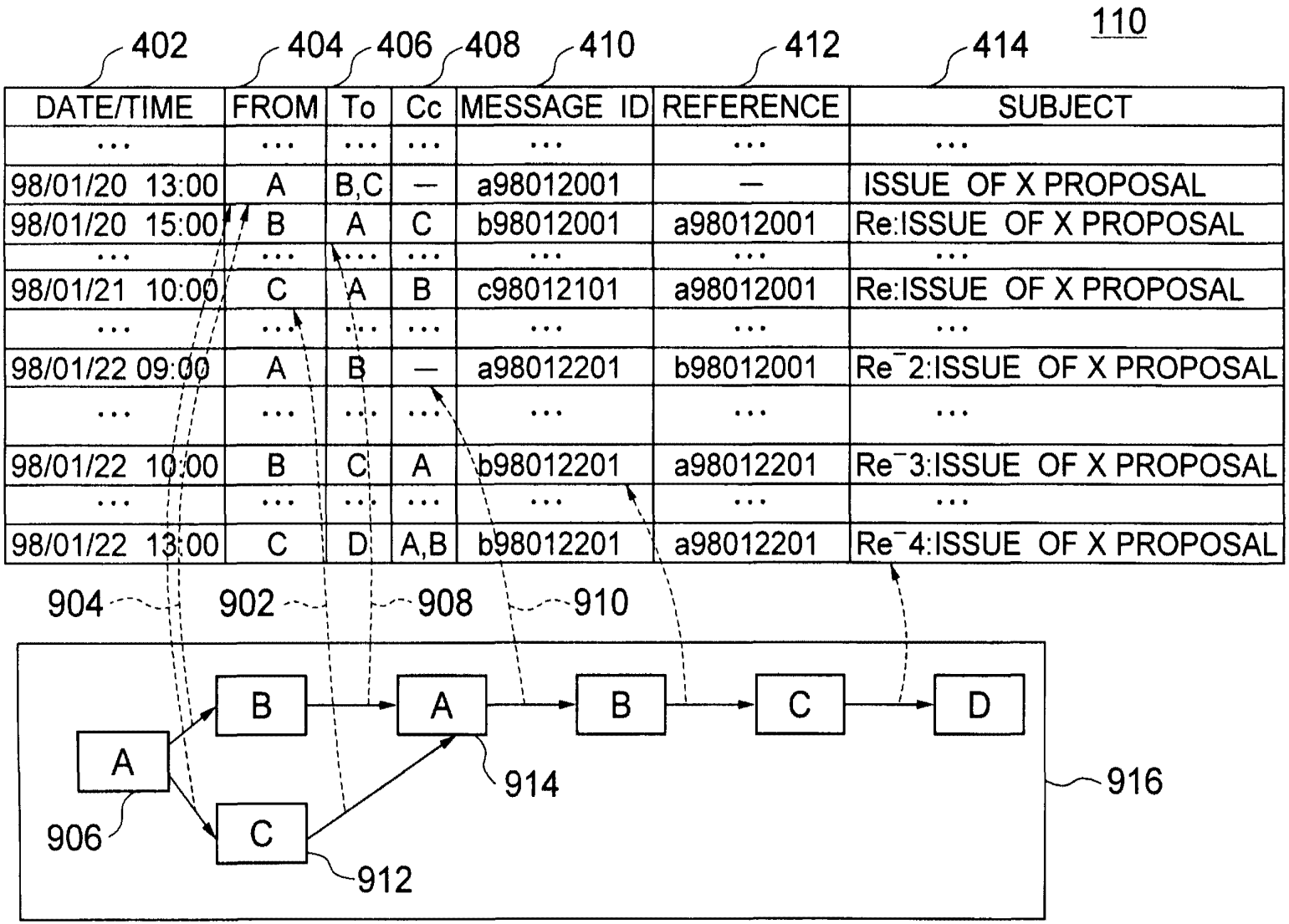


FIG. 9



EP 0 974 919 A2

FIG. 10

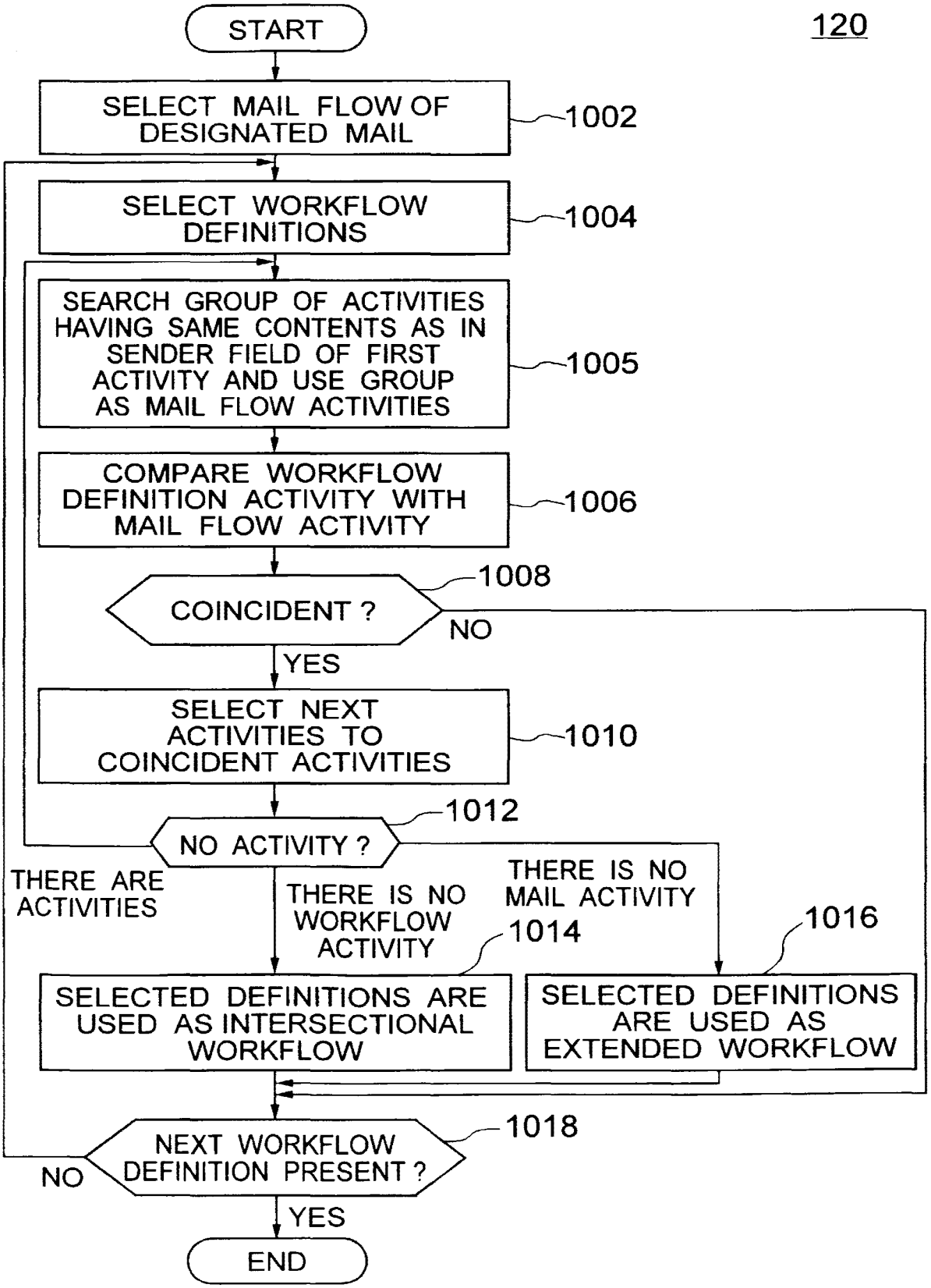


FIG. 11

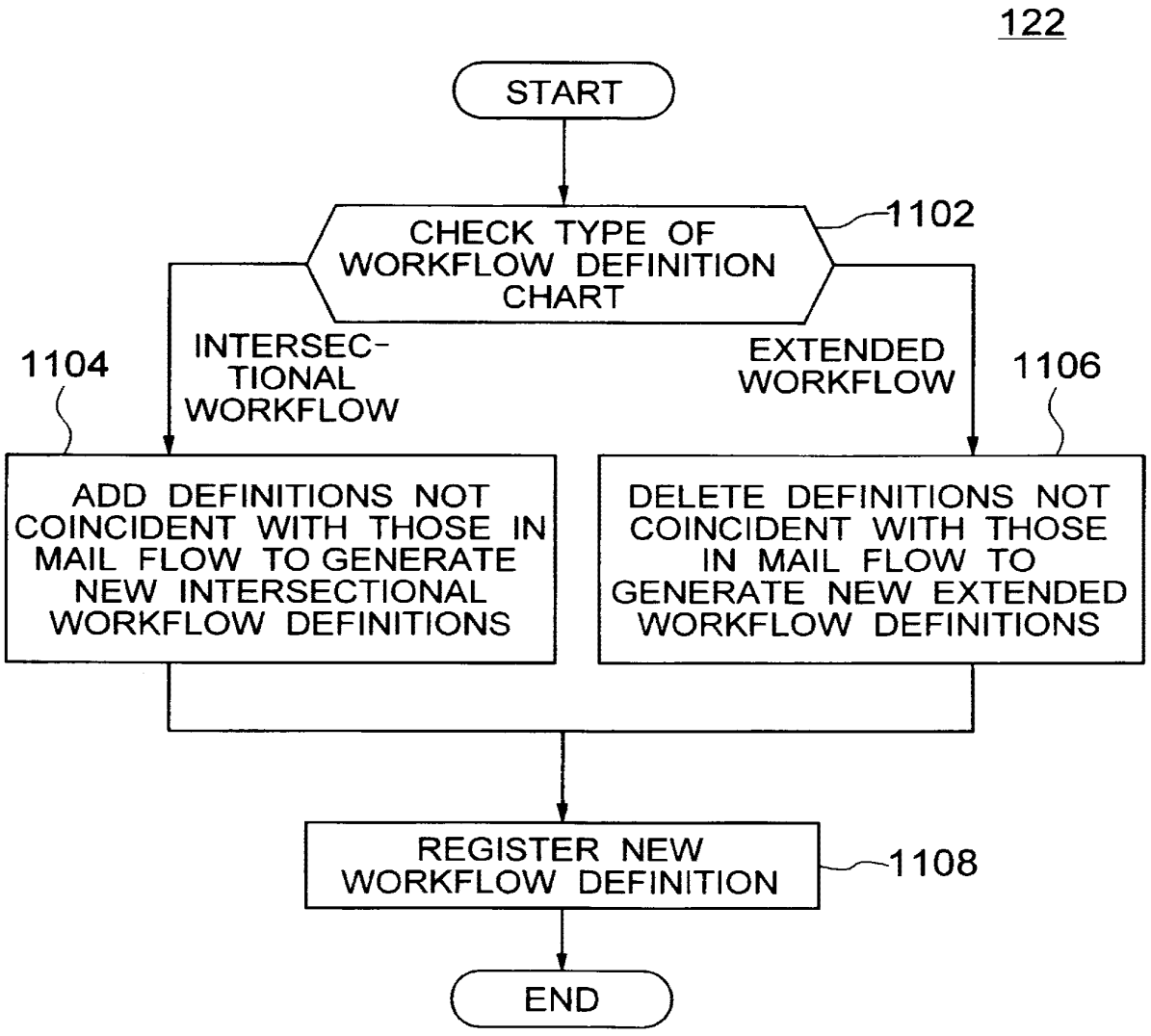

122
START
CHECK TYPE OF WORKFLOW DEFINITION CHART
1102
INTERSEC-TIONAL WORKFLOW
EXTENDED WORKFLOW
1104
1106
ADD DEFINITIONS NOT COINCIDENT WITH THOSE IN MAIL FLOW TO GENERATE NEW INTERSECTIONAL WORKFLOW DEFINITIONS
DELETE DEFINITIONS NOT COINCIDENT WITH THOSE IN MAIL FLOW TO GENERATE NEW EXTENDED WORKFLOW DEFINITIONS
REGISTER NEW WORKFLOW DEFINITION
1108
END

FIG. 12

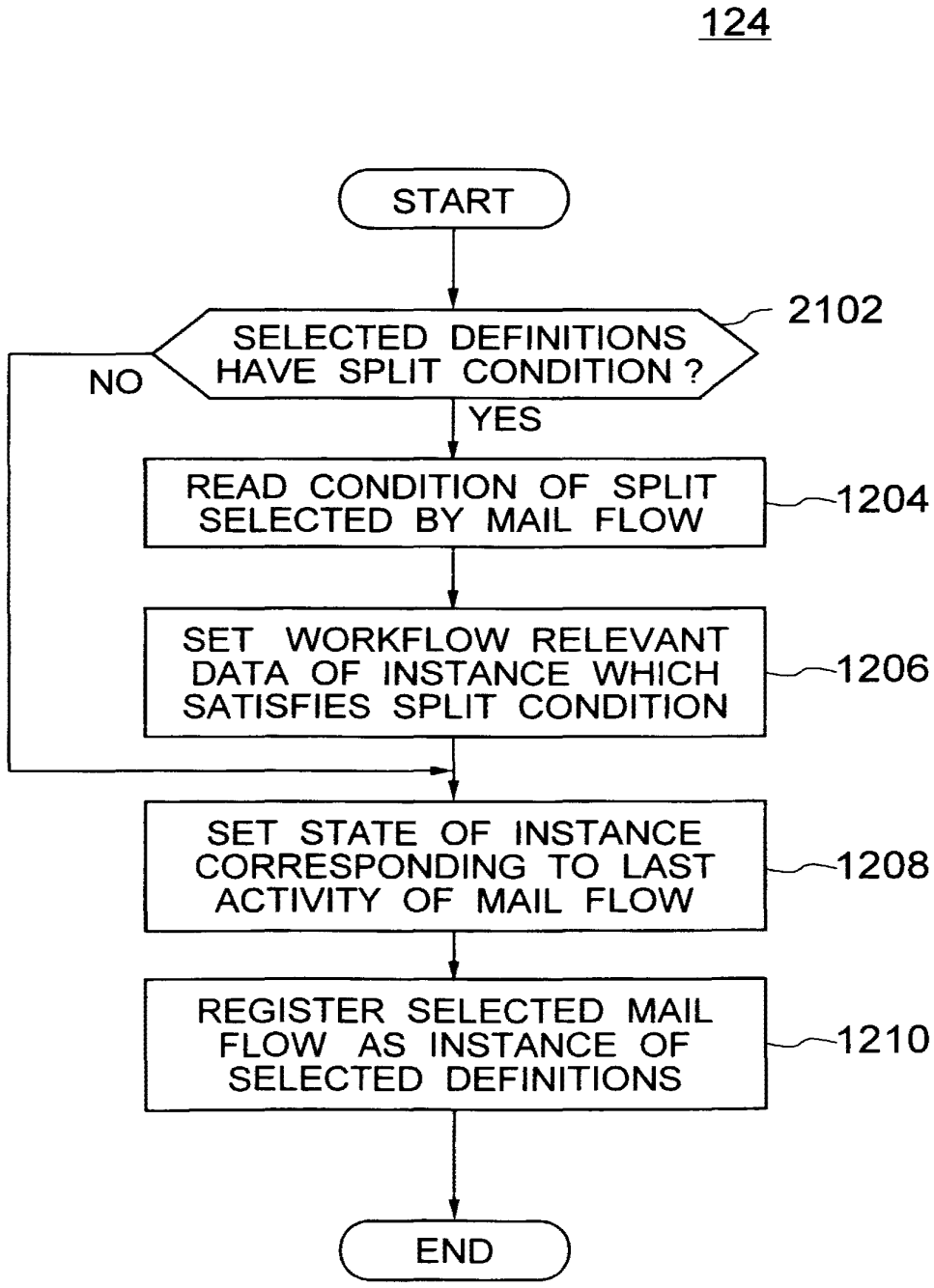


FIG. 13

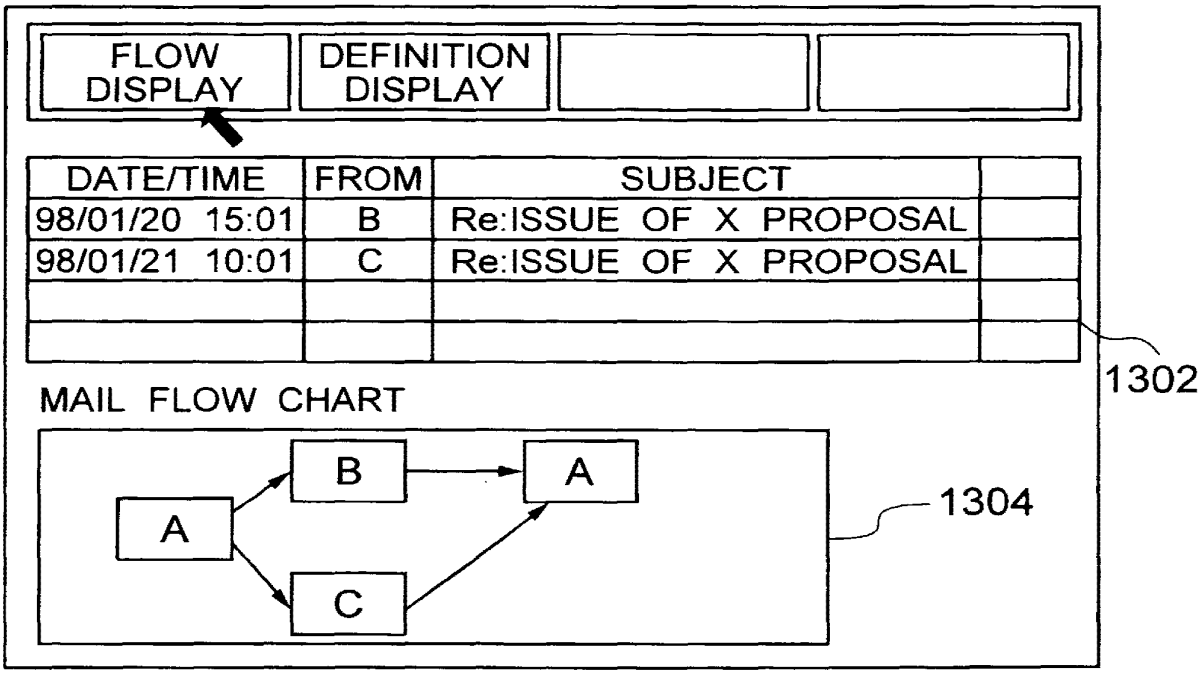
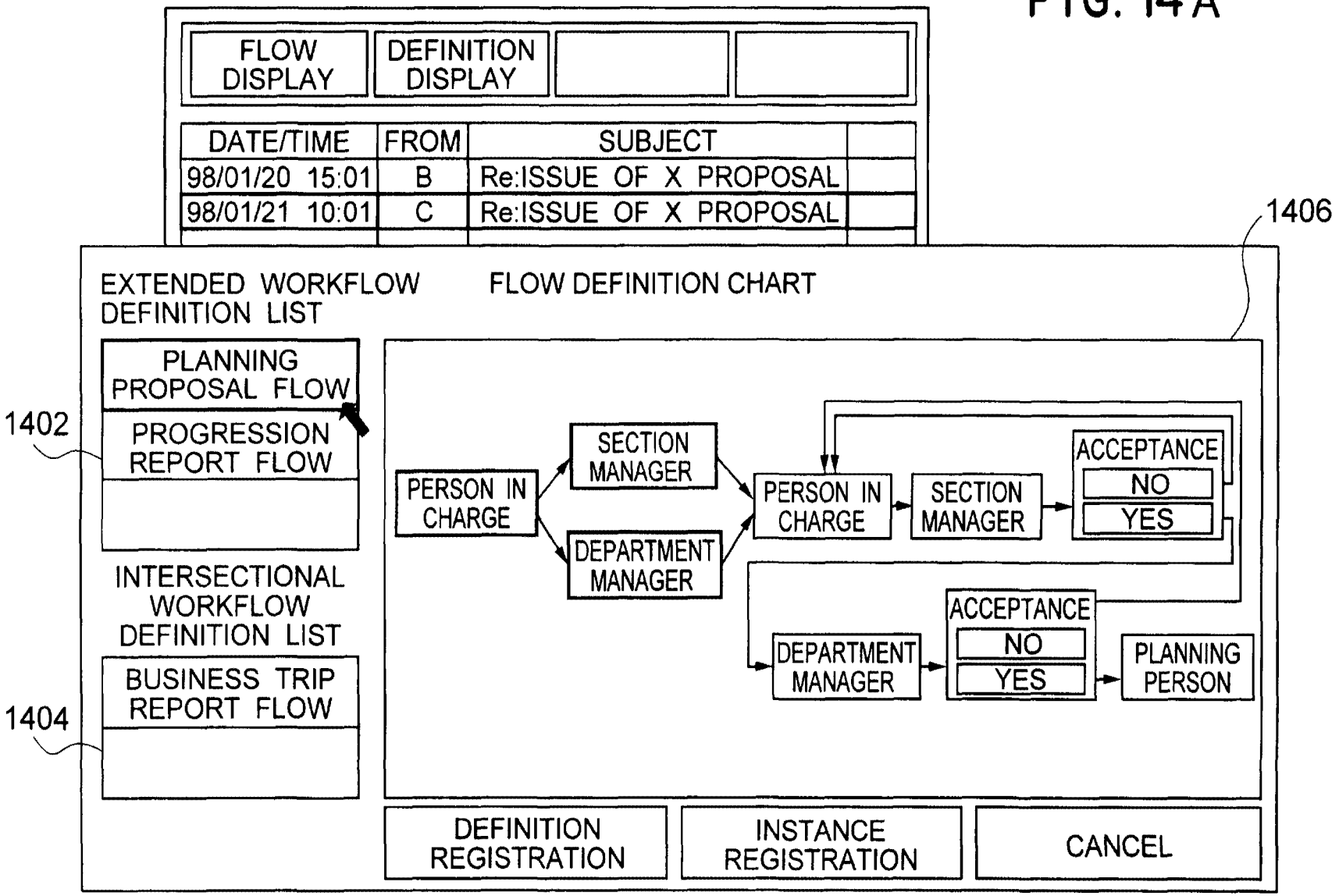
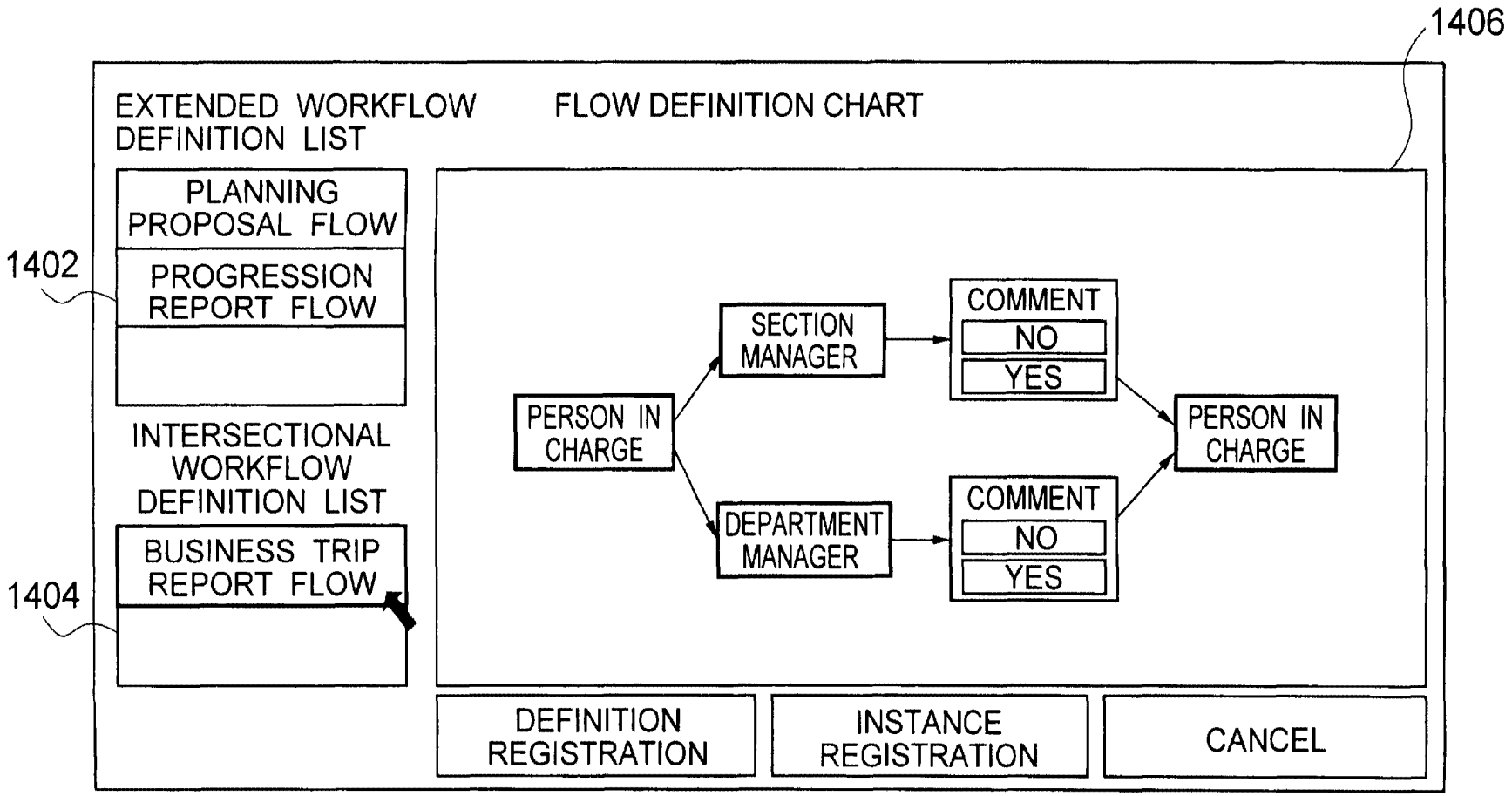


FIG. 14A



EP 0 974 919 A2

FIG. 14B



EP 0 974 919 A2

Electronic Acknowledgement Receipt

EFS ID:	11977803
Application Number:	90009960
International Application Number:	
Confirmation Number:	9422
Title of Invention:	APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES
First Named Inventor/Applicant Name:	7603674
Correspondence Address:	JOSEPH E. CHOVANES - 5 GREAT VALLEY PARKWAY SUITE 329 MALVERN PA 19355 US - -
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Attorney Docket Number:	OPEN2200-1
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Application Type:	Reexam (Third Party)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Reexam Timely Patent Owner's Stmnt in Resp to Order	960ostmt.pdf	284667 5e3a443eedfbf66c5da52489b218843ffdd9d4e3	no	15
Warnings:					
Information:					
2	Rule 130, 131 or 132 Affidavits	960sig.pdf	1467346 d7f0461b738e7446bcd622c6654d3f297830c496	no	46
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
3	Miscellaneous Incoming Letter	Certserv.pdf	77966 81640e4b062a3335f5458520fa21acddf75ec30f	no	1
Warnings:					
Information:					
4	Transmittal Letter	960ids.pdf	3416520 1080f8f24fdd4e320a4b0ee8488f3850982d47c7	no	103
Warnings:					
Information:					
		Total Files Size (in bytes):	5246499		

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<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.

<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.

<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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

STATEMENT BY PATENT OWNER IN REEXAMINATION UNDER MPEP §1.530

OWNER, YYZ LLC, of US Patent No. 7,603,674 (the " '674 patent" or the "patent") in the above identified reexamination, hereby files this Owner's Statement under MPEP § 1.530.

The references cited in the Order Granting Request For Ex Parte Reexamination dated December 1, 2011 (the "Order"), it is submitted, are not relevant to the inventions as defined by the claims of the patent.

I. INTRODUCTION

The Order, at paragraph 4, provides that "the prosecution history appears to indicate at least the following limitations to have been considered the allowable features: (1) Limitations directed toward reviewing/retrieving data collected in a transaction record from a central message repository (See Response filed 07/07/2008 and canceled claim 94: 01/26/2009); (2) Limitations directed toward a means for updating a transaction record (See: canceled claim 190: 01/26/2009)"

The Order identified the following references as possibly raising substantial new questions of patentability:

> 1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques, Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (hereafter "Production Workflow").
>
> 2) US Patent No. 7,003,781 issued to Blackwell et al. (hereafter "Blackwell").
>
> 3) Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS").
>
> 4) Leymann '633 - (U.S. Patent No. 6,122,633, published 09/19/2000).
>
> 5) Leymann '111 - (U.S. Patent No. 6,073,111, published 06/06/2000).
>
> 6) US Patent No. 2002/0038276 issued to Buhannic et al. (hereafter "Buhannic").

REMARKS

Applicant herewith encloses a Declaration Under 37 C.F.R. § 1.131 by Mr. Vincent Cyr (the "Cyr declaration") a named inventor on the patent and managing partner of YYZ LLC, the owner of the patent. In his Declaration Mr. Cyr swears that the inventions defined and set forth in at least independent claims 1, 51 and 140 (the "independent claims" or the "claims") of the patent were conceived at least as early as December 31, 1999 and diligently reduced to practice following conception, and therefore at least conception occurred prior to the 2000 copyright date of Production Workflow, the May 5, 2000 filing date of Blackwell and the June 26, 2000 priority date of Buhannic. (Cyr declaration at paras. 10, 18-19, 30.)

The Order, at pars. 5 and 6, uses independent claims 1, 51, and 140 as

representative claims for the proposed rejections in the request. Sections or limitations from each of the claims are utilized by the Office "to show how specific teachings of the proposed references create a substantial new question of patentability in light of the original prosecution history." Those limitations are:

Claim 1 "*…retrieving information from the central message repository…*"

Claim 51 "*...reviewing data collected in said transaction record…*"

Claim 140 "*…means for updating said transaction record…*"

Applicant also notes for the record that it is presently undergoing reexamination, on the same schedule on the parent (US Patent No. 6,062,749, the " '749 patent" or the " '749 parent") to this patent. In that action (filed by the same requester here) the Office has identified other limitations of similar claims in the parent to the claims here. More specifically, in that Order Granting Request For Ex Parte Reexamination dated December 1, 2011, Control No. 90/009,961 for US Patent No. 6,062,749 (the " '961 Order", incorporated here by reference) at page 6, identifies a substantial new question of patentability ("SNQ") as arising from a reference or combination of references that teach or suggest "a central message repository or providing, through a monitoring message, at least part of said original message data."

The '961 Order, as well, uses Production Workflow, Blackwell, AWS, and Buhannic to establish its SNQ. The '961 Order does not use the two Leymann references (Leymann '633 and Leymann '111) to establish its SNQ, holding that "these references were cited as secondary references in the Request and are not relied upon as raising a substantial new question of patentability."

Applicant also notes that each of the independent claims here share those

limitations of "a central message repository or providing, through a monitoring message, at least part of said original message data." While the Office here notes the prosecution history, Applicant respectfully requests the Office also note that the history shows the claims at issue here overcame a double patenting rejection based on the claims in the '749 parent. There was *no* substantive discussion of the limitations the Office would have be the basis of the SNQ in this Order. *See* 07/07/08 response at 26 – 27; 01/16/09 response at 28.

Finally, Applicant respectfully requests the Office note Applicant's duty is not to sustain patentability on this reexamination by showing the patentability of every element or limitation of every claim, but only to show those elements or limitations that are patentable over the art, which suffices under the law to sustain patentability of all the claim's elements. Applicant can and will show the independent claims here with their limitations of "a central message repository or providing, through a monitoring message, at least part of said original message data" are patentable over the references. That showing would and should suffice for patentability of the independent claims.

Therefore, Applicant respectfully but strenuously traverses the SNQ here.

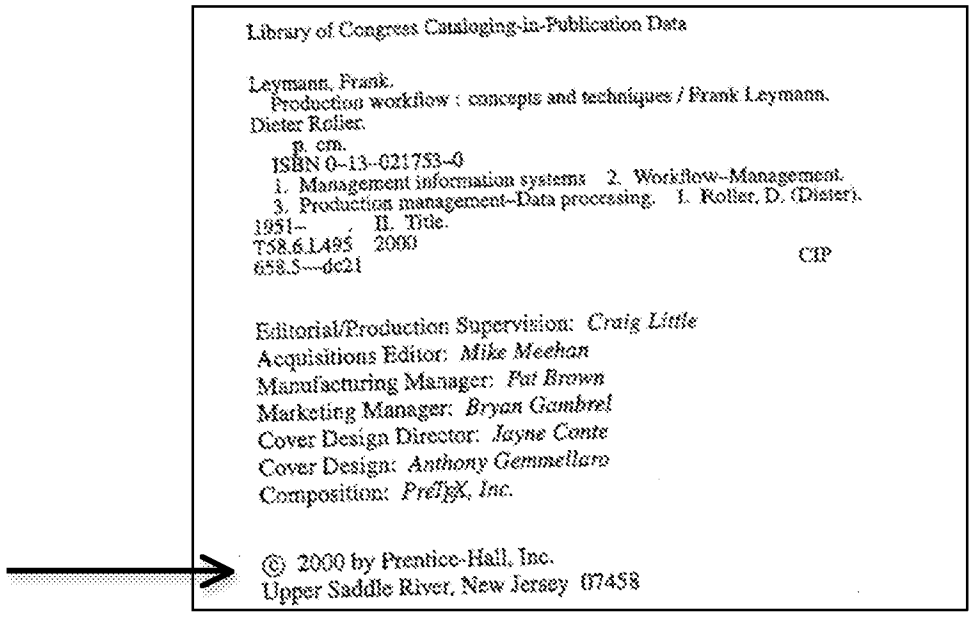
Applicant submits that the independent claims here with their limitations of "a central message repository or providing, through a monitoring message, at least part of said original message data" are patentable over the references.

Production Workflow

Production Workflow is antedated by the Cyr declaration in light of Production Workflow's copyright notice, present on the reverse side of Production Workflow's title page as filed by requester, as 2000, not 1999 as the Copyright Office's entry in its

database would have it. Additionally, the Library of Congress Cataloging-in-Publication data, also on the reverse side of the title page, has a date of 2000. Moreover, assuming arguendo that Production Workflow was registered as the Copyright Office's database, it is not a printed publication under the Court of Appeals for the Federal Circuit's holding in In re Lister, 583 F.3d 1307 (Fed. Cir. 2009) and therefore cannot function as prior art. Finally, Production Workflow is simply not prior art – it teaches a different method and apparatus than the inventions defined by the claims here, and, in fact, in one of the few similar components Production Workflow teaches away from the inventions as defined by the claims.

Production Workflow (requester's Exhibit C1) was accompanied by a printout purporting to be from the Copyright Office. The Office accepted requester's printout as evidence of a 1999 date for Production Workflow. However, as is seen below, the title page's reverse side of Production Workflow identifies its copyright as being 2000, not 1999:



Library of Congress Cataloging-in-Publication Data

Leymann, Frank.
Production workflow : concepts and techniques / Frank Leymann, Dieter Roller.
p. cm.
ISBN 0-13-021753-0
1. Management information systems 2. Workflow--Management.
3. Production management--Data processing. I. Roller, D. (Dieter).
1951- II. Title.
T58.6.L495 2000
658.5--dc21 CIP

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Cover Design: *Anthony Gemmellaro*
Composition: *PreTEX, Inc.*

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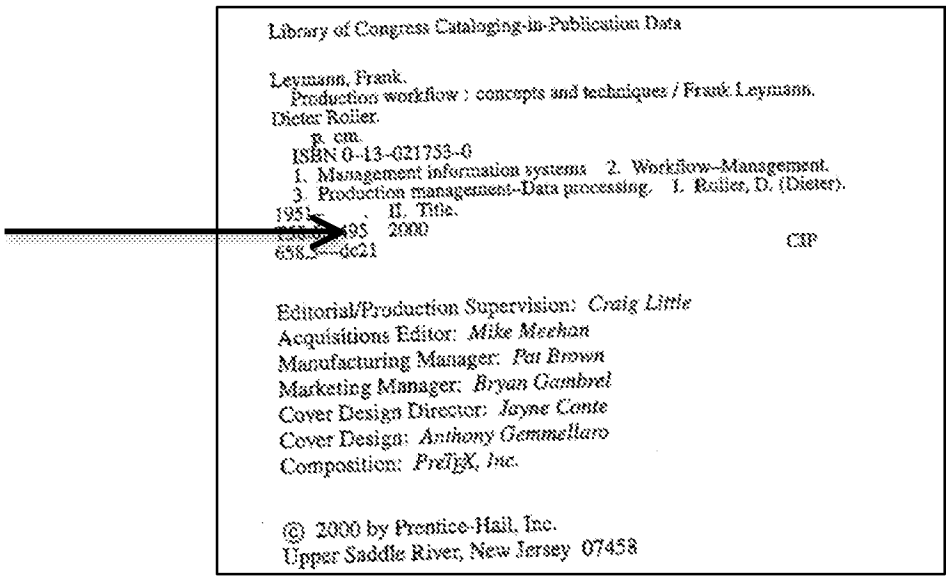
Upper Saddle River, New Jersey 07458

With all due respect to requester and the Office, the best evidence here for the truth of the matter asserted is Production Workflow – the reference – itself. The Copyright Office registration page is not competent evidence as it is an entry in a database with all the attendant possible inaccuracies accompanying such an entry.

Production Workflow also identifies its Library of Congress Cataloging-in-Publication date as 2000:



Library of Congress Cataloging-in-Publication Data

Leymann, Frank.
Production workflow : concepts and techniques / Frank Leymann, Dieter Roller.
p. cm.
ISBN 0-13-021753-0
1. Management information systems 2. Workflow--Management. 3. Production management--Data processing. I. Roller, D. (Dieter). II. Title.
195 . 95 2000
658.5'---dc21 CIP

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The Library of Congress data, present on the reference itself, provides further evidence that Production Workflow should be dated 2000, not 1999.

The Office, based on the best evidence, should therefore disregard Production Workflow as a reference. It is antedated by the facts set out in the Cyr declaration.

Moreover, and assuming again that the Office would date Production Workflow in 1999 (over Applicant's objection) there is no evidence showing Production Workflow was actually disseminated in 1999 – a crucial question in light of the 2000 copyright date and the 2000 Library of Congress Cataloging-in-Publication date. In *Lister,* the Federal Circuit held that simple registration in the Copyright Office database, without more, does

not make a printed publication. There is no search facility in the Copyright Office with keyword searching, and there was no evidence in *Lister*, *as here,* that the publication claimed as invalidating art had actually been accessed. Therefore, under the authority of *Lister*, and even if the Office assumes the date of Production Workflow is 1999 (despite the contrary evidence) Production Workflow would not be a printed publication.

The Office should therefore disregard Production Workflow as a reference as there is no evidence that it was available to the public before the December 31, 1999 conception date and subsequent diligent reduction to practice established by the Cyr declaration.

Finally, it should be noted that Production Workflow simply teaches a different invention, and therefore is not prior art. There is no monitoring message nor central message repository in Production Workflow, and the various citations provided in the Order do not show their presence in Production Workflow.

At pages 6-7 of the '961 Order, the Office states that:

> The output container received in a message from the activity implementation is stored in a database. Production Workflow teaches that the workflow management system stores an entry in the audit trail for all relevant actions. The entry contains all the important information about the event. The message sent from the workflow management system to the DBMS server with the output container (original message data) is a monitoring message. See section 2.7.1 on page 45, section 7.6 on pages 274·277, and page 57. Production Workflow discloses a workflow management system that has a server with multiple server components and clients for implementing activities. One of the server components is a DBMS server used to access a centralized database.

But, it is submitted, Production Workflow actually teaches away from any storage of an output container -- the Office's hypothetical storage of an output container is not possible because it would make Production Workflow unworkable:

> In a nutshell, within this global transaction the workflow management system materializes the input container for the implementation to be launched, changes the state of the activity to "activated", and communicates with the responsible execution component to launch the user provided transaction. Then, the transaction itself runs. Upon completion, the output container is sent to the workflow server. The workflow server stores that container into the workflow management system's database, checks the activity's exit condition, updates the state of the activity accordingly, if appropriate it continues navigating through the underlying process model, and produces work items. **Because of the negative impact of such a long transaction on the overall throughput this approach cannot even be considered in practice.** Instead, as we show in section 10.5.8 on page 384, the required transaction can be run as a "stratified transaction."
>
> (Production Workflow at 277, emphasis added.)

Turning to the internal reference cited in Production Workflow immediately above, at 384, Production Workflow teaches again that "Running all operations a [sic] as a regular transaction is not possible because it would require holding long locks in databases. The notion of stratified transactions helps here."

Stratified transactions then occur as a result of a "program execution agent" and other components as set forth in the following pages of Production Workflow. There is no database with output container in those pages – there cannot be as noted above – it would lead to system stoppage.

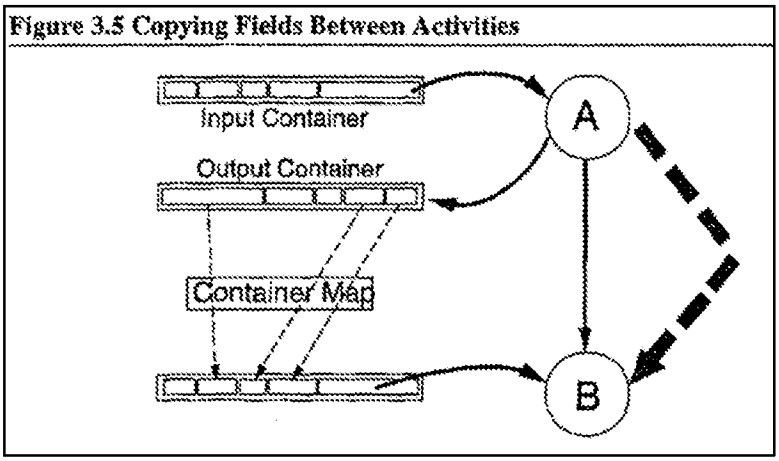
Note also that the storage of an output container leads to stoppage of the system because, unlike the teachings of the present inventions as defined by the claims, the output container is the original in workflow. *It isn't a monitoring message with a copy of original message data – it is original message data.* That is why the system stops – it can't have the output container locked up in a database – there would be no workflow.

The actual function of an output container, as Production Workflow makes clear, is to transfer data to an input container from another activity implementation:

Making Data Available

Processes and activities have containers associated with them. These containers are only locally available and not available globally. Thus, the input container of an activity is only available to the appropriate activity. If another activity needs data from a previous activity's output container or from the process input container, this data must be made available to the activity by copying the intonation from the other containers. Specifying which data needs to be copied from where is the purpose of *data connectors.* Figure 3.5 shows how data is copied from the output container of one activity to the input container of the next activity.

Figure 3.5 Copying Fields Between Activities



The dashed arrow is the data connector. It indicates that the output container of activity A should be copied to the input container of activity B. The output container of an activity is typically different in structure as are the contained fields from the input container of another activity. Fields may have different names and different types. Thus, the simple specification of a data connector is not sufficient; it is also necessary to specify the appropriate container map. This map specifies which field from the output container is used to fill a field in the input container. The map also specifies what data transformation is to be performed, if any, before the data is stored in the input container. Data connectors can not only be drawn between the output container of one activity and the input container of another activity but can also be drawn between the input container and the output container of the same activity.

(Production Workflow at 81-82)

Therefore, and contrary to the Office's assertion in the '961 Order, there is no storage nor copy of a stored output container – the output container is for moving data to

the next input container, whether in the course of the same or another activity. A data connector, not a database, helps the data fields in the input and output container be consistent.

The '961 Order also seems to imply that an audit trail is created which is the result of a monitoring message and, since the '961 Order states a monitoring message is the same as an output container copy, the audit trail must be the equivalent of a central message repository as claimed. But with all due respect, that is not what Production Workflow teaches. First there is no monitoring message. Second, the audit trail of Production Workflow is created by a Workflow Execution server:

> 10.3.5 Workflow Execution Server
> The main work of the workflow management system is carried out by the workflow execution server. It starts and finishes processes, navigates from one activity to the next, performs staff resolution, and sends appropriate requests to the program execution server or program execution agent for launching the activity implementation. It manages work items and the associated work lists. **It also writes the audit trail.**

(Production Workflow at 372, emphasis added.)

Recall that the output container is not used to do anything except provide data to an input container. There is no reference in Production Workflow to it being copied (probably because it work lock up the system if it were.) Therefore, the audit trail would not have a copy of the output container.

Production Workflow's audit trial does not appear to be the result of the messaging system – see Figure 10.10 – but rather the Workflow Execution Server. Therefore, there is no central message repository in Workflow Production, created by a monitoring message or otherwise, and there is no monitoring message, and Applicant respectfully requests the Office withdraw identification of Production Workflow as

raising a substantial new question of patentability for the reasons given above.

Blackwell

The Blackwell reference has been identified here and in the '961 Order as raising a substantial new question of patentability. Applicant respectfully traverses the Office's statement of the issue.

Blackwell is antedated by the Cyr declaration showing conception at least as early as December 31, 1999, with diligent effort towards reduction to practice. Therefore, Applicant respectfully requests the Office withdraw identification of Blackwell as raising a substantial new question of patentability for the reasons given above.

AWS

AWS has been identified here and in the '961 Order as raising a substantial new question of patentability. Applicant respectfully traverses the Office's statement of the issue.

AWS states nowhere that an audit trail is constructed by a monitoring message. AWS in fact, and in the Office's cited pages in the '961 Order, states specifically that there is no information from a data container in the audit trail, that AWS can't do it, and the only information available are object attributes – information about the object or container, not information from the container. AWS notes that the container could be looked at but since Flowmark can only make data available through descriptions Flowmark is limited:

> Description:
> For most events, the description of the object for which the status change is recorded is now available. This is the **first step** in making data container information available in the audit trail. So far, the only custom information in the audit trail were **object attributes,** such as process instance name. The current implementation requires the use of the

> 2%data_container_field_name%2 method, and parsing of the description field if more than one data element is contained in the description. Although it is possible to gain access to container data through the persistent object key (for example, get the persistent key, query the work item from the server, and get access to the input container), we strongly recommend that you only do this in rare exceptions, as it involves client-server API calls. **Making data available only through the descriptions is still a limitation,** but a future version of FlowMark should provide a better implementation.
>
> (AWS at 83, emphasis added.)

With all due respect the Office is simply incorrect in its assertions with regards to AWS, and the referenced pages show that AWS does not do what the Office would have it do.

In light of the teachings of AWS then its audit trial does not function as does a monitoring message and of course there is then no central message repository.

Therefore, Applicant respectfully requests the Office withdraw identification of AWS as raising a substantial new question of patentability for the reasons given above.

Buhannic

The Buhannic reference has been identified here and in the '961 Order as raising a substantial new question of patentability. Applicant respectfully traverses the Office's statement of the issue.

Buhannic is antedated by the Cyr declaration showing conception at least as early as December 31, 1999, with diligent effort towards reduction to practice. Therefore, Applicant respectfully requests the Office withdraw identification of Buhannic as raising a substantial new question of patentability for the reasons given above.

Leymann '633 and Leymann '111

The Order here has both Leymann references in combination with AWS. (The '961 Order did not address Leymann, holding they were "secondary references.") But as noted above, AWS is not prior art because its audit trial does not function as does a monitoring message and of course then no central message repository. Therefore, Applicant respectfully requests withdrawal of the Leymann references as prior art.

Therefore, in light of the above, Applicant respectfully requests the Office withdraw its identification of the issues raised in its Order, and permit the claims of the '674 patent to go to reissue.

Other Matters

In the event Applicant is seen as having a duty of litigation disclosure here, three matters have involved the '749 patent, all related cases in the Eastern District of Pennsylvania:

1) YYZ, LLC v. MetaStorm, Inc., 2011-cv-00931 (filed 02/07/2011, terminated 03/07/11;

2) YYZ, LLC v. MetaStorm, Inc., et. al., 2011-cv-01609 (filed 03/07/2011, Settlement Agreement executed January 31, 2012 (to be terminated); and,

3) InterSystems Corp. v. YYZ, LLC, 2011-cv-06602 (filed 10/21/2011, terminated 01/03/12.

It also should be noted by the Office that OpenText (the requester, by its counsel here) has agreed to not file any further permissive statement in this reexamination, and so should not be responding to this Owner's Statement. (OpenText has been served with a

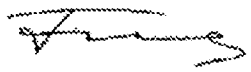
copy of this owner's statement as per the rules.)

Note also that Applicant reserves all rights with regard to any substantive response; this Owner's Statement is meant to bring certain matters to the Office's attention. Therefore, it should be specifically noted that Applicant reserves all rights with regard to this reexamination, and this Owner's statement is not intended to waive any rights. Applicant is accepting for the limited purpose of its statement herein the Office's various assertions in the Order, however, such acceptance herein is in no way to be construed as agreement with said assertions by Applicant, and Applicant respectfully but strenuously traverses all assertions in the Order (and of course, in the request for reexamination.)

In view of the foregoing arguments, all claims are believed to be in condition for confirmation over the prior art of record. Therefore, this response is believed to be a complete response to the Order. However, Applicant reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. The absence of a reply to a specific rejection, issue or comment in the Order does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Dated: February 1, 2012

Respectfully Submitted,



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/009,960	11/07/2011	7603674	OPEN2200-1	9422

7590 06/13/2012

EXAMINER	
ART UNIT	PAPER NUMBER

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DATE MAILED: 06/13/2012

Please find below and/or attached an Office communication concerning this application or proceeding.

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EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/009,960*.

PATENT NO. *7603674*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/009,960	Patent Under Reexamination 7603674
	Examiner ADAM BASEHOAR	Art Unit 3992

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

a☒ Responsive to the communication(s) filed on *02 February 2012*. b☐ This action is made FINAL.
c☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☒ Information Disclosure Statement, PTO/SB/08.
3. ☐ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☒ Claims *1-173* are subject to reexamination.
1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☐ Claims _____ are patentable and/or confirmed.
4. ☒ Claims *1-173* are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a)☐ approved (7b)☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   1☐ been received.
   2☐ not been received.
   3☐ been filed in Application No. _____.
   4☐ been filed in reexamination Control No. _____.
   5☐ been received by the International Bureau in PCT application No. _____.
   * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.
10. ☐ Other: _____

cc: Requester (if third party requester)

DETAILED ACTION

1. This Office action addresses claims 1-173 of United States Patent Number 7,603,674 B2 (Cyr et al), for which it has been determined in the Order Granting Ex Parte Reexamination (hereafter the "Order") mailed 12/01/2011 that a substantial new question of patentability was raised in the Request for *Ex Parte* reexamination filed on 11/07/2011 (hereafter the "Request"). This is a Non-Final Action in response to Patent Owner's (PO) statement filed 02/01/2012.

Reexamination

2. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,603,674 B2 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

3. Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

4. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

References Submitted by Requester

5. The following six references have been cited as establishing a substantial new question of patentability. See Order, mailed 12/01/2011.

- **Production Workflow** – (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0)
- **Blackwell** – (U.S. Patent No. 7,003,781, published 02/21/2006)
- **Advanced Workflow Solutions (AWS)** – (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00)
- **Leymann '633** – (U.S. Patent No. 6,122,633, published 09/19/2000)
- **Leymann '111** – (U.S. Patent No. 6,073,111, published 06/06/2000)
- **Buhannic** – (U.S. Patent Application Publication No. 2002/0038276, published 03/28/2002)

Information Disclosure Statement

6. In regard to the IDS filed 02/01/2012:

Where the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action. See Guidelines for Reexamination of Cases in View of In re Portola Packaging, Inc., 110 F.3d 786, 42 USPQ2d 1295 (Fed. Cir. 1997), 64 FR at 15347, 1223 Off. Gaz. Pat. Office at 125 (response to comment 6).

Consideration by the examiner of the information submitted in an IDS means that the examiner will consider the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search. The initials of the examiner placed adjacent to the citations on the PTO-1449 or PTO/SB/08A and 08B or its equivalent mean that the information has been considered by the examiner to the extent noted above. MPEP § 609 (Eighth Edition, Rev. 5, August 2006).

Regarding IDS submissions MPEP 2256 recites the following: "Where patents, publications, and other such items of information are submitted by a party (patent owner or requester) in compliance with the requirements of the rules, the requisite degree of consideration to be given to such information will be normally limited by the degree to which the party filing the information citation has explained, the content and relevance of the information."

Accordingly, the IDS submission filed 02/01/2012 has been considered by the Examiner only with the scope required by MPEP 2256.

Patent Owner's Statement

Production Workflow Reference Date

7. With regard to the Production Workflow reference, PO argues that the reference is not a printed publication and should not be afforded the 1999 date, but rather should at best be given the copyright date of 2000 (PO Statement: Pages 4-7). The Examiner respectfully disagrees with the PO. Production Workflow (Exhibit C1) clearly shows that its "Date of Publication" was 07/30/1999 as disclosed by the listing of the Production Workflow reference in the Copyright

Catalog of the Copyright Office. The "Date of Publication" is the date the first publication occurred of the particular work, wherein a publication is defined by the 1976 Copyright Act as follows:

> "Publication" is the distribution of copies or phonorecords of work to the public by sale or other transfer of ownership, or by rental lease, or lending. The offering to distribute copies or phonorecords to a group of persons for purposes of further distribution, public performance, or public display constitutes publication. A public performance or display of work does not itself constitute publication."

Therefore the Office must trust that the evidence presented by the Copyright Office with regard to the publication date of the Production Workflow is accurate. Said evidence being provided under 17 U.S.C. §506(e), which stipulated true/accurate information under penalty ("Any person who knowingly makes a false representation of a material fact in the application for copyright registration provided for by section 409, or in any written statement filed in connection with the application, shall be fined not more than $2,500").

PO further cites In re Lister for teaching that merely being registered in the Copyright Office's database, is not a printed publication and therefore cannot function as prior art. Again, the Examiner respectfully disagrees with the PO and notes that the facts laid out in In re Lister do not specifically apply to the Production Workflow reference. In re Lister resolved issues related to an unpublished work registered in the Copyright Office database and associated commercial databases. Without an explicit publication date the issue raised was to what extent said unpublished work was publicly accessible prior to the critical date. However, as shown above, the Production Workflow reference has been provided with an explicit publication date and

therefore the extent to which the Copyright Office database could be searched is not considered relevant in this instance. Thus for the purposes of this reexamination the Production Workflow reference will be given a priority date of 07/30/1999.

Swearing Back of Reference — Affidavit or Declaration Under 37 CFR 1.131

8. The Cyr declaration filed on 02/01/2012 under 37 CFR 1.131 has been considered but is ineffective to overcome the Production Workflow, Blackwell, and Buhannic references.

The Examiner notes that the Production Workflow reference is a statutory bar under 35 U.S.C. 102(b) and thus cannot be overcome by an affidavit or declaration under 37 CFR 1.131.

The affidavit or declaration must state FACTS and produce such documentary evidence and exhibits in support thereof as are available to show conception and completion of invention in this country or in a NAFTA or WTO member country (MPEP §715.07(c)), at least the conception being at a date prior to the effective date of the reference. Where there has not been reduction to practice prior to the date of the reference, the applicant or patent owner must also show diligence in the completion of his or her invention from a time just prior to the date of the reference continuously up to the date of an actual reduction to practice or up to the date of filing his or her application (filing constitutes a constructive reduction to practice, 37 CFR 1.131). The Examiner notes that the Cyr declaration does not appear to attempt to individually address the three distinct critical periods related to the Production Workflow, Blackwell, and Buhannic references. Instead, in order to antedate the Production Workflow, Blackwell, and Buhannic references, the Cyr declaration attempts to present facts sufficient to show conception of the invention at least as early as December 31, 1999 coupled with due diligence during a single

critical period from prior to December 31, 1999 to December 15, 2000, (the filing date of the 09/737,494 application from which the '674 application is a continuation - constructive reduction to practice).

Conception

Conception is the mental part of the inventive act, but it must be capable of proof, as by drawings, complete disclosure to another person, etc. In Mergenthaler v. Scudder, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897), it was established that conception is more than a mere vague idea of how to solve a problem; the means themselves and their interaction must be comprehended also. The inventor must form a definite and permanent idea of the complete and operable invention to establish conception. Accordingly, there must be contemporaneous recognition and appreciation of the invention for there to be conception wherein it is settled that in establishing conception a party must show possession of every feature recited in the count, and that every limitation of the count must have been known to the inventor at the time of the alleged conception.

The 37 CFR 1.131 declaration must establish possession of either the whole invention claimed or something falling within the claim (such as a species of a claimed genus), in the sense that the claim as a whole reads on it. In re Tanczyn, 347 F.2d 830, 146 USPQ 298 (CCPA 1965). The declaration and exhibits must clearly explain which facts or data patent owner is relying on to show conception of the invention prior to the effective dates of the references. Vague and general statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe conception "amounts essentially to mere pleading, unsupported by

proof or a showing of facts" and, thus, does not satisfy the requirements of 37 CFR 1.131(b). In re Borkowski, 505 F.2d 713, 184 USPQ 29 (CCPA 1974). Patent Owner must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by Patent Owner. 505 F.2d at 718-19, 184 USPQ at 33. See also In re Harry, 333 F.2d 920, 142 USPQ 164 (CCPA 1964) (Affidavit "asserts that facts exist but does not tell what they are or when they occurred."). The essential thing to be shown under 37 CFR 1.131 is priority of invention and this may be done by any satisfactory evidence of the fact. FACTS, not conclusions, must be alleged.

The Patent Owner (PO) Cyr declaration appears to merely assert that certain features of independent claims 1, 51, and 140 are shown by the evidence (Cyr Dec: Paragraphs 10 and 11). First, the Cyr declaration relies upon Exhibit A (dated August 1998) to show evidence that the inventor began to recognize and appreciate the intelligent messaging components of the invention but specifically states that Exhibit A does not claim/show conception (Cyr Dec: Paragraph 13). The evidence relied upon to show conception of the independent claims appears to merely be a statement that, "During 1999, I conceived of the inventions as defined by at least the independent claims by forming a definite and permanent idea of the complete and operable invention realized by the independent claims" and "During 1999, I formed a definite...used by the investors, etc." (Cyr Dec: Paragraphs 18 & 19 respectively). Outside of these statements the Cyr declaration is silent on showing actual facts in the evidence that provide proof that important features of the claimed invention are disclosed by the evidence. The statements are thus insufficient because they fail to provide a clear explanation of the exhibit with an appropriate mapping to the claimed subject matter. Therefore the evidence and declaration provided are insufficient to show conception of the invention prior to December 31, 1999 or prior to the

effective dates of the Production Workflow, Blackwell, and Buhannic references for claims 1, 51, and 140.

Diligence

The critical period for diligence for a first conceiver but second reducer begins not at the time of conception of the first conceiver but just prior to the entry in the field of the party who was first to reduce to practice and continues until the first conceiver reduces to practice. Hull v. Davenport, 90 F.2d 103, 105, 33 USPQ 506, 508 (CCPA 1937) ("lack of diligence from the time of conception to the time immediately preceding the conception date of the second conceiver is not regarded as of importance except as it may have a bearing upon his subsequent acts"). An applicant must account for the entire period during which diligence is required. Gould v. Schawlow, 363 F.2d 908, 919, 150 USPQ 634, 643 (CCPA 1966) (Merely stating that there were no weeks or months that the invention was not worked on is not enough.); In re Harry, 333 F.2d 920, 923, 142 USPQ 164, 166 (CCPA 1964) (statement that the subject matter "was diligently reduced to practice" is not a showing but a mere pleading). A 2-day period lacking activity has been held to be fatal. In re Mulder, 716 F.2d 1542, 1545, 219 USPQ 189, 193 (Fed. Cir. 1983) (37 CFR 1.131 issue); Fitzgerald v. Arbib, 268 F.2d 763, 766, 122 USPQ 530, 532 (CCPA 1959) (Less than 1 month of inactivity during critical period).

The evidence submitted in the Cyr declaration is insufficient to establish diligence from a date prior to the date of reduction to practice of Production Workflow, Blackwell, and Buhannic references to December 15, 2000 (the filing date of the 09/737,494 application from which the '674 application is a continuation - constructive reduction to practice). The Cyr declaration and

evidence fail to show diligence during the critical periods, wherein the Exhibits provided are insufficient to establish diligence. Not only does the evidence provided not encompass the entire critical period, it is also completely unclear how this evidence shows diligence. The Cyr declaration (Cyr Dec: Paragraph 19) states that, "During 1999...diligently reduce the invention defined by the claims to practice." To show this the declaration provides four Exhibits "B", "C', "D", and "E." Exhibit B was a spreadsheet initially created "in my effort to diligently reduce the inventions as defined by the claims to practice" and shows generally a sample run of a simulated business process (Cyr Dec: Paragraphs 20-22). It is indicated that the spreadsheet file was created on 01/11/2000, however the Examiner notes that said file also indicates that it was last modified on 01/20/2012, and thus the actual date of the evidence relied upon in Exhibit B cannot be accurately determined. Exhibit C is undated evidence that appears to show an XML data structure for the monitoring message and/or message repository (Cyr Dec: Paragraphs 23-24). Exhibit D was prepared on March 9, 2000 in my "continuing diligent effort to reduce the inventions as defined by the claims to practice" and contained "information that was also used in the patent" including "references to monitoring messages and database or central message repository as defined in the independent claims." (Cyr Dec: Paragraphs 25-28). Exhibit E was prepared August 7, 2000. Exhibit E being draft documentation of a model which contained some information that was used in the patent (Cyr Dec: Paragraph 29).

The final statement (Cyr Dec: Paragraph 30) that, "and diligently reduced to practice following conception by constructing and writing software code and documentation in accordance with Exhibits A-E and conducting tests that established that the methods and apparatus of the inventions defined by the claims worked for their intended purposes," does not

cure the deficiency that the evidence does not actually address the entire critical period. For example, the time periods between Exhibit B and Exhibit D (01/11/2000-03/09/2000), Exhibit D and Exhibit E (03/09/2000-08/07/2000), and Exhibit E and the constructive reduction to practice (08/07/2000-12/15/2000), are not specifically accounted for in the declaration. The declaration relies on a statement that the inventors worked diligently to reduce the invention to practice, however as shown above this is not a showing but a mere pleading which is not proper.

For the above reasons the Declaration Under 37 CFR 1.131 is not sufficient to prove conception or diligence.

Production Workflow

9. With regard to the Production Workflow reference, PO argues that there is neither a monitoring message nor a central message repository described in the Production Workflow reference (PO Statement: Pages 7-10). The Examiner respectfully disagrees with the PO. The Production Workflow references teaches wherein the workflow management system stores an entry in the audit trail for all relevant actions related to an activity (Production Workflow: Pages 105-106). The entry in the audit trail specifically includes the input passed to the activity and the output produced by the activity (Production Workflow: Page 45). Production Workflow also teaches that the workflow management system uses the database management system to store any updates for each workflow relevant event. The context of each workflow is available in the system's database and includes a stored copy of the output containers of all completed activities (Production Workflow: Page 275). The Examiner acknowledges that Production Workflow

teaches copying one activity's output container to the input container of a second activity (Production Workflow: Pages 81-82), however, that specific feature of Production Workflow does not appear to preclude the "monitoring message" and "central message repository" as disclosed in the Request (Request: Pages 14-20) and referenced in the rejections below. Therefore, PO arguments with regard to the Production Workflow reference are not considered persuasive.

Advanced Workflow Solutions (AWS)

10. With regard to the Advanced Workflow Solutions (AWS) reference, PO argues that the audit trail does not function as a monitoring message and that there is no central message repository (PO Statement: Pages 11-12). The Examiner respectfully disagrees. The Advanced Workflow Solutions (AWS) reference teaches sending back a message from an application that a given activity in a process was complete, said message including information to be stored by the FlowMark system (AWS: Page 52). The FlowMark system taught recording every event that occurs in the system by storing audit trail records in an audit trail data store. The audit trail records containing process information (e.g., start time/date, user ID, completion time/date, etc.) as well as returned completed activity information (e.g., time/date assigned, user IDs, when completed, etc.)(AWS: Pages 82-83). Advanced Workflow Solutions (AWS) taught that audit trail records containing the returned process and activity information were processed by an audit trail processor and sent to said audit trail data store to be stored (AWS: 84-86). The Examiner acknowledges that Advanced Workflow Solutions (AWS) teaches including additional fields of information in the audit trail such as the description of the object from which the status change

was being recorded, the description being associated with the full data container and the data contained therein (AWS: 83). However, said description of the object does not appear to preclude the "monitoring message" and subsequent storage in the "central message repository" as disclosed in the Request (Request: Pages 38-44) and referenced in the rejections below. Therefore, PO arguments with regard to Advanced Workflow Solutions (AWS) reference are not considered persuasive.

Claim Rejections

11. The rejections below are confined to what has been deemed to be the best available art from the Request. However, prior to conclusion of this reexamination proceeding, claims must be patentable over all prior art cited in the order granting reexamination in order to be considered patentable or confirmed on the reexamination certificate.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-18, 20, 38, 39, 41-49, 51-86, 88, 90-107, 109, 127, 128, 130-138, 140-170, 172 and 173 are rejected under 35 U.S.C. 102(b) as being anticipated by Production Workflow (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0).

-Regarding claims 1-18, 20, 38, 39, 41-49, 51-86, 88, 90-107, 109, 127, 128, 130-138, 140-170, 172 and 173, Production Workflow teaches each and every limitation of the claims (see pages 14-25 of Request, and the claim charts on pages 59-104 of Appendix "A-1", which is hereby incorporated by reference).

14. Claims 1, 3, 5-7, 10-13, 15, 17-18, 41, 44, 46-48, 70, 72, 75, 77, 79, 90, 92, 94-96, 99-102, 104, 106-107, 109, 130, 133, 135-137, 154, 156, 159, 161, 163, and 172-173 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell (U.S. Patent No. 7,003,781).

-Regarding claims 1, 3, 5-7, 10-13, 15, 17-18, 41, 44, 46-48, 70, 72, 75, 77, 79, 90, 92, 94-96, 99-102, 104, 106-107, 109, 130, 133, 135-137, 154, 156, 159, 161, 163, and 172-173, Blackwell teaches each and every limitation of the claims (see pages 27-36 of Request, and the claim charts on pages 115-135 of Appendix "B-1", which is hereby incorporated by reference).

15. Claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 are rejected under 35 U.S.C. 102(b) as being anticipated by Advanced Workflow Solutions (AWS) (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and

Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00).

-Regarding claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173, Advanced Workflow Solutions (AWS) teaches each and every limitation of the claims (see pages 37-47 of Request, and the claim charts on pages 151-196 of Appendix "C-1", which is hereby incorporated by reference).

16. Claims 1, 46, 51, 70, 135, 140, and 154 are rejected under 35 U.S.C. 102(e) as being anticipated by Buhannic (U.S. Patent Application Pub. No. 2002/0038276).

-Regarding independent claims 1, 46, 51, 70, 135, 140, and 154, Buhannic teaches each and every limitation of the claims (see pages 51-58 of Request, and the claim charts on pages 213-220 of Appendix "D", which is hereby incorporated by reference).

Claim Rejections - 35 USC § 103

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

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 19, 21, 40, 50, 87, 89, 108, 110, 129, 139, and 171 are rejected under 35 U.S.C. 103(a) as being unpatentable over Production Workflow (LEYMANN, FRANK, and ROLLER,

DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0).

-Regarding claims 19, 21, 50, 108, 110, and 139, Production Workflow in view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 106, 111, 112, and 114 of Appendix "A-2", which is hereby incorporated by reference).

-Regarding claims 40, 87, 89, 129, and 171, Production Workflow in view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 70, 87, 88, 93, and 104 of Appendix "A-1", which is hereby incorporated by reference). The Examiner notes that the Production Workflow reference shows utilizing a web browser for accessing information via a network such as an Internet, Intranet, and via mobile devices on the road (Production Workflow: Pages 27-29, 115, 377). Wherein the Production Workflow reference does not explicitly teach an extranet network or utilizing WAP, the Examiner notes that both features were well known in the art at the time of the invention and would have provided the system of Production Workflow the well known benefits of allowing customers/users controlled access to private/corporate data via the Intranet as well as providing interactive access to information wirelessly via mobile devices.

19. Claims 22-26, 28-37, 111-115, 117-126 and 139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Production Workflow (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0) in view of Buhannic (U.S. Patent Application Pub. No. 2002/0038276).

-Regarding claims 22-26, 28-37, 111-115, 117-126 and 139, Production Workflow in view of Buhannic in further view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 106-114 of Appendix "A-2", which is hereby incorporated by reference). With regard to 22-26, 28-37, 111-115, 117-126 and 139, the Examiner additionally notes that the Buhannic reference taught the well-known functionality of creating a redundant mirror arrangement of components in a client/server messaging system (Buhannic: Paragraph 14: "may be a plurality of similar nodes in...redundant mirror arrangement"). It would have been obvious to one of ordinary skill in the art at the time of the invention for certain components of the workflow messaging systems and database messaging systems of Production Workflow to have utilized redundant mirror arrangements as described in Buhannic, because Buhannic taught that said arrangement provided the benefit of system scalability as well as fail-safe operation (Buhannic: Paragraph 14: "provide scalability and/or fail-safe operation").

20. Claims 2, 38, 51-55, 57-60, 63-65, 67, 69, 71, 91, 127, 140-146, 149-151, 153, and 155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell (U.S. Patent No. 7,003,781).

-Regarding claims 2, 38, 51-55, 57-60, 63-65, 67, 69, 71, 91, 127, 140-146, 149-151, 153, and 155, Blackwell in view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 136-150 of Appendix "B-2", which is hereby incorporated by reference).

21. Claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over Advanced Workflow Solutions (AWS) (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00) in view of Leymann '111 (U.S. Patent No. 6,073,111).

-Regarding claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170, the combination of Advanced Workflow Solutions (AWS) and Leymann '111 teaches each and every limitation of the claims (see the claim charts on pages 198-201 of Appendix "C-2", which is hereby incorporated by reference). Further, the Examiner notes that it would have been obvious to combine the teachings of Leymann '111 with the FlowMark based workflow management system of Advanced Workflow Solutions (AWS), because the teachings of Leymann '111 were also based on IBM's FlowMark workflow management system (Leymann '111: column 7, lines 15-16) and provided the benefit of improving the integration of applications within workflow management systems (Leymann '111: column 4, lines 15-18).

22. Claims 52-55, 57, 58, 77, 78, 141-144, 161, and 162 are rejected under 35 U.S.C. 103(a) as being unpatentable over Advanced Workflow Solutions (AWS) (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00) in view of Leymann '633 (U.S. Patent No. 6,122,633).

-Regarding claims 52-55, 57, 58, 77, 78, 141-144, 161, and 162, the combination of Advanced Workflow Solutions (AWS) and Leymann '633 teaches each and every limitation of the claims (see the claim charts on pages 203-211 of Appendix "C-3", which is hereby

incorporated by reference). Further, the Examiner notes that it would have been obvious to combine the teachings of Leymann '633 with the FlowMark based workflow management system of Advanced Workflow Solutions (AWS), because the teachings of Leymann '633 were also based on IBM's FlowMark workflow management system (Leymann '633: column 4, lines 35-37) and provided the benefit of extending workflow management systems with a performance improved subscription for component processing stored audit trails (Leymann '633: column 3, lines 9-13 & 42-59).

Conclusion

23. All correspondence relating to this ex parte reexamination proceeding should be directed as follows:

By U.S. Postal Service Mail to:

Mail Stop Ex Parte Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to:

(571) 273-9900
Central Reexamination Unit

By hand to:

Customer Service Window
Randolph Building
401 Dulany St.
Alexandria, VA 22314

By EFS-Web:

Registered users of EFS-Web may alternatively submit such correspondence via the electronic filing system EFS-Web, at

https://efs.uspto.gov/efile/myportal/efs-registered

EFS-Web offers the benefit of quick submission to the particular area of the Office that needs to act on the correspondence. Also, EFS-Web submissions are "soft scanned" (i.e., electronically uploaded) directly into the official file for the reexamination proceeding, which offers parties the opportunity to review the content of their submissions after the "soft scanning" process is complete.

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/Adam L Basehoar/

Primary Examiner, Art Unit 3992

Conferees:

/RSD/

ALEXANDER J. KOSOWSKI
Supervisory Patent Reexamination Specialist
CRU -- Art Unit 3992

PTO/SB/08a (05-03)
Approved for use through 04/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	CONTROL No. 90/009960
Filing Date	Dec. 15, 2000
First Named Inventor	Cyr, Vincent
Art Unit	3992
Examiner Name	Adam Basehoar
Attorney Docket Number	~~YYZ RE 002~~

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 5,301,320			
		US- 5,581,691			
		US- 6,092,102			
		US- 6,256,676			
		US- 6,725,445			
		US- 6,961,735			
		US- 6,970,945			
		US-			
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		WO 00/46723	08/10/2000	MACINTYRE		
		EP 0 974 919 A2	01/26/2000	HITACHI		

Examiner Signature	/Adam Basehoar/	Date Considered	06/07/2012

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /AB/

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	11/28/2011	ALB
Reviewed Proposed Prior Art	5/16/2012	ALB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Certificate Date	Certificate Number

Requester Correspondence Address:	☐ Patent Owner	☒ Third Party

SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

LITIGATION REVIEW ☒	ALB (examiner initials)	06/06/2012 (date)
Case Name		Director Initials
2:11-cv-01609-JCJ		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
1. None Found	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

DECLARATION UNDER 37 C.F.R. §1.131

I, Vincent R. Cyr, make this second declaration in support of YYZ's Response to the first Office Action, filed herewith, and in the above identified reexamination, and do hereby declare the following:

1. I am a named inventor of the above-identified patent (the" '674 patent" or the "patent").

2. I am the manager of YYZ LLC, the owner of the patent.

3. I have been duly authorized by YYZ LLC to file this declaration. I have previously filed a declaration in this reexamination and adopt that declaration herein by reference (the "first declaration").

4. I was a cofounder, President and employee of Promenix, Inc. ("Promenix") the prior owner of the above referenced patent, in 2000. I was employed by Promenix from 1998, when we founded the company, to 2006, which was after the time Promenix transferred ownership of the above referenced patent to YYZ, Inc., the present owner.

5. My background is in the information technology area and I have worked in that

area for 27 years.

6. Promenix was a small company with a maximum of thirty seven employees at any one time, located in a small multiroom office complex in Chadds Ford PA.

7. Promenix was in the business of implementing enterprise application software. These implementations, almost invariably in large enterprises, take months and are often extremely complicated as those enterprises have existing legacy systems, multiple locations, and multiple stakeholders, and may be integrating other types of new technology as well at the same time.

8. Promenix became interested in alternative revenue streams, areas we could explore without being subject to the vagaries of the enterprise market, as large enterprise installs of the type we did could be subject to a boom or bust mentality.

9. In pursuing those alternate streams, I began to become interested in messaging technology, which formed a possible backbone for enterprise installs, in that messaging often provides a protocol for transmitting information among disparate programs and systems.

10. In 1998, I started discussing possible uses of messaging technology in a business context with Matthew Franklin ("Matt") of Promenix. In August 1998 I discussed Exhibit A with Matt, in our offices in Chadds Ford, which was a document I had created exploring messaging technology for our customers.

11. In 1999 Matt and I had further discussions and I formed at some point during that year a definite and permanent idea that monitoring messages could be used

from a messaging system (e.g., IBM MQSeries) with a central message repository and providing, through a monitoring message, at least part of said original message data to that repository in order to identify the status of a business process and its various elements. During our discussions that year, we discussed how that information could be used internally for status updates, disseminated to prospective customers, used by investors, etc.

12. I specifically recall the 1999 conversations because they took place as we were also working on an unrelated patent application during 1999, which we filed on New Year's Day 2000. At least some conversations about my conception of the inventions of the above referenced patent took place as we were working on drafts and other materials in relation to that New Year's Day application.

13. I do not recall greater detail aside from what I have set forth here however as it was over twelve years ago. Nor do I have documents evidencing any discussions, as Promenix did not generate many documents because of its size (we had no such thing as inventor notebooks) and Promenix kept very few documents of those it did generate when Promenix went out of business in 2006. Generally if we needed to communicate, it was our custom and practice to do so in personal meetings or over the telephone.

14. I do recall discussing Exhibit B, a document created by me in our offices in Chadds Ford, PA, with Matt and Kenneth Fritz ("Ken") of Promenix on or about the time I created it, January 11, 2000. Note the creation date is superimposed though the properties screen, however, the modification date of January 30, 2012 also seen in the properties screen was a result of my or Mr.

Chovanes (our patent counsel) preparing the exhibit in the course of attaching it to my first declaration referred to above. No changes to the document were made on that date.

15. I had generated Exhibit B in the course of attempting to explore construction of a prototype and used our SAP R/3 installation in our offices, at least in part to capture data through a monitoring message ("original message data") in a database or central message repository.

16. On or about March 9, 2000, Ken, Matt and I specifically discussed the document attached here as Exhibit C, which had been prepared by me.

17. As I mentioned above, Promenix was a small company, with our resources devoted to enterprise installs, yet Matt and I decided that the technology shown by Exhibit C was sufficiently promising to engage upon a development campaign, and Ken was assigned to build a prototype, with Matt's and my guidance.

18. Ken began work on the prototype immediately, and for the next six months, he, I and Matt had regular, almost daily conversations regarding elements of the prototype, interrupted only by our need to work on Promenix's revenue generating business.

19. I was aware Ken was working almost daily on the prototype because, I explained above, Promenix was housed in a small multiroom office complex, and I saw Ken everyday he and I were there.

20. On or about August 9, 2000, Ken presented Matt and I with the document attached here as Exhibit D which was as it states, the first working prototype of

the inventions of the independent claims of the patent. Ken also showed us the prototype as it worked and was existing on our server, and I specifically recall observing how monitoring messages could be used from a messaging system (e.g., IBM MQSeries) and provide at least part of said original message data to a central message repository in order to identify the status of a business process and its various elements, in accordance with claim 1 and the other independent claims of the patent.

21. That is, I specifically recall Ken presenting to Matt and I,

A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

retrieving information from the central message repository.

which is claim 1 of the patent, and I also recall Ken presenting to us the other elements of the other independent claims.

22. Therefore, from on or about March 9, 2000 to on or about August 9, 2000, I observed Ken working almost daily, interrupted only by his work on Promenix's revenue generating business, on the inventions defined and set forth in at least independent claims 1, 46, 51, 70, 90, 135, 140 and 154 (the

"independent claims") of the above referenced patent.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: August 12, 2012

VINCENT R. CYR
YYZ LLC

EXHIBIT A

Systems Integration:

Using Intelligent Messaging with SAP R/3™

Vincent R. Cyr
President, Promenix Inc.

August 1998

Executive Summary

Implementing SAP R/3 involves many elements; Business process understanding, software configuration, education of users and support personnel, and a myriad of other related activities. One of the more challenging elements involves the integration of R/3 with all of the other systems in your organization (and possibly with systems external to your organization). This paper provides an insight to the use of *Intelligent Messaging* (IM) to speed up the integration process as well as providing a long-term strategy for additional integration efforts.

Whether you believe in *Best in Class* or *Best of Breed,* the fact remains that heterogeneous systems exist in your organization and they probably will continue to do so for many years to come. In fact, given the proliferation of packaged applications, custom development tools, and Internet –based applications, heterogeneous systems are likely to increase in number rather than decrease. The need for integrating these systems continues to challenge all organizations.

Intelligent messaging provides several benefits to an organization: asynchronous communications, data transformation, message routing, and most importantly, rules-based decision processes. All of these components combined make for a flexible, reliable, and maintainable infrastructure for application integration efforts. With the abstraction of business logic away from individual programs, changes can be made much more quickly and with fewer staff. People are more focused on solving the business problem instead of the technical problems regarding the integration of these disparate systems.

Using the following sections, a cohesive strategy can be developed to enable your organization to solve these integration problems.

Challenges of Systems Integration

Today, more than ever, well-executed systems integration efforts are the difference between successful implementations of software solutions and failures destined to the "great idea, bad implementation" trash heap. There is no magic potion, no silver bullet, when it comes to linking these multi-architected, multi-OS, multi-communication protocol environments. In most cases, if there are two systems that can be integrated efficiently, it is most likely an accident rather than a planned occurrence. If the need for integration is going to continue to expand at these rates, what we need is an understanding of the elements affecting our abilities to deliver. What tools, methods, and approaches could we use to increase our likelihood of success? Let us understand the elements affecting systems integration: Business processes, heterogeneous systems, scarcity of talent, and the pace of change.

Understanding of Business Processes

As more and more companies embrace ERP core solutions, by necessity, they become more focused on the core business process rather than the event or base transaction. This processed focused view has been impressed upon our organizations since Hammer & Champy published "Reengineering the Corporation". In addition, SAP AG has made process-oriented configuration of their R/3 software product easier and easier as each new release of the software is produced.

Unfortunately, very few legacy systems are process oriented. They are transaction and/or event based. This presents a problem when trying to establish integration points with an ERP system that is being implemented based on process threads. This means that business and systems analysts are required to understand how a legacy system fits within and entire process. This work should evolve into process maps that detail what system is involved in which part of the process. This is a vital and crucial step in the systems integration process that will lead to a better understanding of the systems that run your organization. Time consuming? Yes. A waste of time? Absolutely not! This is the reference point for your organization's application portfolio. It is from this that you can determine what system stays, goes, or needs to be phased out over time. It outlines areas that can be supplemented or replaced by your ERP system. It also provides visible identification of areas where additional software (non-ERP) may add value in a process thread.

You do not need to do this in one giant step. Start one process thread at a time. Require all new application development efforts to include supporting process diagrams and flows. As systems are being upgraded, add these process tasks to the effort. Over time, this discipline can become a natural part of your organization's work habits.

Systems, Systems, and more Systems

The proliferation of software and the solutions that can be provided by that software continues at what seems to be an unending pace. Legacy systems, once thought to have limited existences, now are being given new life as a result of Year 2000 efforts. Instead of turning them off, their value to the organization continues into the next millennium.

The packaged software supply continues to grow as the barrier to entry for software companies continues to be limited only by ideas and people to execute them; capital is plentiful and there are no other real assets to buy. These range from large ERP packages to small, "point solution" packages designed to solve a unique business function. The result of this: more software packages for you to incorporate into your organization that meet specific business processes and functions.

Robust application development environments and tools such as Borland's Delphi, Microsoft's Visual Studio, and others, are allowing for the creation of new software systems by internal application development departments at a blistering pace. Instead of large development projects aimed at the whole corporation, departments are now able to create their own applications very quickly. With the increased presence of the Internet and E-Commerce, the need for more systems, quickly, is increased. The result: more systems to integrate with existing systems.

When you put all of these factors together, your get systems, systems, and more systems with no relief in sight! What is even more problematic is that these systems need to communicate with each other. As mentioned earlier, businesses are becoming more process-oriented in how they behave. Systems must be integrated to support these processes. If you cannot stop the proliferation of systems, you must find a way to link them together quickly, efficiently, and in a way that long-term support and maintenance is possible.

The Talent Shortage

Numerous studies are confirming what has been known for several years – there are not enough skilled resources to do the work that is required. The Information Technology Association of America estimates that there are currently 340,000 unfilled positions in the computer industry. Studies from the American Electronics Association show that graduates in computer science and math decreased 29% from 1985 to 1996. With an industry growth rate exceeding 15%, it becomes quite apparent that there is a major talent shortage (Figure 1.)

What does this mean to those having to integrate systems? It means you must find methods and tools that can make those resources that you have more productive. You need to re-think the traditional approaches to systems integration; the coding of point-to-point program interfaces that link a program from one system to a program in another system. This traditional approach is labor intensive, something that you do not have available. In addition, this approach lends itself to inconsistencies in development,

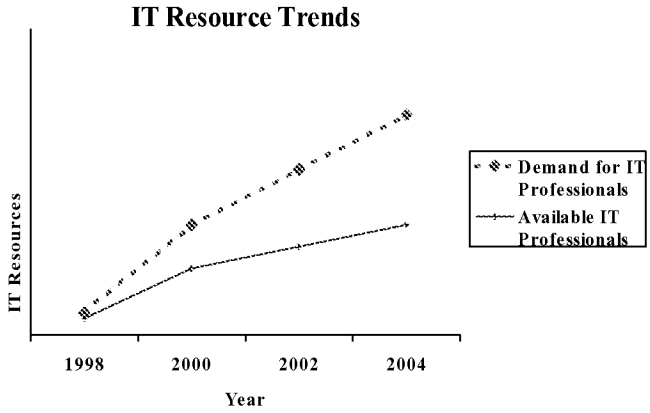


Figure 1.

implementation, and support.

Reductions in Timeframes

When was the last time a project was allowed 36 months, 24 months, or even 18 months to complete? In today's fast-paced business climate, systems projects have short timeframes of 3–6 months. If there are many systems to integrate, there is no time to code these integration points together. There is no time to learn a new programming language or architecture. The only activity you have time for is figuring out where these integration points need to be and how you can patch it together quickly. The pressure to speed up integration is not about to end. Therefore, new ways to improve productivity reduce learning curves, and focus on value-added activities needs to be embraced.

Intelligent Messaging Can Help

Intelligent messaging is the transformation and transmission of data from/to specific locations based upon specific data content across multiple hardware and software platforms. Intelligent messaging comprises asynchronous communications, rules-based decisions, and message routing. Full-powered intelligent messaging is capable of dynamic, real-time, application and maintenance of business logic abstracted from individual application systems. Let's examine these components in more detail.

Asynchronous Communications

Asynchronous communications means that when an application is sending data to another application, the sending application does not wait for the receiving application to process the data before moving on. In military terms, think of this as a "fire and forget" process similar to a cruise missile after it has been launched. The ship or aircraft, once a launch has been executed, can sail or fly wherever it wants to with a highly confident assurance that the missile will reach its target without any other assistance. The assumption is clear: if I send it, it will be processed.

Now, with asynchronous communications, it is prudent to include a queuing mechanism in order to make sure that in the event that the receiving system is not active, data is not lost. This queuing is also important for situations that require rollbacks or reruns of processing. These queues act as data buckets that hold data temporarily until the appropriate applications acknowledge that it is safe to empty the buckets. Keep in mind that the acknowledgement is primarily to the queuing mechanism; not the sending application. The sending application is busy doing something else at this time; not waiting around for some acknowledgement.

This is beneficial because an application that uses asynchronous communications does not need to wait around for a response from some external system before continuing its processing. Networks do not have to maintain open sessions across applications waiting for responses. In short, applications and networks become more efficient. Data can be processed and routed with much more expediency. With the increased need for bandwidth of the network, moving messages is much more "bandwidth friendly" than synchronous communications within a network or across larger WANs.

Rules-Based Decisions

Application logic, in its essence, is really an organization of decisions needing to be applied to a specific piece of data. These are the rules that must be followed in order for information to be produced.. Given the computer's strength in processing rules, the more the rules of an application can be organized, optimized, and de-coupled from the file-handling and data handling routines, the more the power of the computer can be utilized. In addition, these rules can also me managed and maintained more effectively;

an extremely valuable attribute given today's rapidly changing business demands. There is a simplicity that can be achieved by instructing the computer to do a specific action when the data contains a certain value.

Routing

A message, like a letter sent to a friend, has no value unless it is received. For letters, we have learned to trust FedEx to guarantee delivery to the right destination. All FedEx letters go to Memphis, their destinations are determined, and then they are put onto the plane going to that destination. That is what routing does for intelligent messaging. Messages have destinations that are determined in various ways; some destinations are pre-defined, some are based upon data content, and some are based upon lack of content. Routing takes the message, determines the correct destination, and sends it on its way. It is like a large mail-sorter; look at the address and send it on its way. One important element is the ability to take one inbound message and send different pieces to different locations. This provides a very efficient method of sending data to many places with a single input message.

Dynamic Application and Maintenance of Business Logic

There is one element that is not inherent to intelligent messaging but is such a critical component, it needs to be considered. The rules and routing are very powerful in the organization of your business logic. However, if these are static, hard-coded, difficult-to-maintain blobs of code, they do nothing in making your systems adaptable and flexible. Unless this business logic can be easy to change and maintain, your change request will sit in some development queue that will be accessed sometime in the year 2000 – right behind the 500 requests that came in before yours. Do not worry, your business unit manager will make sure that no area of his business will change for the next few years.
Remember the talent shortage? Remember the reduced timeframes? You may have a long wait if you do not have anyone around who can make these changes. What you must consider is a solution that will enable you to change these applications much faster that the traditional development path. You must have rules that are easy to develop and maintain.

SAP R/3

Much has already been said and written about SAP and its client/server ERP product, R/3. It is a powerful core enterprise package that has become the backoffice application infrastructure for thousands of companies. Since its existence in your organization is either real or imminent, your task is to integrate your existing systems to it. You may have to also integrate new add-on functionality as part of the R/3 implementation project. You also may have to integrate it with other companies that you do business with. All of these scenarios are real and their challenges can sometimes be minimal or they can be quite extensive. Fortunately, the ability to integrate these systems with R/3 has improved dramatically over the past few years; mainly as a result of SAP embracing an asynchronous messaging architecture.

Messaging Inherent within SAP

In 1994, SAP introduced Application Link Enabling (ALE). Designed to promote R/3 to R/3 communications, this architecture used messages from business scenarios to communicate asynchronously from one R/3 system to another. For example, the process of distributing changes to a customer master record from a central R/3 system to R/3 systems located in other divisions or plants was accomplished by sending a message (in the form of an SAP Intermediate Document record (IDOC)) to the target systems at the time of the customer record change. This architecture has since evolved to now be the core of the new Business Framework from SAP. This framework promotes a "loosely-coupled" integration between different R/3 modules. This allows for the propagation of R/3 systems to satisfy business requirements while maintaining integration between components. This is accomplished using the asynchronous messaging approach of ALE and IDOCs. It is important to note that R/3, while capable of these messaging capabilities, is first and foremost a business application package, not an intelligent messaging package. R/3 should not be designated as your message hub. It is your core application software that can efficiently and effectively operate in an asynchronous message architecture.

Value Provided to SAP R/3 by Intelligent Messaging

Whether intentional or unintentional, by implementing SAP R/3, you have started the introduction of a message-oriented architecture into your organization. This added benefit provided by R/3 will move your organization away from inflexible, inefficient, hard-to-manage systems to those that are more adaptive and flexible to your company's demands.

Flexible, Adaptive Integration Architecture

As mentioned earlier, systems within an organization change almost daily. New systems are created, old ones are changed, and some are taken out of service. Business needs are constantly challenging the organization to have information readily at hand. Given SAP R/3's flexible approach to message exchange, if you can move data from and to R/3 via this method, you can start making your new and existing systems just as flexible and adaptive. Intelligent messaging can help turn these static, inflexible systems into a continuation of a business process that includes R/3. Changes can be made quicker. Systems can be added or removed quicker. Your R/3 system will now be able to exchange information within your organization as well as to systems external to your organization. This improves and enriches the information within the R/3 system and your organization. You increase the return on your investment in R/3.

Abstraction of Application Logic Away from Programs

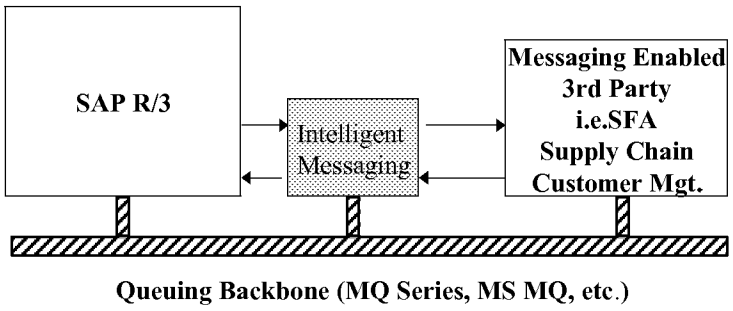
One of the benefits of R/3's ALE approach is that the need to perform programming in R/3 to integrate systems has been greatly reduced. Since there are many different business scenarios that have been developed by SAP into ALE/IDOC combinations, many interfaces require little to no programming at all in R/3. Business rules can be configured for the appropriate logic and messages can be routed based upon those rules. If the target or source systems are enabled by intelligent messaging, the need for any programming to be performed has been greatly reduced. If a change is required to support a new business rule, R/3 and the related systems can be changed very quickly. Programs do not have to be changed, compiled, or promoted. The skill set required to perform these changes may already exist within your organization.

Focused Efforts of Solving Business Problems, Not Technology Problems

Too often in our business, the integration effort ends up focusing on the technical challenges instead on solving the business problem. This is not a fault of the people working on these issues. It is a result of not having a common approach to integrating these systems, not having a message-oriented architecture that makes data easier to move and distribute, and not having business rules abstracted from the programs to allow for quicker, easier changes.
There is only so much time in a day. Do you want your people trying to figure out how to get an ASCII file into EBCDIC or do you want them determining what rule and route to apply if the data is coming from a specific, high-volume customer? Using R/3 and intelligent-messaging, it becomes easier to focus on the business problem, not the technology problem.

Enhanced Functionality from Legacy and Third Party Applications

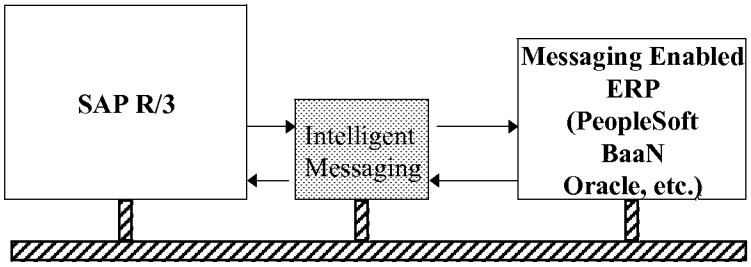
The following diagrams depict various applications of intelligent messaging with SAP R/3. As you can see, the flexibility that is gained from intelligent messaging is only limited to the ingenuity of your people. The first diagram shows a third-party application, such as sales force automation (SFA) connected to R/3.



Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 to non-R/3 communications can be integrated

This speeds up the integration process and reduces the need for the 3rd party software to write integration points for every ERP or legacy system. Instead, they write to a common messaging API.

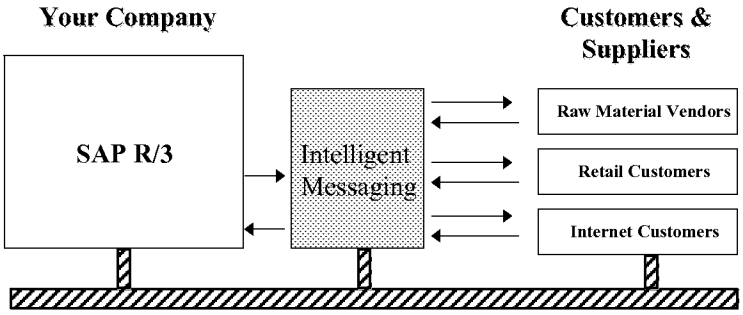
In the next figure, intelligent messaging is used to connect SAP R/3 with another ERP package such as PeopleSoft or BaaN. Because of acquisitions and industry consolidations, many organizations are finding themselves with more than one ERP system. Intelligent messaging can be used to leverage the investments made in both packages.



Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 to other ERP packages within an organization can be integrated.

This speeds up the integration process and reduces the need to wait for a standards group to define each ERP process. The ERP vendors "message enable" their packages (i.e. SAP's ALE) in order to facilitate this communication.

As your organization increases its electronic communication with external customers and suppliers, using intelligent messaging will permit you to apply specific rules and routing information to your data depending on the data content. Certain customers may have priority over others. Certain vendors may receive certain messages based on the nature of the parts being supplied.

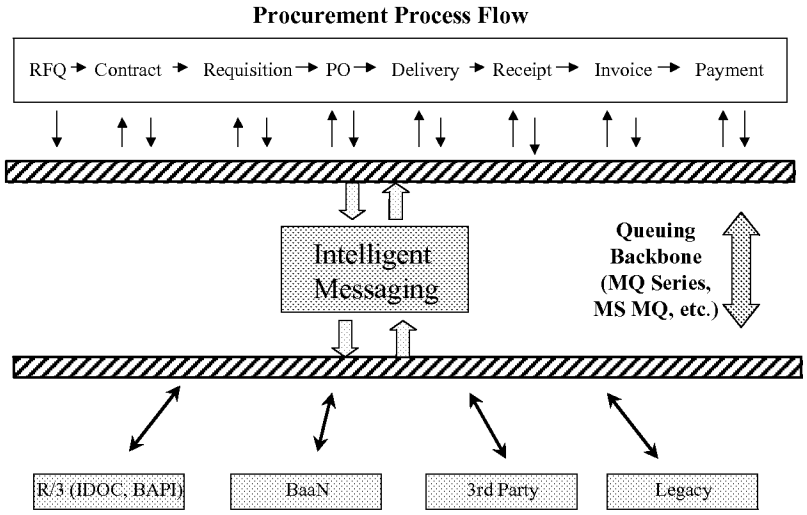


Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 information to non-SAP systems of suppliers and customers can be integrated. This cross-organizational interchange of information improves the total order to fulfillment to cash process.

It is important to remember that your partners have many systems that are disparate from your own . Using intelligent messaging, they are able to keep their systems while still being able to take advantage of cross-organizational information flows.

This last diagram presents a more process-oriented view of intelligent messaging and how all of these pieces start to fit together. As you can see, a process-oriented approach coupled with intelligent messaging leads to a workflow-driven organization that has messages traveling from business event to event via the intelligent messaging engine. This messaging engine exchanges information with various systems (legacy, ERP, 3rd party) as the process is executed.

Process Oriented Application Integration



Conclusion

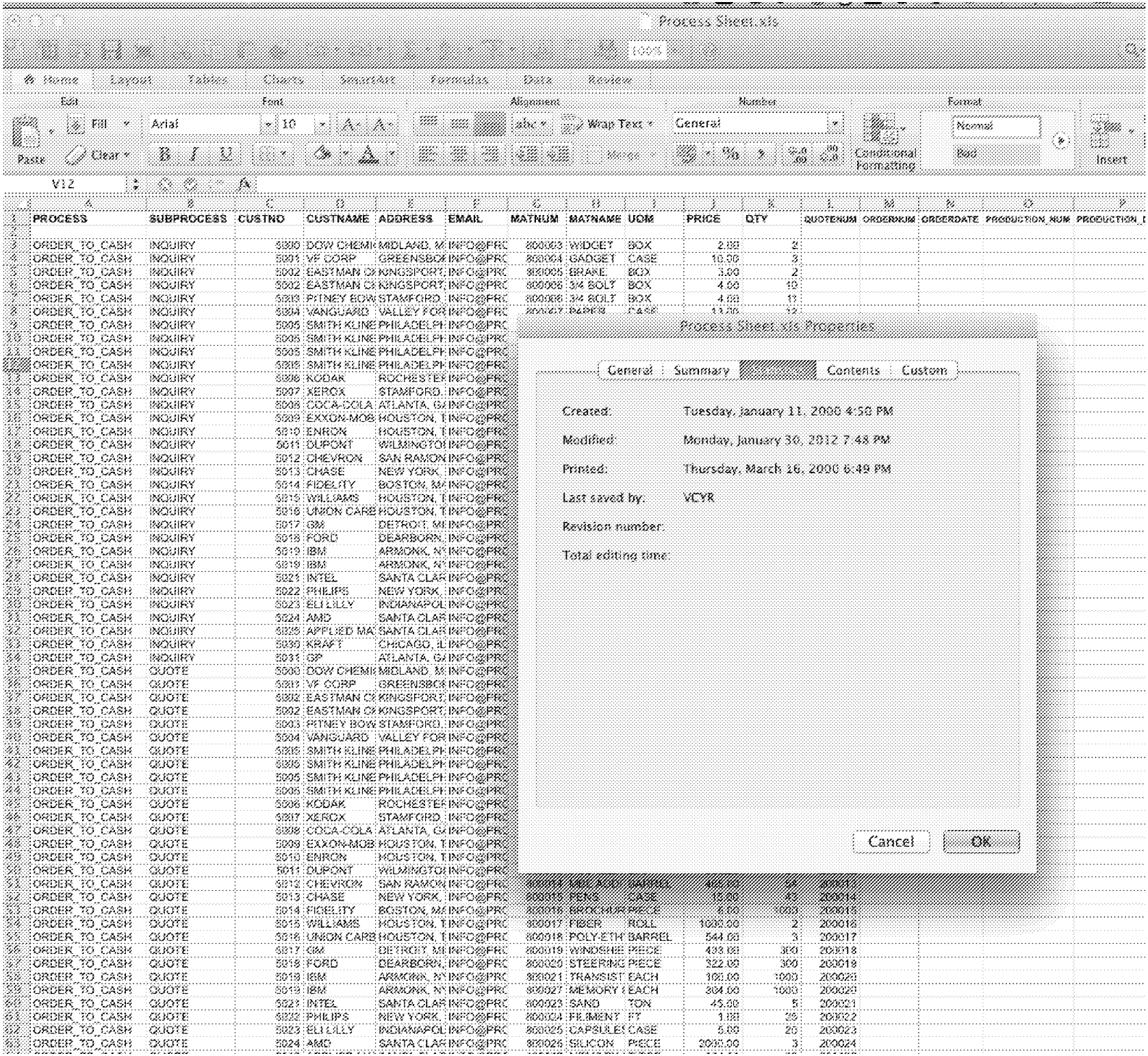
There are many challenges when implementing systems. Business process design, software configuration, training, resistance to change, etc. One challenge that is common to all organizations is the need to integrate all of these systems together. Alone, each system performs a specific piece of a complete business process. Using SAP R/3, more of these processes can be integrated within one application package. However, the legacy systems that remain, the additional third-party software, and internal custom development, all must be tied together with R/3. Intelligent messaging, with its asynchronous architecture, flexibility, and abstraction of business logic, provides a solution to bringing these disparate pieces together. Keep in mind, there are no silver bullets. This still requires strategic thinking, careful planning, and commitment to execution. The short-term payback is an accelerated method in completing your integration efforts for your R/3 implementation. The long-term payback is an integration architecture that lends itself to faster response to changing business needs.

About Promenix

Promenix is a systems integration service provider focusing on Enterprise Application Integration around SAP R/3. Located outside of Philadelphia, PA, Promenix helps its customers integrate their legacy and 3rd-party packages with SAP R/3 using such integration software as MQ Series from IBM and MQ Series Integrator from New Era of Networks, Inc.

They can be reached at (610) 361-1560, www.promenix.com.

EXHIBIT B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Layout
Tables
Charts
SmartArt
Formulas
Data
Review
Edit
Font
Alignment
Number
Format
Fill
Arial
10
Wrap Text
General
Normal
Bad
Paste
Clear
Conditional Formatting
Insert
V12
PROCESS
SUBPROCESS
CUSTNO
CUSTNAME
ADDRESS
EMAIL
MATNUM
MATNAME
UOM
PRICE
QTY
QUOTENUM
ORDERNUM
ORDERDATE
PRODUCTION_NUM
ORDER_TO_CASH
INQUIRY
QUOTE
Process Sheet.xls Properties
General
Summary
Contents
Custom
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Modified:
Monday, January 30, 2012 7:48 PM
Printed:
Thursday, March 16, 2000 6:49 PM
Last saved by:
VCYR
Revision number:
Total editing time:
Cancel
OK

HP_1003_0448

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material	Customer Inquiry	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Customer		Sales Group					
				Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material	Customer Quotation	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Inquiry		Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material	Customer Outline Agreement	Sales org.					
		Batch		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
Order-to-cash	Create Sales Order	Material	Sales Order	Sales org.					
		Batch	Production Order	Division					
		Business Partner	Manufacturing Order	Sales Office					
		Time	Purchase Req.	Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
		Sales Promotion							
Order-to-cash	Ship Product	Material	Outbound Delivery	Shipping Point					
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Credit Account							
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
Order-to-cash	Invoice Customer	Material	Customer Billing Documen						
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Contract							
		Customer Complaint Order							
		Credit Memo Request							
		Debit Memo Request							
		Returns							
Order-to-cash	Receive Payment	Invoice Number							
		Material							
		Customer							

Process Elements | Raw Data | Sheet3

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material BOM Business Partner Customer	Customer Inquiry	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material BOM Business Partner Time Customer Inquiry	Customer Quotation	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation	Customer Outline Agreement	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Sales Order	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation Customer Contract Sales Promotion	Sales Order Production Order Manufacting Order Purchase Req.	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Ship Product	Material Batch Business Partner Time Customer Sales Order Customer Credit Account Customer Inquiry Customer Quotation Customer Contract	Outbound Delivery	Shipping Point					
Order-to-cash	Invoice Customer	Material Batch Business Partner Time Customer Sales Order Customer Contract Customer Complaint Order Credit Memo Request Debit Memo Request Returns	Customer Billing Document						
Order-to-cash	Receive Payment	Invoice Number Material Customer Amount							

PROCESS	SUBPROCESS	CUSTNO	CUSTNAME	ADDRESS	EMAIL	MATNUM	MATNAME	UOM	PRICE	QTY	QUOTENUM	ORDERNUM	ORDERDATE	PRODUCTION_NUM	PRODUCTION_DATE	PRODUCTION_LOC	PRODUCTION_STATUS	AMT	TERMS	SHIP_DATE	INVOICE_DATE	EVENT_DATE	EVENT_TIME
ORDER_TO_CASH	INQUIRY	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5001	VF CORP	GREENSBOF	INFO@PRC	800004	GADGET	CASE	10.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10									NET/30				
ORDER_TO_CASH	INQUIRY	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11									2/10				
ORDER_TO_CASH	INQUIRY	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12									2/10				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21									NET/30				
ORDER_TO_CASH	INQUIRY	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11									NET/30				
ORDER_TO_CASH	INQUIRY	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23									NET/30				
ORDER_TO_CASH	INQUIRY	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11									NET/30				
ORDER_TO_CASH	INQUIRY	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24									NET/30				
ORDER_TO_CASH	INQUIRY	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54									NET/30				
ORDER_TO_CASH	INQUIRY	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43									2/10				
ORDER_TO_CASH	INQUIRY	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000									2/10				
ORDER_TO_CASH	INQUIRY	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300									NET/30				
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ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25									NET/30				
ORDER_TO_CASH	INQUIRY	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30									NET/30				
ORDER_TO_CASH	INQUIRY	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5									NET/30				
ORDER_TO_CASH	QUOTE	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
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ORDER_TO_CASH	QUOTE	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	QUOTE	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	QUOTE	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
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ORDER_TO_CASH	QUOTE	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	QUOTE	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	QUOTE	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
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ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CH	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	AGREEMENT	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21	200007								NET/30				
ORDER_TO_CASH	AGREEMENT	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
ORDER_TO_CASH	AGREEMENT	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2	200009								NET/30				
ORDER_TO_CASH	AGREEMENT	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	AGREEMENT	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
ORDER_TO_CASH	AGREEMENT	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24	200012								NET/30				
ORDER_TO_CASH	AGREEMENT	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54	200013								NET/30				
ORDER_TO_CASH	AGREEMENT	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43	200014								2/10				
ORDER_TO_CASH	AGREEMENT	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000	200015								2/10				
ORDER_TO_CASH	AGREEMENT	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2	200016								NET/30				
ORDER_TO_CASH	AGREEMENT	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3	200017								NET/30				
ORDER_TO_CASH	AGREEMENT	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300	200018								NET/30				
ORDER_TO_CASH	AGREEMENT	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300	200019								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5	200021								NET/30				
ORDER_TO_CASH	AGREEMENT	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25	200022								NET/30				
ORDER_TO_CASH	AGREEMENT	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	AGREEMENT	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	AGREEMENT	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
ORDER_TO_CASH	AGREEMENT	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30	200026								NET/30				

ORDER_TO_CASH	AGREEMENT	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027							NET/30
ORDER_TO_CASH	ORDER	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	ORDER	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	ORDER	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	ORDER	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	MANUFACTURE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00	LOCAL		NET/30

ORDER_TO_CASH	SHIP	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00		
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00		
ORDER_TO_CASH	SHIP	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00		
ORDER_TO_CASH	SHIP	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5008 COCA-COLA	ATLANTA, G/	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00		
ORDER_TO_CASH	SHIP	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00		
ORDER_TO_CASH	SHIP	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, N\	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, N\	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5031 GP	ATLANTA, G/	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	INVOICE	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00	
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00	
ORDER_TO_CASH	INVOICE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5008 COCA-COLA	ATLANTA, G/	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, N\	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, N\	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5031 GP	ATLANTA, G/	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	

EXHIBIT C

Process Metrics Project
March 9, 2000

Design Specification 1.0

Last Revised By:	Date	Additions
Vincent Cyr	March 9, 2000	Initial Draft

Introduction

The activities that take place within a company to conduct its business are organized into processes. Each process is comprised of sub-processes that break down the process into more discreet elements – eventually becoming transactions. For example, the activity of a business that involves making products and selling them for money is known as "Order-to-Cash". This process is broken down into sub-processes that deal with the individual steps - first obtaining a prospective customer – to the manufacturing of product(s), shipping, and invoicing of that customer.

Each of these sub-processes is triggered by an event that passes information to the next sub-process so that action can be carried out. Often, an application may be responsible for one or more of these sub-processes. In the case of SAP, its integrated applications allow for many of the sub-processes activities to be carried out within the entire SAP R/3 system.

However, in many cases, some of the sub-processes are carried out by different applications or in the cases of e-commerce, may be carried out by entirely different organizations or companies.

How then, does someone inside the organization or outside the organization know at what point their particular order resides? Calling someone may cause a cascading number of phone calls, e-mails, faxes, system look-ups, etc. to determine status of the order. This is highly inefficient and results in poor customer response and service. In addition, being able to measure performance across the sub-processes would have vale to those in the organization trying to determine inefficiencies in their operations. Imagine the ability to know how long it took to go from order to manufacturing to shipping during each step of the process. Imagine being able to know exactly where in the process an order is even if your company is not performing one or more sub-processes. This project is intended to demonstrate how we can use messaging to make this possible.

Using MQSeries and MQSeries Integrator, we are going to simulate a process and its related sub-processes. As each event takes place, we are going to send messages with information pertaining to that event through MQSI to a database. This database will hold the messages (in XML format), which we will use to report against. The diagram 1.0 shows the overall layout of this concept.

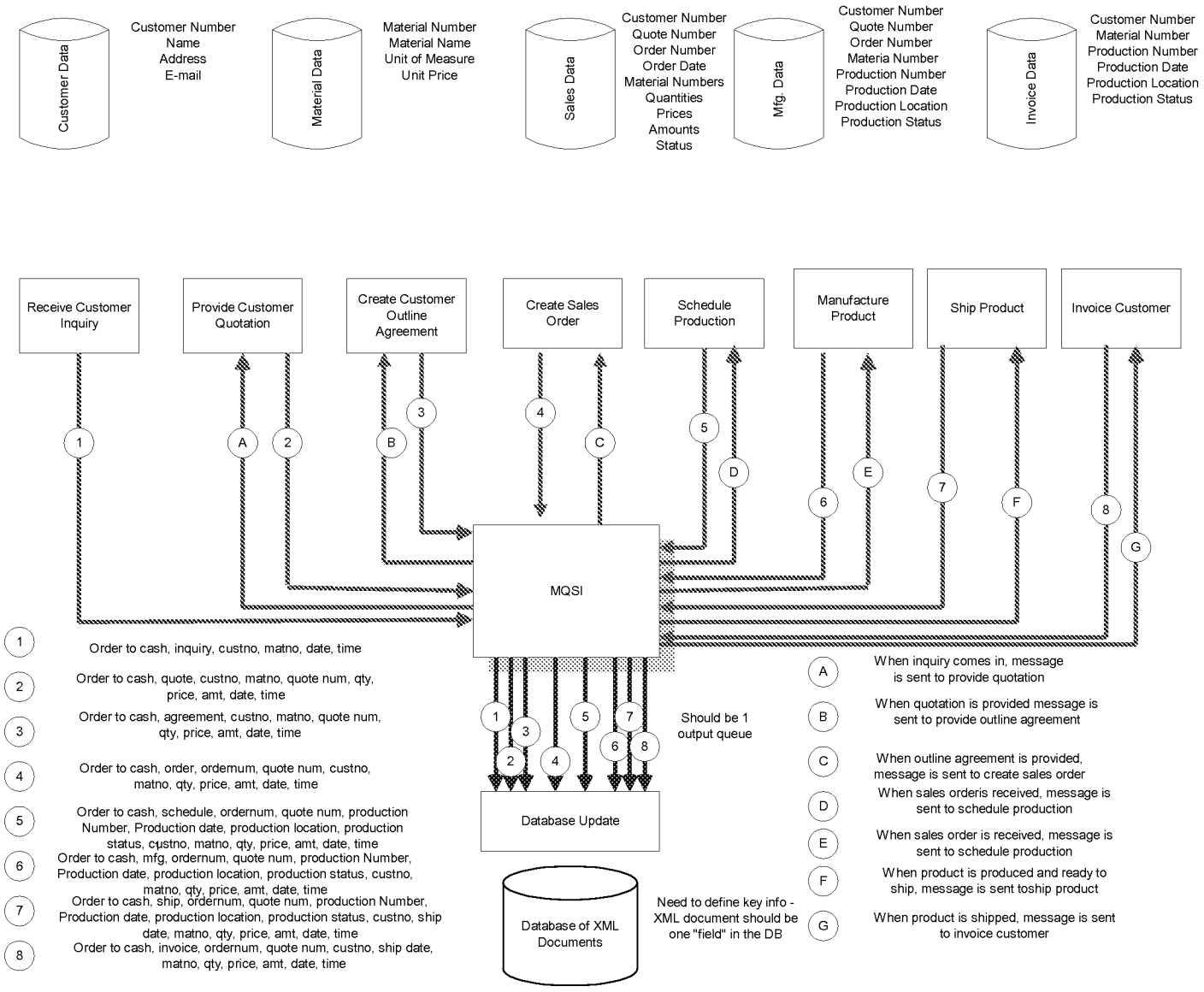

Customer Data
Customer Number
Name
Address
E-mail
Material Data
Material Number
Material Name
Unit of Measure
Unit Price
Sales Data
Customer Number
Quote Number
Order Number
Order Date
Material Numbers
Quantities
Prices
Amounts
Status
Mfg. Data
Customer Number
Quote Number
Order Number
Materia Number
Production Number
Production Date
Production Location
Production Status
Invoice Data
Customer Number
Material Number
Production Number
Production Date
Production Location
Production Status
Receive Customer Inquiry
Provide Customer Quotation
Create Customer Outline Agreement
Create Sales Order
Schedule Production
Manufacture Product
Ship Product
Invoice Customer
MQSI
Database Update
Database of XML Documents
Should be 1 output queue
Need to define key info - XML document should be one "field" in the DB
1 Order to cash, inquiry, custno, matno, date, time
2 Order to cash, quote, custno, matno, quote num, qty, price, amt, date, time
3 Order to cash, agreement, custno, matno, quote num, qty, price, amt, date, time
4 Order to cash, order, ordernum, quote num, custno, matno, qty, price, amt, date, time
5 Order to cash, schedule, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
6 Order to cash, mfg, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
7 Order to cash, ship, ordernum, quote num, production Number, Production date, production location, production status, custno, ship date, matno, qty, price, amt, date, time
8 Order to cash, invoice, ordernum, quote num, custno, ship date, matno, qty, price, amt, date, time
A When inquiry comes in, message is sent to provide quotation
B When quotation is provided message is sent to provide outline agreement
C When outline agreement is provided, message is sent to create sales order
D When sales orderis received, message is sent to schedule production
E When sales order is received, message is sent to schedule production
F When product is produced and ready to ship, message is sent toship product
G When product is shipped, message is sent to invoice customer

Diagram 1.0

Development Approach

We should approach development by stubbing out pieces of functionality and validating the design in a step-by-step approach. We will then build upon these pieces as we increase capability. We will build the following components:

Process Engine – This will be the application that simulates the applications that perform the sub-processes of the main process. The main process will be Order-to-Cash. The sub-processes are: Inquiry, Quotation, Outline Agreement, Sales Order, Schedule Production, Manufacture, Ship, and Invoice. The Process Engine (PE) should be one program (C++ or Java Servelet) that has each of the sub-processes as a separate function within the application. All inputs and outputs should use MQSeries queues. MQSI application group/message types to distinguish messages from sub-processes. The PE will need to access various databases in order to obtain information about customers, materials, sales, manufacturing, shipping, and invoicing. Load programs may need to be developed to create sample data for these databases. We must also have a method for varying the time intervals between processes (throttling) to simulate real-life time lags between sub-process steps. For example, it may take 1 day between ordering a product and manufacturing a product, we need to show that variation so when we report the results, they appear realistic. The PE should be developed so that we can test the message flow first, then we can add database access and fill out the message structures.

MQSeries Integrator – MQSI will be the formatting and routing engine of this design. There will be several different formats coming into MQSI from the various sub-processes. The app group/message type in the MQRFH will determine which format to use. There will be one outbound format that will be used to send all event information to a database that will store all event messages. This format should be XML and one document should consist of all of the possible data elements across the process. These messages will all be placed on one output queue. The other outbound formats will be messages sent to the next sub-process in the process thread; on another queue, separate from the XML queue.

Database update – This process will take XML event messages from MQSI and insert them into a database of messages. The key needs to be defined which will allow for inquiry and reporting. The entire XML message will be placed in one field of the database. There should be a cleanup routine to purge older messages (all related to each other) based on a date or key parameter. Extraction of information from the database will be both inquiries against a particular order/customer/material/sub-process or a more generic statistical presentation of data across the entire process. Many of these inquiries are yet to be defined. Presentation of the information will be web-based using XSL style sheets.

At this point in the design, we should stub these pieces out and put as much together to test out these concepts. We will test these components and determine how to move forward from this point.

XML Document

One XML document is to be used for all of the messages coming out of each sub-process of the entire process thread. The data elements include:

Process
- Sub-process name (1 or more)
- Sub-process info (1 or more)
  - Date
  - Time
  - Customer (1)
    - Customer Number
    - Customer Name
    - Customer Address
    - Customer E-mail
  - Material (1 or more)
    - Material Number
    - Material Name
    - Unit of Measure
    - Price
    - Quantity
  - Sales Data (1)
    - Quotation Number
    - Order Number
    - Order Date
    - Manufacturing Data (1)
      - Production Number
      - Production Date
      - Production Location
      - Production Status
    - Invoice Data (1)
      - Amount
      - Terms
      - Date

EXHIBIT D

Author	Date	Description
Ken Fritz	08/07/2000	Initial Draft

About Process Metrics Simulator

The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory.

The program is initialized by a file which must be located in the c:\process\ directory on the users machine, called ProcessSim.ini. The file should be somewhat self explanatory; however, see the detailed documentation for more information.

This software was written in Visual Basic 6.0 and utilizes IBM's MQSeries ActiveX objects.

Process Metrics Simulator, 1.0a Documentation

Author	Date	Description
Ken Fritz	08/07/2000	Detailed Software Documentation, Initial Draft

I. Basic Design Goals

The simulator is intended to be a flexible utility to model business processes utilizing a variety of messaging constructs and formats. In its final version it will:

- Be written in a platform independent language
- Utilize multiple messaging transports (ie. Tibco, MQSeries)
- Utilize flexible message formats
- Allow for dynamic construction of business processes (Snap-in model)
- Allow for user interaction in setting latency and message drops/stoppage.

Currently, the simulator is in a very basic alpha development version which does the following:

- Supports a basic 8 process production model.
- Utilizes MQSeries messaging
- Allows for user configurable latency settings
- Supports only one basic XML message format.
- Written in Visual Basic 6.0

This document covers only the alpha version currently available.

II. User Interface

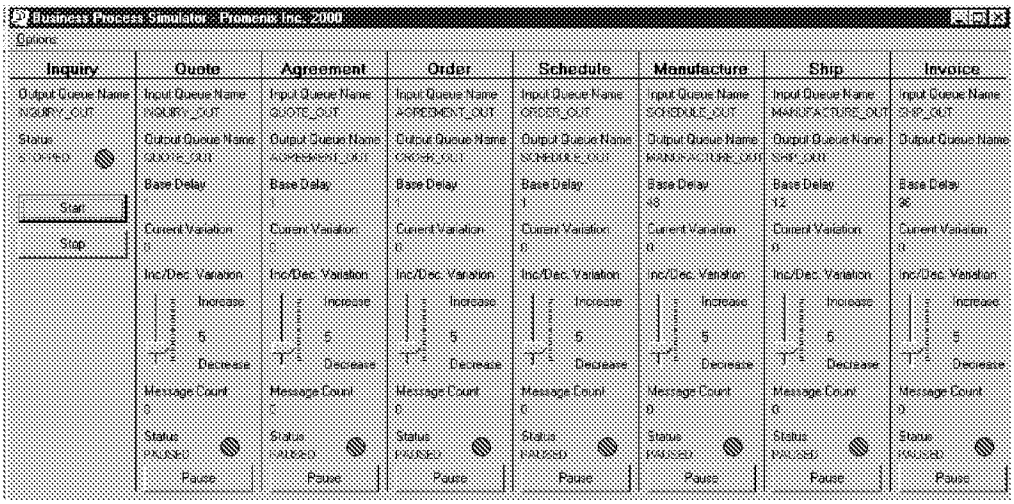


Figure 1 – Process Simulator GUI

The GUI for the process simulator is shown in Figure 1. The GUI allows the user to control all runtime parameters of the package which are limited to the following:

- Starting/Stopping by process
- Latency per process

Also, the GUI will indicate settings for pre-runtime configurable options:

- Input/Output Queue Names
- Base Variation

Finally, the GUI will also indicate dynamic parameters including final latency (delay), message count, and status of each process.

III. Sample Configuration File

Note: This file must be located in "C:\Process\" directory and named processsim.ini

[Common]	
QMGR = CONF01	The queue manager to be used
CHARACTERSET = 437	The MQSeries character set
DBQNAME = DB_IN	Database queue name
MQSI_Q_OUT = TESTQ	MQSI output queue
[Inquiry]	Settings for Inquiry process
OUTPUTQNAME = INQUIRY_OUT	Output queue
INITIAL_STATUS = 0	Initial status (0 = Stopped, 1 = Running)
XMLFILE = "c:\inquiry.txt"	XML document file
[Quote]	Settings for quote process
INPUTQNAME = INQUIRY_OUT	Input queue name
OUTPUTQNAME = QUOTE_OUT	Output queue name
BASEVARIATION = 1	Base variation (Delay) setting
INITVARIATION = 5	Initial random seed value (variation can be MAX +5 if this is 5)
XMLFILE = "c:\test.xml"	XML Document file
[Agreement]	Agreement process
INPUTQNAME = QUOTE_OUT	Settings are the same for the rest of these processes as for quote process.
OUTPUTQNAME = AGREEMENT_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[OrderProcess]	
INPUTQNAME = AGREEMENT_OUT	
OUTPUTQNAME = ORDER_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Schedule]	
INPUTQNAME = ORDER_OUT	
OUTPUTQNAME = SCHEDULE_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Manufacture]	
INPUTQNAME = SCHEDULE_OUT	
OUTPUTQNAME = MANUFACTURE_OUT	
BASEVARIATION = 48	

INITVARIATION = 5 XMLFILE = "c:\test.xml" [Ship] INPUTQNAME = MANUFACTURE_OUT OUTPUTQNAME = SHIP_OUT BASEVARIATION = 12 INITVARIATION = 5 XMLFILE = "c:\test.xml" [Invoice] INPUTQNAME = SHIP_OUT OUTPUTQNAME = INVOICE_OUT BASEVARIATION = 96 INITVARIATION = 5 XMLFILE = "c:\test.xml"	

IV. Sample XML Document Format

```
<PROCESS>
    ORDER_TO_CASH
  <SUBPROCESS>
      SHIP
    <CUSTOMER>
        <CUSTNO>5000</CUSTNO>
        <CUSTNAME>DOW CHEMICAL</CUSTNAME>
        <CITY>MIDLAND</CITY>
        <STATE>MI</STATE>
        <EMAIL>INFO@PROMENIX.COM</EMAIL>
    </CUSTOMER>
    <MATERIAL>
        <MATNUM>800003</MATNUM>
        <MATNAME>WIDGET</MATNAME>
        <UOM>BOX</UOM>
        <PRICE>2</PRICE>
        <QTY>2</QTY>
    </MATERIAL>
    <SALES_DATA>
        <QUOTENUM>200001</QUOTENUM>
        <ORDERNUM>800000</ORDERNUM>
        <ORDERDATE>3/27/00</ORDERDATE>
    </SALES_DATA>
    <MANUFACT_DATA>
        <PRODUCTION_NUM>410000</PRODUCTION_NUM>
        <PRODUCTION_DATE>3/29/00</PRODUCTION_DATE>
        <PRODUCTION_LOC>LOCAL</PRODUCTION_LOC>
        <PRODUCTION_STATUS />
    </MANUFACT_DATA>
    <INVOICE_DATA>
        <AMT />
        <TERMS>NET/30</TERMS>
        <SHIP_DATE>3/31/00</SHIP_DATE>
        <INVOICE_DATE />
    </INVOICE_DATA>
  </SUBPROCESS>
  <EVENT_DATE />
  <EVENT_TIME />
</PROCESS>
```

V. Basic theory of operation

Initialization process:

1. Call ReadINI
    a. Open the ini file (must be c:\process\processsim.ini)
    b. Read all global variables from the INI
2. Call InitGUI
    a. Initialize labels and display settings
    b. Set status flags
    c. Set initial timer intervals
3. Call InitXMLFiles
    a. Load XML files into memory from disk
4. Call InitDOMS
    a. Create DOM Objects for each process
    b. Load XML from InitXMLFiles into DOMs
    c. Parse XML
5. Call StartTimers
    a. Set initial timer intervals to 100 ms
    b. By doing so, starts message processing

Initial process (trigger process)

1. Load initial dummy values into the pre-existing XML DOM
2. Generate a random TID
    a. Done with following formula: Year & Month & Day & Timer * Rnd (Where timer is seconds past midnight)
3. Dump XML to variable
4. Write contents of variable to the output queue and DB/MQSI queue

Messages are processed in the following sequence by a <u>generic process:</u>

1. Listener listens on input queue for the process
2. Message listener tries to retrieve a message with no wait interval.
    a. If message not available, timer interval set to 5000 (5 seconds) to allow processor to do other things while waiting for another message to arrive.
    b. If the message is there, processing continues
3. When message arrives, retrieve correlation ID
4. Set GUI parameters
    a. Timer interval to 100 (100 milliseconds)
    b. Change status to “Running” if it was “Paused”
    c. Change indicator from red to green
5. Create XMLDOM object
6. Load retrieved message into DOM and parse
7. Load values from retrieved message into variables (Currently static – should be dynamic in future)
8. Create random delay value
9. Using the XMLDOM created in the initialization for the base document, load values from the retrieved message into the new message
10. Change the time and date on the message by adding the delay value
11. Dump the XML from the DOM object into a variable
12. Write the contents of the variable to an MQ message having the same correlation ID as the previous to both the output queue and the MQSI/DB Output queue.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

DECLARATION UNDER 37 C.F.R. §1.131

I, Kenneth Fritz, make this declaration in support of YYZ's Response to the first Office Action, filed herewith, and in the above identified reexamination, and do hereby declare the following:

1. I am a named inventor of the above-identified patent (the" '674 patent" or the "patent").

2. I was employed by Promenix, Inc. ("Promenix") the prior owner of the above referenced patent, in 2000.

3. I had been at Promenix from September, 1998 to fall 2003 and was primarily responsible for programming, architecture and other technical issues.

4. Promenix was a small company with a maximum of thirty seven employees at any one time, located in a small multiroom office complex in Chadds Ford PA.

5. Promenix was in the business of implementing enterprise application software. These implementations, almost invariably in large enterprises, take months and are often extremely complicated as those enterprises have existing legacy systems, multiple locations, and multiple stakeholders, and may be integrating

other types of new technology as well at the same time.

6. I am making this declaration in the reexamination of the above referenced patent. In what follows, I do not recall greater detail aside from what I have set forth herein, as it was over twelve years ago.

7. Nor do I have documents evidencing such discussions, as Promenix did not generate many documents because of its size (we had no such thing as inventor notebooks) and as far as I know Promenix kept very few documents of those it did generate when Promenix went out of business in 2006. Generally if we needed to communicate, it was our custom and practice to do so in personal meetings or over the telephone.

8. I do recall discussing Exhibit A, a document created by Vincent Cyr, ("Vince") President of Promenix and my co-inventor, in our offices in Chadds Ford, PA on or about the time he created it, January 11, 2000.

9. Vince had generated Exhibit A in the course of attempting to explore construction of a prototype and used our SAP R/3 installation in our offices, at least in part to capture data through a monitoring message ("original message data") in a database or central message repository.

10. On or about March 9, 2000, Vince, I and Matthew Franklin ("Matt") of Promenix specifically discussed the document attached here as Exhibit B, which also had been prepared by Vince.

11. As I mentioned above, Promenix was a small company, with our resources devoted to enterprise installs, yet Vince directed me to develop a prototype of the technology shown by Exhibit B as it was sufficiently promising to engage

upon a development campaign.

12. I began work on the prototype immediately, and for the next six months, I worked on it almost daily, using the server at Promenix, including researching, writing code for messaging software and screen displays, running tests of the code and other usual and customary tasks to get a software prototype running. My work on the prototype was interrupted only by my need to work on Promenix's revenue generating business.

13. I also had regular, almost daily conversations regarding elements of the prototype, with Vince and Matt.

14. On or about August 9, 2000, I presented Vince and Matt with the document attached here as Exhibit C which was, as it states, documentation of the first working prototype of the inventions of the independent claims of the patent. I also showed Vince and Matt the prototype, as it worked and was existing on our server, and I specifically recall observing how monitoring messages could be used from a messaging system (e.g., IBM MQSeries) and provide at least part of said original message data to a record in a central message repository in order to identify the status of a business process and its various elements, in accordance with claim 1 and the other independent claims of the patent.

15. That is, I specifically recall presenting to Vince and Matt,

1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

retrieving information from the central message repository.

which is claim 1 of the patent, and I also recall presenting them with the other elements of the other independent claims.

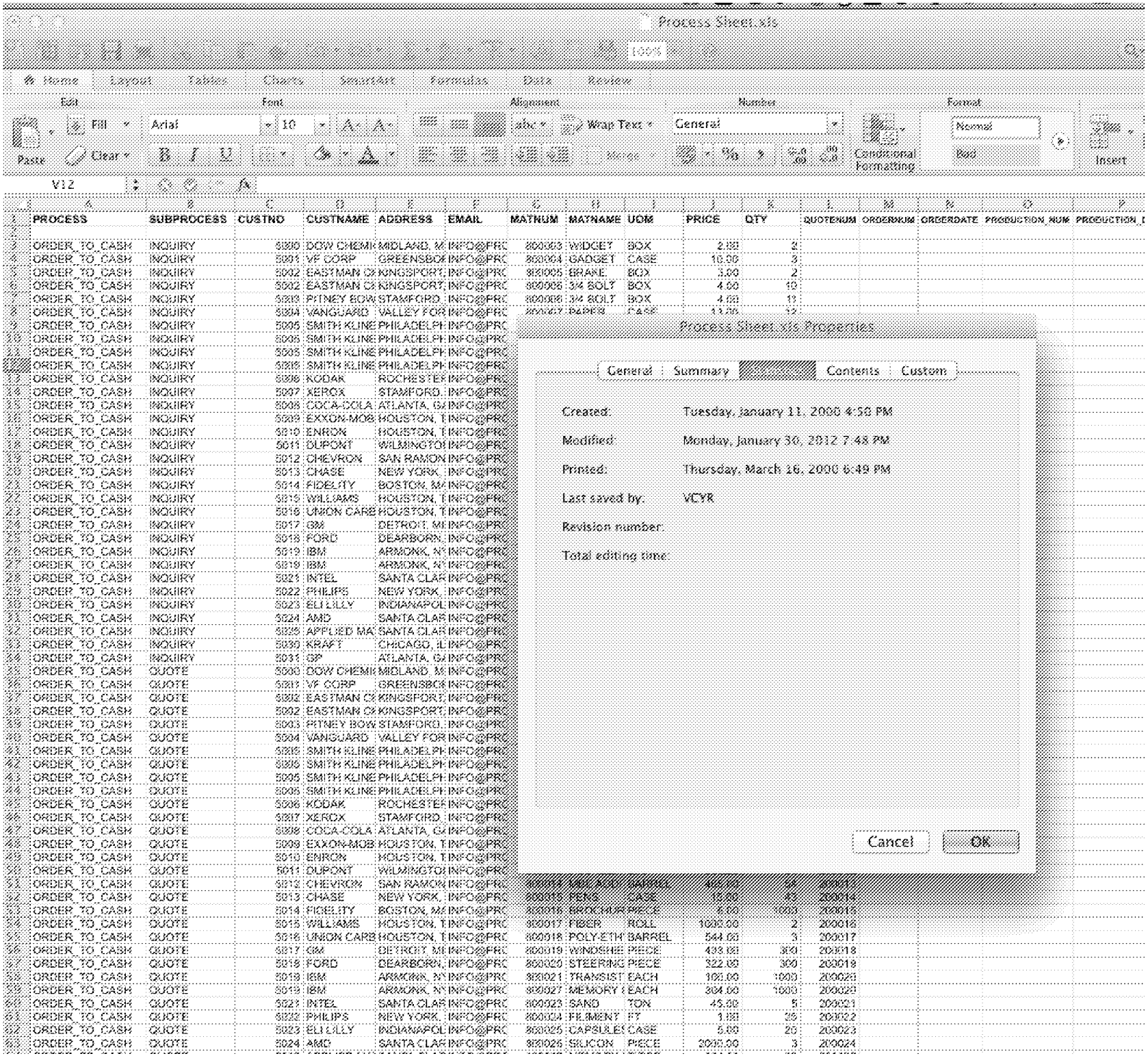
16. Therefore, from on or about March 9, 2000 to on or about August 9, 2000, I worked almost daily, interrupted only by my work on Promenix's revenue generating business, on the inventions defined and set forth in at least independent claims 1, 46, 51, 70, 90, 135, 140 and 154, the "independent claims") of the above referenced patent.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: August 12, 2012

KENNETH FRITZ

EXHIBIT A


Process Sheet.xls
Home
Layout
Tables
Charts
SmartArt
Formulas
Data
Review
Edit
Font
Alignment
Number
Format
Fill
Arial
10
Wrap Text
General
Normal
Bad
Paste
Clear
Conditional Formatting
Insert
V12
PROCESS
SUBPROCESS
CUSTNO
CUSTNAME
ADDRESS
EMAIL
MATNUM
MATNAME
UOM
PRICE
QTY
QUOTENUM
ORDERNUM
ORDERDATE
PRODUCTION_NUM
ORDER_TO_CASH
INQUIRY
QUOTE
Process Sheet.xls Properties
General
Summary
Contents
Custom
Created: Tuesday, January 11, 2000 4:58 PM
Modified: Monday, January 30, 2012 7:48 PM
Printed: Thursday, March 16, 2000 6:49 PM
Last saved by: VCYR
Revision number:
Total editing time:
Cancel
OK

HP_1003_0471

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material	Customer Inquiry	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Customer		Sales Group					
				Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material	Customer Quotation	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Inquiry		Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material	Customer Outline Agreement	Sales org.					
		Batch		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
Order-to-cash	Create Sales Order	Material	Sales Order	Sales org.					
		Batch	Production Order	Division					
		Business Partner	Manufacturing Order	Sales Office					
		Time	Purchase Req.	Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
		Sales Promotion							
Order-to-cash	Ship Product	Material	Outbound Delivery	Shipping Point					
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Credit Account							
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
Order-to-cash	Invoice Customer	Material	Customer Billing Documen						
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Contract							
		Customer Complaint Order							
		Credit Memo Request							
		Debit Memo Request							
		Returns							
Order-to-cash	Receive Payment	Invoice Number							
		Material							
		Customer							

Process Elements | Raw Data | Sheet3

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material BOM Business Partner Customer	Customer Inquiry	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material BOM Business Partner Time Customer Inquiry	Customer Quotation	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation	Customer Outline Agreement	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Sales Order	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation Customer Contract Sales Promotion	Sales Order Production Order Manufacting Order Purchase Req.	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Ship Product	Material Batch Business Partner Time Customer Sales Order Customer Credit Account Customer Inquiry Customer Quotation Customer Contract	Outbound Delivery	Shipping Point					
Order-to-cash	Invoice Customer	Material Batch Business Partner Time Customer Sales Order Customer Contract Customer Complaint Order Credit Memo Request Debit Memo Request Returns	Customer Billing Document						
Order-to-cash	Receive Payment	Invoice Number Material Customer Amount							

PROCESS	SUBPROCESS	CUSTNO	CUSTNAME	ADDRESS	EMAIL	MATNUM	MATNAME	UOM	PRICE	QTY	QUOTENUM	ORDERNUM	ORDERDATE	PRODUCTION_NUM	PRODUCTION_DATE	PRODUCTION_LOC	PRODUCTION_STATUS	AMT	TERMS	SHIP_DATE	INVOICE_DATE	EVENT_DATE	EVENT_TIME
ORDER_TO_CASH	INQUIRY	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5001	VF CORP	GREENSBOI	INFO@PRC	800004	GADGET	CASE	10.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10									NET/30				
ORDER_TO_CASH	INQUIRY	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11									2/10				
ORDER_TO_CASH	INQUIRY	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12									2/10				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21									NET/30				
ORDER_TO_CASH	INQUIRY	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11									NET/30				
ORDER_TO_CASH	INQUIRY	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23									NET/30				
ORDER_TO_CASH	INQUIRY	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11									NET/30				
ORDER_TO_CASH	INQUIRY	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24									NET/30				
ORDER_TO_CASH	INQUIRY	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54									NET/30				
ORDER_TO_CASH	INQUIRY	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43									2/10				
ORDER_TO_CASH	INQUIRY	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000									2/10				
ORDER_TO_CASH	INQUIRY	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25									NET/30				
ORDER_TO_CASH	INQUIRY	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30									NET/30				
ORDER_TO_CASH	INQUIRY	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5									NET/30				
ORDER_TO_CASH	QUOTE	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
ORDER_TO_CASH	QUOTE	5001	VF CORP	GREENSBOI	INFO@PRC	800004	GADGET	CASE	10.00	3	200002								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	QUOTE	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	QUOTE	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5	200006								NET/30				
ORDER_TO_CASH	QUOTE	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21	200007								NET/30				
ORDER_TO_CASH	QUOTE	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
ORDER_TO_CASH	QUOTE	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2	200009								NET/30				
ORDER_TO_CASH	QUOTE	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	QUOTE	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
ORDER_TO_CASH	QUOTE	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24	200012								NET/30				
ORDER_TO_CASH	QUOTE	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54	200013								NET/30				
ORDER_TO_CASH	QUOTE	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43	200014								2/10				
ORDER_TO_CASH	QUOTE	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000	200015								2/10				
ORDER_TO_CASH	QUOTE	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2	200016								NET/30				
ORDER_TO_CASH	QUOTE	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3	200017								NET/30				
ORDER_TO_CASH	QUOTE	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300	200018								NET/30				
ORDER_TO_CASH	QUOTE	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300	200019								NET/30				
ORDER_TO_CASH	QUOTE	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000	200020								NET/30				
ORDER_TO_CASH	QUOTE	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
ORDER_TO_CASH	QUOTE	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5	200021								NET/30				
ORDER_TO_CASH	QUOTE	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25	200022								NET/30				
ORDER_TO_CASH	QUOTE	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	QUOTE	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	QUOTE	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
ORDER_TO_CASH	QUOTE	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30	200026								NET/30				
ORDER_TO_CASH	QUOTE	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5	200027								NET/30				
ORDER_TO_CASH	AGREEMENT	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
ORDER_TO_CASH	AGREEMENT	5001	VF CORP	GREENSBOI	INFO@PRC	800004	GADGET	CASE	10.00	3	200002								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	AGREEMENT	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5	200006								NET/30				
ORDER_TO_CASH	AGREEMENT	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21	200007								NET/30				
ORDER_TO_CASH	AGREEMENT	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
ORDER_TO_CASH	AGREEMENT	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2	200009								NET/30				
ORDER_TO_CASH	AGREEMENT	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	AGREEMENT	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
ORDER_TO_CASH	AGREEMENT	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24	200012								NET/30				
ORDER_TO_CASH	AGREEMENT	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54	200013								NET/30				
ORDER_TO_CASH	AGREEMENT	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43	200014								2/10				
ORDER_TO_CASH	AGREEMENT	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000	200015								2/10				
ORDER_TO_CASH	AGREEMENT	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2	200016								NET/30				
ORDER_TO_CASH	AGREEMENT	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3	200017								NET/30				
ORDER_TO_CASH	AGREEMENT	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300	200018								NET/30				
ORDER_TO_CASH	AGREEMENT	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300	200019								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5	200021								NET/30				
ORDER_TO_CASH	AGREEMENT	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25	200022								NET/30				
ORDER_TO_CASH	AGREEMENT	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	AGREEMENT	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	AGREEMENT	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
ORDER_TO_CASH	AGREEMENT	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30	200026								NET/30				

ORDER_TO_CASH	AGREEMENT	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027							NET/30
ORDER_TO_CASH	ORDER	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	ORDER	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	ORDER	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	ORDER	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	MANUFACTURE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00	LOCAL		NET/30

ORDER_TO_CASH	SHIP	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5001 VF CORP	GREENSBOI	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00			
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00			
ORDER_TO_CASH	SHIP	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00			
ORDER_TO_CASH	SHIP	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00			
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00			
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00			
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00			
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00			
ORDER_TO_CASH	SHIP	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5008 COCA-COLA	ATLANTA, G/	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00			
ORDER_TO_CASH	SHIP	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00			
ORDER_TO_CASH	SHIP	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00			
ORDER_TO_CASH	SHIP	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00			
ORDER_TO_CASH	SHIP	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00			
ORDER_TO_CASH	SHIP	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00			
ORDER_TO_CASH	SHIP	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00			
ORDER_TO_CASH	SHIP	5031 GP	ATLANTA, G/	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00			
ORDER_TO_CASH	INVOICE	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5001 VF CORP	GREENSBOI	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00		
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00		
ORDER_TO_CASH	INVOICE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00		
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00		
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00		
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00		
ORDER_TO_CASH	INVOICE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5008 COCA-COLA	ATLANTA, G/	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00		
ORDER_TO_CASH	INVOICE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00	04/06/00		
ORDER_TO_CASH	INVOICE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00	03/31/00		
ORDER_TO_CASH	INVOICE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00	04/06/00		
ORDER_TO_CASH	INVOICE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00	04/06/00		
ORDER_TO_CASH	INVOICE	5031 GP	ATLANTA, G/	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00	04/06/00		

EXHIBIT B

Process Metrics Project
March 9, 2000

Design Specification 1.0

Last Revised By:	Date	Additions
Vincent Cyr	March 9, 2000	Initial Draft

Introduction

The activities that take place within a company to conduct its business are organized into processes. Each process is comprised of sub-processes that break down the process into more discreet elements – eventually becoming transactions. For example, the activity of a business that involves making products and selling them for money is known as "Order-to-Cash". This process is broken down into sub-processes that deal with the individual steps - first obtaining a prospective customer – to the manufacturing of product(s), shipping, and invoicing of that customer.

Each of these sub-processes is triggered by an event that passes information to the next sub-process so that action can be carried out. Often, an application may be responsible for one or more of these sub-processes. In the case of SAP, its integrated applications allow for many of the sub-processes activities to be carried out within the entire SAP R/3 system.

However, in many cases, some of the sub-processes are carried out by different applications or in the cases of e-commerce, may be carried out by entirely different organizations or companies.

How then, does someone inside the organization or outside the organization know at what point their particular order resides? Calling someone may cause a cascading number of phone calls, e-mails, faxes, system look-ups, etc. to determine status of the order. This is highly inefficient and results in poor customer response and service. In addition, being able to measure performance across the sub-processes would have vale to those in the organization trying to determine inefficiencies in their operations. Imagine the ability to know how long it took to go from order to manufacturing to shipping during each step of the process. Imagine being able to know exactly where in the process an order is even if your company is not performing one or more sub-processes. This project is intended to demonstrate how we can use messaging to make this possible.

Using MQSeries and MQSeries Integrator, we are going to simulate a process and its related sub-processes. As each event takes place, we are going to send messages with information pertaining to that event through MQSI to a database. This database will hold the messages (in XML format), which we will use to report against. The diagram 1.0 shows the overall layout of this concept.

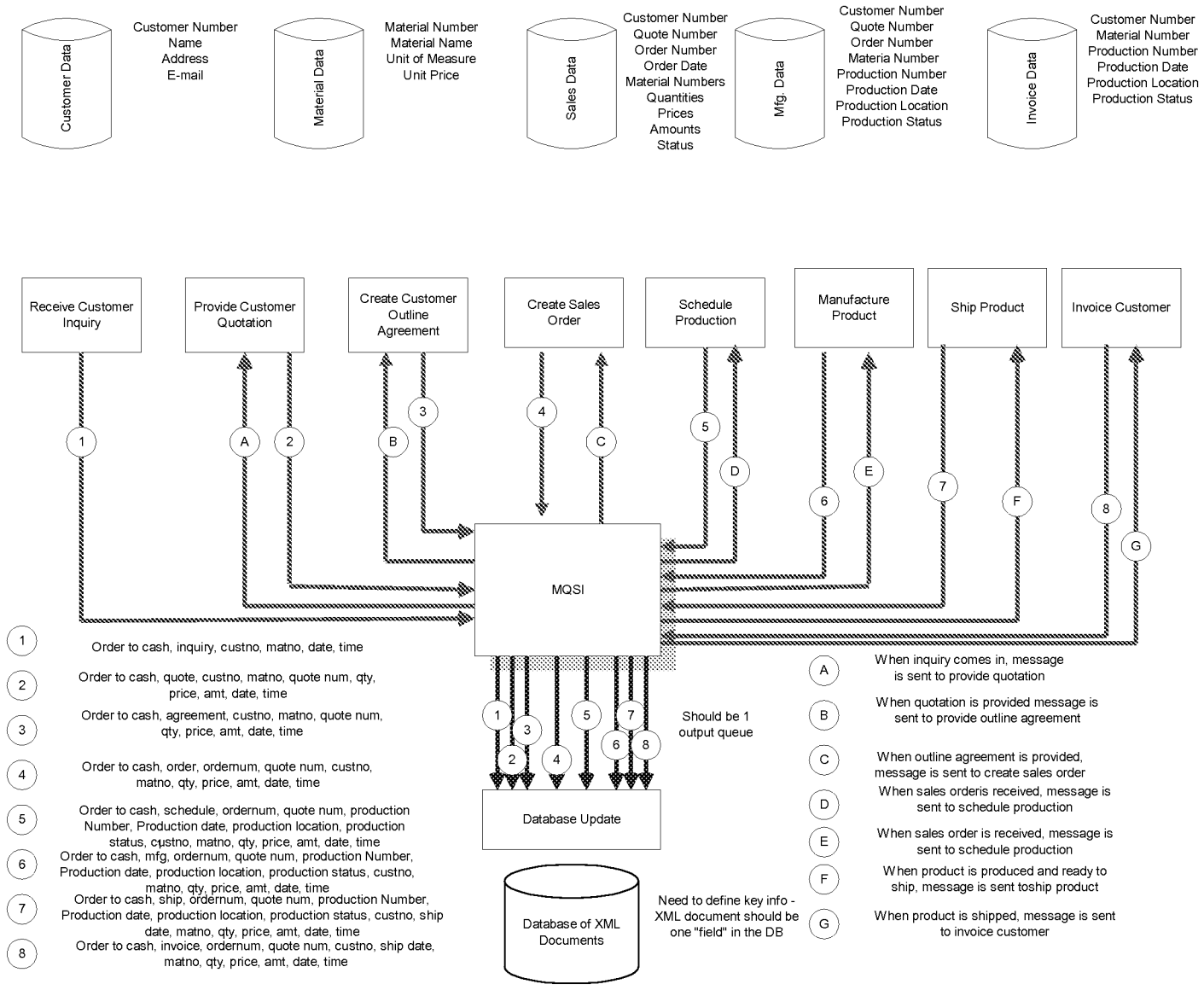

Customer Data
Customer Number
Name
Address
E-mail
Material Data
Material Number
Material Name
Unit of Measure
Unit Price
Sales Data
Customer Number
Quote Number
Order Number
Order Date
Material Numbers
Quantities
Prices
Amounts
Status
Mfg. Data
Customer Number
Quote Number
Order Number
Materia Number
Production Number
Production Date
Production Location
Production Status
Invoice Data
Customer Number
Material Number
Production Number
Production Date
Production Location
Production Status
Receive Customer Inquiry
Provide Customer Quotation
Create Customer Outline Agreement
Create Sales Order
Schedule Production
Manufacture Product
Ship Product
Invoice Customer
MQSI
Database Update
Database of XML Documents
Should be 1 output queue
Need to define key info - XML document should be one "field" in the DB
1 Order to cash, inquiry, custno, matno, date, time
2 Order to cash, quote, custno, matno, quote num, qty, price, amt, date, time
3 Order to cash, agreement, custno, matno, quote num, qty, price, amt, date, time
4 Order to cash, order, ordernum, quote num, custno, matno, qty, price, amt, date, time
5 Order to cash, schedule, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
6 Order to cash, mfg, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
7 Order to cash, ship, ordernum, quote num, production Number, Production date, production location, production status, custno, ship date, matno, qty, price, amt, date, time
8 Order to cash, invoice, ordernum, quote num, custno, ship date, matno, qty, price, amt, date, time
A When inquiry comes in, message is sent to provide quotation
B When quotation is provided message is sent to provide outline agreement
C When outline agreement is provided, message is sent to create sales order
D When sales orderis received, message is sent to schedule production
E When sales order is received, message is sent to schedule production
F When product is produced and ready to ship, message is sent toship product
G When product is shipped, message is sent to invoice customer

Diagram 1.0

Development Approach

We should approach development by stubbing out pieces of functionality and validating the design in a step-by-step approach. We will then build upon these pieces as we increase capability. We will build the following components:

Process Engine – This will be the application that simulates the applications that perform the sub-processes of the main process. The main process will be Order-to-Cash. The sub-processes are: Inquiry, Quotation, Outline Agreement, Sales Order, Schedule Production, Manufacture, Ship, and Invoice. The Process Engine (PE) should be one program (C++ or Java Servelet) that has each of the sub-processes as a separate function within the application. All inputs and outputs should use MQSeries queues. MQSI application group/message types to distinguish messages from sub-processes. The PE will need to access various databases in order to obtain information about customers, materials, sales, manufacturing, shipping, and invoicing. Load programs may need to be developed to create sample data for these databases. We must also have a method for varying the time intervals between processes (throttling) to simulate real-life time lags between sub-process steps. For example, it may take 1 day between ordering a product and manufacturing a product, we need to show that variation so when we report the results, they appear realistic. The PE should be developed so that we can test the message flow first, then we can add database access and fill out the message structures.

MQSeries Integrator – MQSI will be the formatting and routing engine of this design. There will be several different formats coming into MQSI from the various sub-processes. The app group/message type in the MQRFH will determine which format to use. There will be one outbound format that will be used to send all event information to a database that will store all event messages. This format should be XML and one document should consist of all of the possible data elements across the process. These messages will all be placed on one output queue. The other outbound formats will be messages sent to the next sub-process in the process thread; on another queue, separate from the XML queue.

Database update – This process will take XML event messages from MQSI and insert them into a database of messages. The key needs to be defined which will allow for inquiry and reporting. The entire XML message will be placed in one field of the database. There should be a cleanup routine to purge older messages (all related to each other) based on a date or key parameter. Extraction of information from the database will be both inquiries against a particular order/customer/material/sub-process or a more generic statistical presentation of data across the entire process. Many of these inquiries are yet to be defined. Presentation of the information will be web-based using XSL style sheets.

At this point in the design, we should stub these pieces out and put as much together to test out these concepts. We will test these components and determine how to move forward from this point.

XML Document

One XML document is to be used for all of the messages coming out of each sub-process of the entire process thread. The data elements include:

Process
- Sub-process name (1 or more)
- Sub-process info (1 or more)
  - Date
  - Time
  - Customer (1)
    - Customer Number
    - Customer Name
    - Customer Address
    - Customer E-mail
  - Material (1 or more)
    - Material Number
    - Material Name
    - Unit of Measure
    - Price
    - Quantity
  - Sales Data (1)
    - Quotation Number
    - Order Number
    - Order Date
    - Manufacturing Data (1)
      - Production Number
      - Production Date
      - Production Location
      - Production Status
    - Invoice Data (1)
      - Amount
      - Terms
      - Date

EXHIBIT C

Author	Date	Description
Ken Fritz	08/07/2000	Initial Draft

About Process Metrics Simulator

The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory.

The program is initialized by a file which must be located in the c:\process\ directory on the users machine, called ProcessSim.ini. The file should be somewhat self explanatory; however, see the detailed documentation for more information.

This software was written in Visual Basic 6.0 and utilizes IBM's MQSeries ActiveX objects.

Process Metrics Simulator, 1.0a Documentation

Author	Date	Description
Ken Fritz	08/07/2000	Detailed Software Documentation, Initial Draft

I. Basic Design Goals

The simulator is intended to be a flexible utility to model business processes utilizing a variety of messaging constructs and formats. In its final version it will:

- Be written in a platform independent language
- Utilize multiple messaging transports (ie. Tibco, MQSeries)
- Utilize flexible message formats
- Allow for dynamic construction of business processes (Snap-in model)
- Allow for user interaction in setting latency and message drops/stoppage.

Currently, the simulator is in a very basic alpha development version which does the following:

- Supports a basic 8 process production model.
- Utilizes MQSeries messaging
- Allows for user configurable latency settings
- Supports only one basic XML message format.
- Written in Visual Basic 6.0

This document covers only the alpha version currently available.

II. User Interface

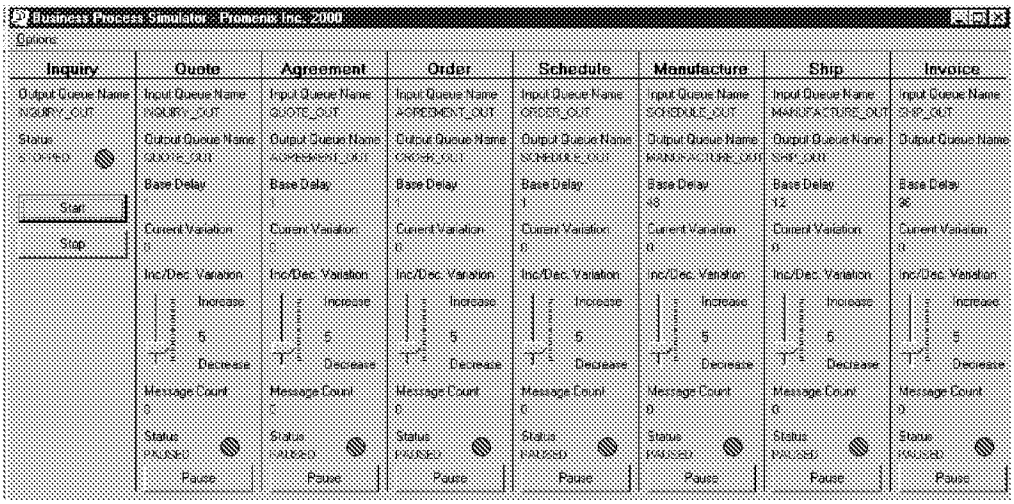


Figure 1 – Process Simulator GUI

The GUI for the process simulator is shown in Figure 1. The GUI allows the user to control all runtime parameters of the package which are limited to the following:

- Starting/Stopping by process
- Latency per process

Also, the GUI will indicate settings for pre-runtime configurable options:

- Input/Output Queue Names
- Base Variation

Finally, the GUI will also indicate dynamic parameters including final latency (delay), message count, and status of each process.

III. Sample Configuration File

Note: This file must be located in "C:\Process\" directory and named processsim.ini

[Common]	
QMGR = CONF01	The queue manager to be used
CHARACTERSET = 437	The MQSeries character set
DBQNAME = DB_IN	Database queue name
MQSI_Q_OUT = TESTQ	MQSI output queue
[Inquiry]	Settings for Inquiry process
OUTPUTQNAME = INQUIRY_OUT	Output queue
INITIAL_STATUS = 0	Initial status (0 = Stopped, 1 = Running)
XMLFILE = "c:\inquiry.txt"	XML document file
[Quote]	Settings for quote process
INPUTQNAME = INQUIRY_OUT	Input queue name
OUTPUTQNAME = QUOTE_OUT	Output queue name
BASEVARIATION = 1	Base variation (Delay) setting
INITVARIATION = 5	Initial random seed value (variation can be MAX +5 if this is 5)
XMLFILE = "c:\test.xml"	XML Document file
[Agreement]	Agreement process
INPUTQNAME = QUOTE_OUT	Settings are the same for the rest of these processes as for quote process.
OUTPUTQNAME = AGREEMENT_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[OrderProcess]	
INPUTQNAME = AGREEMENT_OUT	
OUTPUTQNAME = ORDER_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Schedule]	
INPUTQNAME = ORDER_OUT	
OUTPUTQNAME = SCHEDULE_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Manufacture]	
INPUTQNAME = SCHEDULE_OUT	
OUTPUTQNAME = MANUFACTURE_OUT	
BASEVARIATION = 48	

INITVARIATION = 5 XMLFILE = "c:\test.xml" [Ship] INPUTQNAME = MANUFACTURE_OUT OUTPUTQNAME = SHIP_OUT BASEVARIATION = 12 INITVARIATION = 5 XMLFILE = "c:\test.xml" [Invoice] INPUTQNAME = SHIP_OUT OUTPUTQNAME = INVOICE_OUT BASEVARIATION = 96 INITVARIATION = 5 XMLFILE = "c:\test.xml"	

IV. Sample XML Document Format

```
<PROCESS>
    ORDER_TO_CASH
  <SUBPROCESS>
      SHIP
    <CUSTOMER>
        <CUSTNO>5000</CUSTNO>
        <CUSTNAME>DOW CHEMICAL</CUSTNAME>
        <CITY>MIDLAND</CITY>
        <STATE>MI</STATE>
        <EMAIL>INFO@PROMENIX.COM</EMAIL>
    </CUSTOMER>
    <MATERIAL>
        <MATNUM>800003</MATNUM>
        <MATNAME>WIDGET</MATNAME>
        <UOM>BOX</UOM>
        <PRICE>2</PRICE>
        <QTY>2</QTY>
    </MATERIAL>
    <SALES_DATA>
        <QUOTENUM>200001</QUOTENUM>
        <ORDERNUM>800000</ORDERNUM>
        <ORDERDATE>3/27/00</ORDERDATE>
    </SALES_DATA>
    <MANUFACT_DATA>
        <PRODUCTION_NUM>410000</PRODUCTION_NUM>
        <PRODUCTION_DATE>3/29/00</PRODUCTION_DATE>
        <PRODUCTION_LOC>LOCAL</PRODUCTION_LOC>
        <PRODUCTION_STATUS />
    </MANUFACT_DATA>
    <INVOICE_DATA>
        <AMT />
        <TERMS>NET/30</TERMS>
        <SHIP_DATE>3/31/00</SHIP_DATE>
        <INVOICE_DATE />
    </INVOICE_DATA>
  </SUBPROCESS>
  <EVENT_DATE />
  <EVENT_TIME />
</PROCESS>
```

V. Basic theory of operation

Initialization process:

1. Call ReadINI
    a. Open the ini file (must be c:\process\processsim.ini)
    b. Read all global variables from the INI
2. Call InitGUI
    a. Initialize labels and display settings
    b. Set status flags
    c. Set initial timer intervals
3. Call InitXMLFiles
    a. Load XML files into memory from disk
4. Call InitDOMS
    a. Create DOM Objects for each process
    b. Load XML from InitXMLFiles into DOMs
    c. Parse XML
5. Call StartTimers
    a. Set initial timer intervals to 100 ms
    b. By doing so, starts message processing

Initial process (trigger process)

1. Load initial dummy values into the pre-existing XML DOM
2. Generate a random TID
    a. Done with following formula: Year & Month & Day & Timer * Rnd (Where timer is seconds past midnight)
3. Dump XML to variable
4. Write contents of variable to the output queue and DB/MQSI queue

Messages are processed in the following sequence by a generic process:

1. Listener listens on input queue for the process
2. Message listener tries to retrieve a message with no wait interval.
    a. If message not available, timer interval set to 5000 (5 seconds) to allow processor to do other things while waiting for another message to arrive.
    b. If the message is there, processing continues
3. When message arrives, retrieve correlation ID
4. Set GUI parameters
    a. Timer interval to 100 (100 milliseconds)
    b. Change status to “Running” if it was “Paused”
    c. Change indicator from red to green
5. Create XMLDOM object
6. Load retrieved message into DOM and parse
7. Load values from retrieved message into variables (Currently static – should be dynamic in future)
8. Create random delay value
9. Using the XMLDOM created in the initialization for the base document, load values from the retrieved message into the new message
10. Change the time and date on the message by adding the delay value
11. Dump the XML from the DOM object into a variable
12. Write the contents of the variable to an MQ message having the same correlation ID as the previous to both the output queue and the MQSI/DB Output queue.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

DECLARATION UNDER 37 C.F.R. §1.132

I, Matthew Franklin, make this declaration in support of YYZ's Response to the first Office Action, filed herewith, and in the above identified reexamination, and do hereby declare the following:

1. I was a cofounder, Vice President and employee of Promenix, Inc. ("Promenix") the prior owner of the above referenced patent, in 2000. I was employed by Promenix from 1998, when we founded the company, to 2006, which was after the time Promenix transferred ownership of the above referenced patent to YYZ, Inc., the present owner.

2. My background is in the information technology area and I have worked consistently in that area for 22 years. I am still working in that area.

3. The two inventors on the above referenced patent, Vincent Cyr and Kenneth Fritz were also at Promenix in 2000, and I became familiar with their work, through almost daily observation and discussion, as Promenix was a small company with a maximum of thirty seven employees at any one time, located in a small multiroom office complex in Chadds Ford PA.

4. Promenix was in the business of implementing enterprise application software. These implementations, almost invariably in large enterprises, take months and are often extremely complicated as those enterprises have existing legacy systems, multiple locations, and multiple stakeholders, and may be integrating other types of new technology as well at the same time.

5. Promenix became interested in alternative revenue streams, areas we could explore without being subject to the vagaries of the enterprise market, as large enterprise installs of the type we did could be subject to a boom or bust mentality.

6. In pursuing those alternate streams, Vincent Cyr, ("Vince") President of Promenix, in 1998, began to become interested in messaging technology, which formed a possible backbone for enterprise installs, in that messaging often provides a protocol for transmitting information among disparate programs and systems.

7. In 1998, Vince and I started discussing possible uses of messaging technology in a business context. In August 1998 Vince and I discussed Exhibit A, in our offices in Chadds Ford, which was a document Vince had created exploring messaging technology for our customers.

8. In 1999 we had further discussions and Vince formed at some point during that year I believe a definite and permanent idea that monitoring messages could be used from a messaging system (e.g., IBM MQSeries) with a central message repository and providing, through a monitoring message, at least part of said original message data to that repository in order to identify the status of a

business process and its various elements. During our discussions that year, we discussed how that information could be used internally for status updates, disseminated to prospective customers, used by investors, etc.

9. I specifically recall the 1999 conversations because they took place as we were also working on an unrelated patent application during 1999, which we filed on New Year's Day 2000. At least some conversations about Vince's conception of the inventions of the above referenced patent took place as we were working on drafts and other materials in relation to that New Year's Day application.

10. I do not recall greater detail aside from what I have set forth here however as it was over twelve years ago. Nor do I have documents evidencing any discussions, as Promenix did not generate many documents because of its size (we had no such thing as inventor notebooks) and as far as I know Promenix kept very few documents of those it did generate when Promenix went out of business in 2006. Generally if we needed to communicate, it was our custom and practice to do so in personal meetings or over the telephone.

11. I do recall discussing Exhibit B, a document created by Vince in our offices in Chadds Ford, PA on or about the time he created it, January 11, 2000.

12. Vince had generated Exhibit B in the course of attempting to explore construction of a prototype and used our SAP R/3 installation in our offices, at least in part to capture data through a monitoring message ("original message data") in a database or central message repository.

13. On or about March 9, 2000, Vince, I and Kenneth Fritz ("Ken") specifically discussed the document attached here as Exhibit C, which had been prepared

by Vince.

14. As I mentioned above, Promenix was a small company, with our resources devoted to enterprise installs, yet Vince and I decided that the technology shown by Exhibit C was sufficiently promising to engage upon a development campaign, and Ken was assigned to build a prototype, with Vince's and my guidance.

15. Ken began work on the prototype immediately, and for the next six months, he, I and Vince had regular, almost daily conversations regarding elements of the prototype, interrupted only by our need to work on Promenix's revenue generating business.

16. I was aware Ken was working almost daily on the prototype because, I explained above, Promenix was housed in a small multiroom office complex, and I saw Ken everyday he and I were there.

17. On or about August 9, 2000, Ken presented Vince and I with the document attached here as Exhibit D which was as it states, the first working prototype of the inventions of the independent claims of the patent. Ken also showed us the prototype as it worked and was existing on our server, and I specifically recall observing how monitoring messages could be used from a messaging system (e.g., IBM MQSeries) and provide at least part of said original message data to a central message repository in order to identify the status of a business process and its various elements, in accordance with claim 1 and the other independent claims of the patent.

18. That is, I specifically recall Ken presenting to Vince and I,

A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,

retrieving information from the central message repository.

which is claim 1 of the patent, and I also recall Ken presenting to us the other elements of the other independent claims.

19. Therefore, from on or about March 9, 2000 to on or about August 9, 2000, I observed Ken working almost daily, interrupted only by his work on Promenix's revenue generating business, on the inventions defined and set forth in at least independent claims 1, 46, 51, 70, 90, 135, 140 and 154 (the "independent claims") of the above referenced patent.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: August 12, 2012

/Matthew Franklin/

MATTHEW FRANKLIN

EXHIBIT A

Systems Integration:

Using Intelligent Messaging with SAP R/3™

Vincent R. Cyr
President, Promenix Inc.

August 1998

Executive Summary

Implementing SAP R/3 involves many elements; Business process understanding, software configuration, education of users and support personnel, and a myriad of other related activities. One of the more challenging elements involves the integration of R/3 with all of the other systems in your organization (and possibly with systems external to your organization). This paper provides an insight to the use of *Intelligent Messaging* (IM) to speed up the integration process as well as providing a long-term strategy for additional integration efforts.

Whether you believe in *Best in Class* or *Best of Breed,* the fact remains that heterogeneous systems exist in your organization and they probably will continue to do so for many years to come. In fact, given the proliferation of packaged applications, custom development tools, and Internet –based applications, heterogeneous systems are likely to increase in number rather than decrease. The need for integrating these systems continues to challenge all organizations.

Intelligent messaging provides several benefits to an organization: asynchronous communications, data transformation, message routing, and most importantly, rules-based decision processes. All of these components combined make for a flexible, reliable, and maintainable infrastructure for application integration efforts. With the abstraction of business logic away from individual programs, changes can be made much more quickly and with fewer staff. People are more focused on solving the business problem instead of the technical problems regarding the integration of these disparate systems.

Using the following sections, a cohesive strategy can be developed to enable your organization to solve these integration problems.

Challenges of Systems Integration

Today, more than ever, well-executed systems integration efforts are the difference between successful implementations of software solutions and failures destined to the "great idea, bad implementation" trash heap. There is no magic potion, no silver bullet, when it comes to linking these multi-architected, multi-OS, multi-communication protocol environments. In most cases, if there are two systems that can be integrated efficiently, it is most likely an accident rather than a planned occurrence. If the need for integration is going to continue to expand at these rates, what we need is an understanding of the elements affecting our abilities to deliver. What tools, methods, and approaches could we use to increase our likelihood of success? Let us understand the elements affecting systems integration: Business processes, heterogeneous systems, scarcity of talent, and the pace of change.

Understanding of Business Processes

As more and more companies embrace ERP core solutions, by necessity, they become more focused on the core business process rather than the event or base transaction. This processed focused view has been impressed upon our organizations since Hammer & Champy published "Reengineering the Corporation". In addition, SAP AG has made process-oriented configuration of their R/3 software product easier and easier as each new release of the software is produced.

Unfortunately, very few legacy systems are process oriented. They are transaction and/or event based. This presents a problem when trying to establish integration points with an ERP system that is being implemented based on process threads. This means that business and systems analysts are required to understand how a legacy system fits within and entire process. This work should evolve into process maps that detail what system is involved in which part of the process. This is a vital and crucial step in the systems integration process that will lead to a better understanding of the systems that run your organization. Time consuming? Yes. A waste of time? Absolutely not! This is the reference point for your organization's application portfolio. It is from this that you can determine what system stays, goes, or needs to be phased out over time. It outlines areas that can be supplemented or replaced by your ERP system. It also provides visible identification of areas where additional software (non-ERP) may add value in a process thread.

You do not need to do this in one giant step. Start one process thread at a time. Require all new application development efforts to include supporting process diagrams and flows. As systems are being upgraded, add these process tasks to the effort. Over time, this discipline can become a natural part of your organization's work habits.

Systems, Systems, and more Systems

The proliferation of software and the solutions that can be provided by that software continues at what seems to be an unending pace. Legacy systems, once thought to have limited existences, now are being given new life as a result of Year 2000 efforts. Instead of turning them off, their value to the organization continues into the next millennium.

The packaged software supply continues to grow as the barrier to entry for software companies continues to be limited only by ideas and people to execute them; capital is plentiful and there are no other real assets to buy. These range from large ERP packages to small, "point solution" packages designed to solve a unique business function. The result of this: more software packages for you to incorporate into your organization that meet specific business processes and functions.

Robust application development environments and tools such as Borland's Delphi, Microsoft's Visual Studio, and others, are allowing for the creation of new software systems by internal application development departments at a blistering pace. Instead of large development projects aimed at the whole corporation, departments are now able to create their own applications very quickly. With the increased presence of the Internet and E-Commerce, the need for more systems, quickly, is increased. The result: more systems to integrate with existing systems.

When you put all of these factors together, your get systems, systems, and more systems with no relief in sight! What is even more problematic is that these systems need to communicate with each other. As mentioned earlier, businesses are becoming more process-oriented in how they behave. Systems must be integrated to support these processes. If you cannot stop the proliferation of systems, you must find a way to link them together quickly, efficiently, and in a way that long-term support and maintenance is possible.

The Talent Shortage

Numerous studies are confirming what has been known for several years – there are not enough skilled resources to do the work that is required. The Information Technology Association of America estimates that there are currently 340,000 unfilled positions in the computer industry. Studies from the American Electronics Association show that graduates in computer science and math decreased 29% from 1985 to 1996. With an industry growth rate exceeding 15%, it becomes quite apparent that there is a major talent shortage (Figure 1.)

What does this mean to those having to integrate systems? It means you must find methods and tools that can make those resources that you have more productive. You need to re-think the traditional approaches to systems integration; the coding of point-to-point program interfaces that link a program from one system to a program in another system. This traditional approach is labor intensive, something that you do not have available. In addition, this approach lends itself to inconsistencies in development,

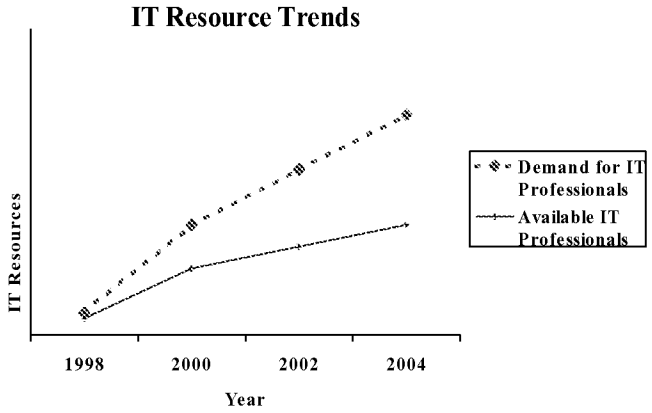


Figure 1.

implementation, and support.

Reductions in Timeframes

When was the last time a project was allowed 36 months, 24 months, or even 18 months to complete? In today's fast-paced business climate, systems projects have short timeframes of 3–6 months. If there are many systems to integrate, there is no time to code these integration points together. There is no time to learn a new programming language or architecture. The only activity you have time for is figuring out where these integration points need to be and how you can patch it together quickly. The pressure to speed up integration is not about to end. Therefore, new ways to improve productivity reduce learning curves, and focus on value-added activities needs to be embraced.

Intelligent Messaging Can Help

Intelligent messaging is the transformation and transmission of data from/to specific locations based upon specific data content across multiple hardware and software platforms. Intelligent messaging comprises asynchronous communications, rules-based decisions, and message routing. Full-powered intelligent messaging is capable of dynamic, real-time, application and maintenance of business logic abstracted from individual application systems. Let's examine these components in more detail.

Asynchronous Communications

Asynchronous communications means that when an application is sending data to another application, the sending application does not wait for the receiving application to process the data before moving on. In military terms, think of this as a "fire and forget" process similar to a cruise missile after it has been launched. The ship or aircraft, once a launch has been executed, can sail or fly wherever it wants to with a highly confident assurance that the missile will reach its target without any other assistance. The assumption is clear: if I send it, it will be processed.

Now, with asynchronous communications, it is prudent to include a queuing mechanism in order to make sure that in the event that the receiving system is not active, data is not lost. This queuing is also important for situations that require rollbacks or reruns of processing. These queues act as data buckets that hold data temporarily until the appropriate applications acknowledge that it is safe to empty the buckets. Keep in mind that the acknowledgement is primarily to the queuing mechanism; not the sending application. The sending application is busy doing something else at this time; not waiting around for some acknowledgement.

This is beneficial because an application that uses asynchronous communications does not need to wait around for a response from some external system before continuing its processing. Networks do not have to maintain open sessions across applications waiting for responses. In short, applications and networks become more efficient. Data can be processed and routed with much more expediency. With the increased need for bandwidth of the network, moving messages is much more "bandwidth friendly" than synchronous communications within a network or across larger WANs.

Rules-Based Decisions

Application logic, in its essence, is really an organization of decisions needing to be applied to a specific piece of data. These are the rules that must be followed in order for information to be produced.. Given the computer's strength in processing rules, the more the rules of an application can be organized, optimized, and de-coupled from the file-handling and data handling routines, the more the power of the computer can be utilized. In addition, these rules can also me managed and maintained more effectively;

an extremely valuable attribute given today's rapidly changing business demands. There is a simplicity that can be achieved by instructing the computer to do a specific action when the data contains a certain value.

Routing

A message, like a letter sent to a friend, has no value unless it is received. For letters, we have learned to trust FedEx to guarantee delivery to the right destination. All FedEx letters go to Memphis, their destinations are determined, and then they are put onto the plane going to that destination. That is what routing does for intelligent messaging. Messages have destinations that are determined in various ways; some destinations are pre-defined, some are based upon data content, and some are based upon lack of content. Routing takes the message, determines the correct destination, and sends it on its way. It is like a large mail-sorter; look at the address and send it on its way. One important element is the ability to take one inbound message and send different pieces to different locations. This provides a very efficient method of sending data to many places with a single input message.

Dynamic Application and Maintenance of Business Logic

There is one element that is not inherent to intelligent messaging but is such a critical component, it needs to be considered. The rules and routing are very powerful in the organization of your business logic. However, if these are static, hard-coded, difficult-to-maintain blobs of code, they do nothing in making your systems adaptable and flexible. Unless this business logic can be easy to change and maintain, your change request will sit in some development queue that will be accessed sometime in the year 2000 – right behind the 500 requests that came in before yours. Do not worry, your business unit manager will make sure that no area of his business will change for the next few years.
Remember the talent shortage? Remember the reduced timeframes? You may have a long wait if you do not have anyone around who can make these changes. What you must consider is a solution that will enable you to change these applications much faster that the traditional development path. You must have rules that are easy to develop and maintain.

SAP R/3

Much has already been said and written about SAP and its client/server ERP product, R/3. It is a powerful core enterprise package that has become the backoffice application infrastructure for thousands of companies. Since its existence in your organization is either real or imminent, your task is to integrate your existing systems to it. You may have to also integrate new add-on functionality as part of the R/3 implementation project. You also may have to integrate it with other companies that you do business with. All of these scenarios are real and their challenges can sometimes be minimal or they can be quite extensive. Fortunately, the ability to integrate these systems with R/3 has improved dramatically over the past few years; mainly as a result of SAP embracing an asynchronous messaging architecture.

Messaging Inherent within SAP

In 1994, SAP introduced Application Link Enabling (ALE). Designed to promote R/3 to R/3 communications, this architecture used messages from business scenarios to communicate asynchronously from one R/3 system to another. For example, the process of distributing changes to a customer master record from a central R/3 system to R/3 systems located in other divisions or plants was accomplished by sending a message (in the form of an SAP Intermediate Document record (IDOC)) to the target systems at the time of the customer record change. This architecture has since evolved to now be the core of the new Business Framework from SAP. This framework promotes a "loosely-coupled" integration between different R/3 modules. This allows for the propagation of R/3 systems to satisfy business requirements while maintaining integration between components. This is accomplished using the asynchronous messaging approach of ALE and IDOCs. It is important to note that R/3, while capable of these messaging capabilities, is first and foremost a business application package, not an intelligent messaging package. R/3 should not be designated as your message hub. It is your core application software that can efficiently and effectively operate in an asynchronous message architecture.

Value Provided to SAP R/3 by Intelligent Messaging

Whether intentional or unintentional, by implementing SAP R/3, you have started the introduction of a message-oriented architecture into your organization. This added benefit provided by R/3 will move your organization away from inflexible, inefficient, hard-to-manage systems to those that are more adaptive and flexible to your company's demands.

Flexible, Adaptive Integration Architecture

As mentioned earlier, systems within an organization change almost daily. New systems are created, old ones are changed, and some are taken out of service. Business needs are constantly challenging the organization to have information readily at hand. Given SAP R/3's flexible approach to message exchange, if you can move data from and to R/3 via this method, you can start making your new and existing systems just as flexible and adaptive. Intelligent messaging can help turn these static, inflexible systems into a continuation of a business process that includes R/3. Changes can be made quicker. Systems can be added or removed quicker. Your R/3 system will now be able to exchange information within your organization as well as to systems external to your organization. This improves and enriches the information within the R/3 system and your organization. You increase the return on your investment in R/3.

Abstraction of Application Logic Away from Programs

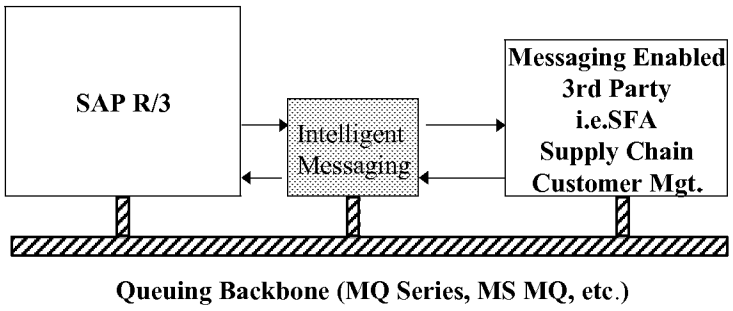
One of the benefits of R/3's ALE approach is that the need to perform programming in R/3 to integrate systems has been greatly reduced. Since there are many different business scenarios that have been developed by SAP into ALE/IDOC combinations, many interfaces require little to no programming at all in R/3. Business rules can be configured for the appropriate logic and messages can be routed based upon those rules. If the target or source systems are enabled by intelligent messaging, the need for any programming to be performed has been greatly reduced. If a change is required to support a new business rule, R/3 and the related systems can be changed very quickly. Programs do not have to be changed, compiled, or promoted. The skill set required to perform these changes may already exist within your organization.

Focused Efforts of Solving Business Problems, Not Technology Problems

Too often in our business, the integration effort ends up focusing on the technical challenges instead on solving the business problem. This is not a fault of the people working on these issues. It is a result of not having a common approach to integrating these systems, not having a message-oriented architecture that makes data easier to move and distribute, and not having business rules abstracted from the programs to allow for quicker, easier changes.
There is only so much time in a day. Do you want your people trying to figure out how to get an ASCII file into EBCDIC or do you want them determining what rule and route to apply if the data is coming from a specific, high-volume customer? Using R/3 and intelligent-messaging, it becomes easier to focus on the business problem, not the technology problem.

Enhanced Functionality from Legacy and Third Party Applications

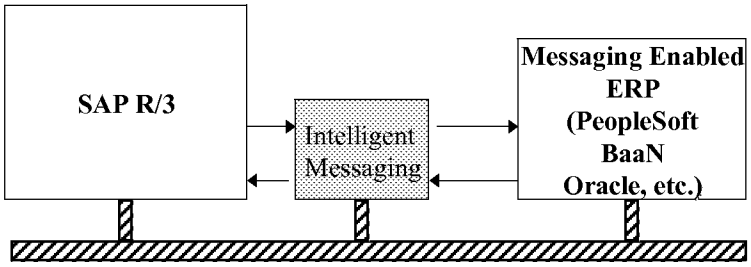
The following diagrams depict various applications of intelligent messaging with SAP R/3. As you can see, the flexibility that is gained from intelligent messaging is only limited to the ingenuity of your people. The first diagram shows a third-party application, such as sales force automation (SFA) connected to R/3.



Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 to non-R/3 communications can be integrated

This speeds up the integration process and reduces the need for the 3rd party software to write integration points for every ERP or legacy system. Instead, they write to a common messaging API.

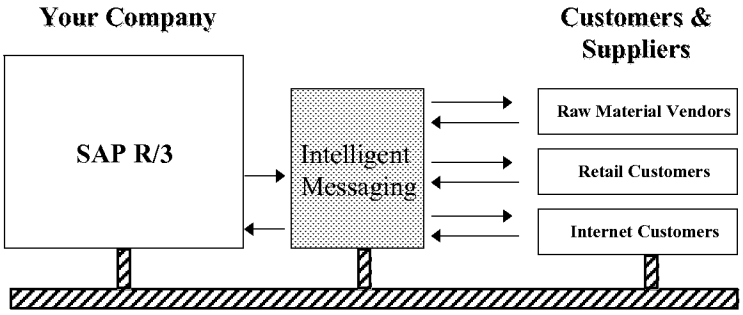
In the next figure, intelligent messaging is used to connect SAP R/3 with another ERP package such as PeopleSoft or BaaN. Because of acquisitions and industry consolidations, many organizations are finding themselves with more than one ERP system. Intelligent messaging can be used to leverage the investments made in both packages.



Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 to other ERP packages within an organization can be integrated.

This speeds up the integration process and reduces the need to wait for a standards group to define each ERP process. The ERP vendors "message enable" their packages (i.e. SAP's ALE) in order to facilitate this communication.

As your organization increases its electronic communication with external customers and suppliers, using intelligent messaging will permit you to apply specific rules and routing information to your data depending on the data content. Certain customers may have priority over others. Certain vendors may receive certain messages based on the nature of the parts being supplied.

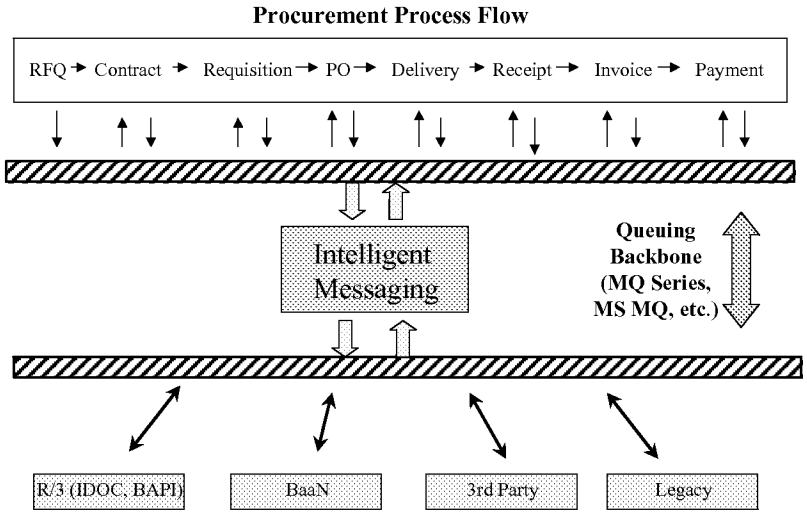


Using the formatting, rules, and routing capability of the intelligent messaging software, R/3 information to non-SAP systems of suppliers and customers can be integrated. This cross-organizational interchange of information improves the total order to fulfillment to cash process.

It is important to remember that your partners have many systems that are disparate from your own . Using intelligent messaging, they are able to keep their systems while still being able to take advantage of cross-organizational information flows.

This last diagram presents a more process-oriented view of intelligent messaging and how all of these pieces start to fit together. As you can see, a process-oriented approach coupled with intelligent messaging leads to a workflow-driven organization that has messages traveling from business event to event via the intelligent messaging engine. This messaging engine exchanges information with various systems (legacy, ERP, 3rd party) as the process is executed.

Process Oriented Application Integration



Conclusion

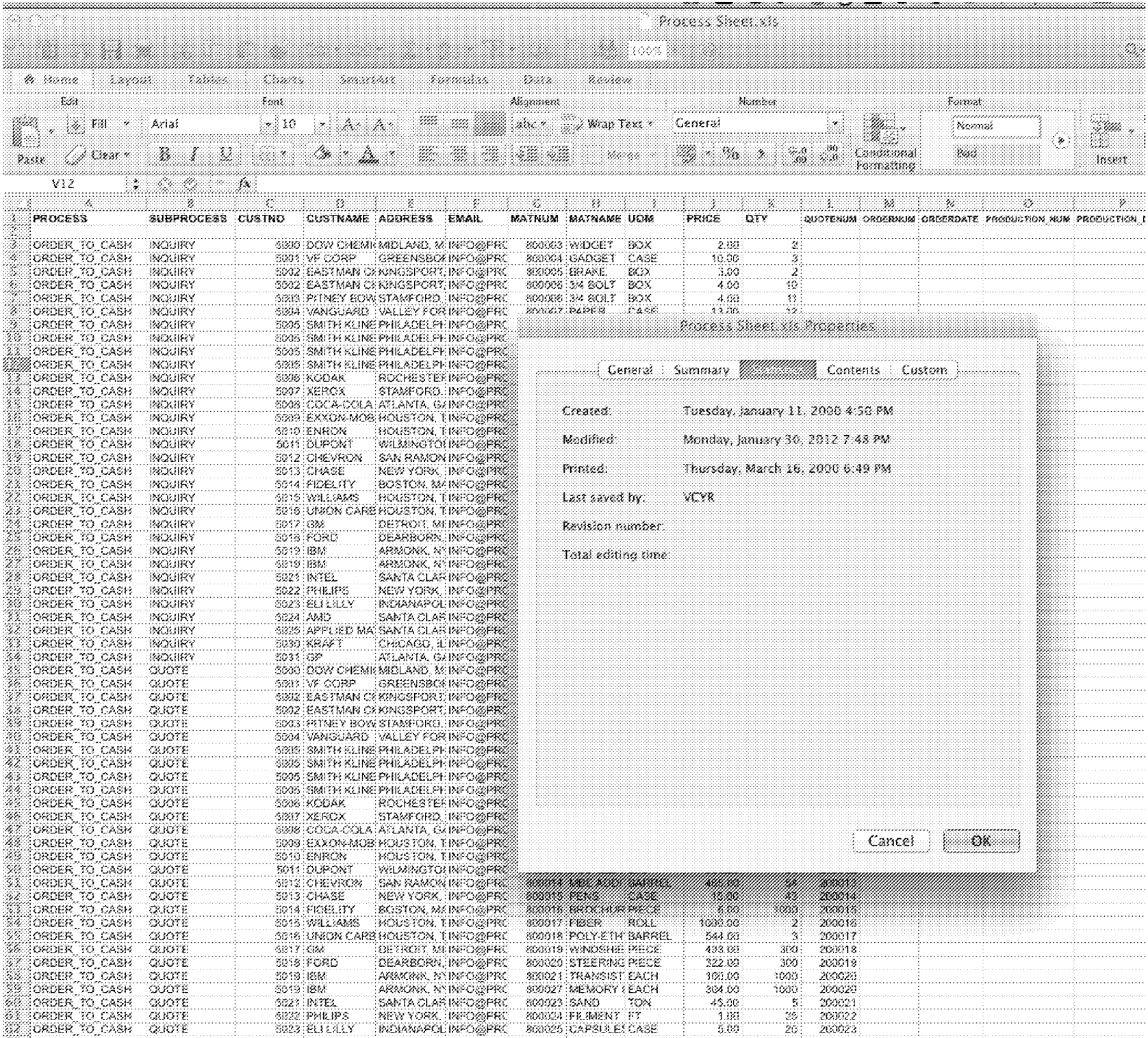
There are many challenges when implementing systems. Business process design, software configuration, training, resistance to change, etc. One challenge that is common to all organizations is the need to integrate all of these systems together. Alone, each system performs a specific piece of a complete business process. Using SAP R/3, more of these processes can be integrated within one application package. However, the legacy systems that remain, the additional third-party software, and internal custom development, all must be tied together with R/3. Intelligent messaging, with its asynchronous architecture, flexibility, and abstraction of business logic, provides a solution to bringing these disparate pieces together. Keep in mind, there are no silver bullets. This still requires strategic thinking, careful planning, and commitment to execution. The short-term payback is an accelerated method in completing your integration efforts for your R/3 implementation. The long-term payback is an integration architecture that lends itself to faster response to changing business needs.

About Promenix

Promenix is a systems integration service provider focusing on Enterprise Application Integration around SAP R/3. Located outside of Philadelphia, PA, Promenix helps its customers integrate their legacy and 3rd-party packages with SAP R/3 using such integration software as MQ Series from IBM and MQ Series Integrator from New Era of Networks, Inc.

They can be reached at (610) 361-1560, www.promenix.com.

EXHIBIT B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Layout
Tables
Charts
SmartArt
Formulas
Data
Review
Edit
Font
Alignment
Number
Format
Fill
Arial
10
Wrap Text
General
Normal
Bad
Paste
Clear
Conditional Formatting
Insert
V12
PROCESS
SUBPROCESS
CUSTNO
CUSTNAME
ADDRESS
EMAIL
MATNUM
MATNAME
UOM
PRICE
QTY
QUOTENUM
ORDERNUM
ORDERDATE
PRODUCTION_NUM
ORDER_TO_CASH
INQUIRY
QUOTE
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Summary
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Custom
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Modified:
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Printed:
Thursday, March 16, 2000 6:49 PM
Last saved by:
VCYR
Revision number:
Total editing time:
Cancel
OK

HP_1003_0509

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material	Customer Inquiry	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Customer		Sales Group					
				Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material	Customer Quotation	Sales org.					
		BOM		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Inquiry		Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material	Customer Outline Agreement	Sales org.					
		Batch		Division					
		Business Partner		Sales Office					
		Time		Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
Order-to-cash	Create Sales Order	Material	Sales Order	Sales org.					
		Batch	Production Order	Division					
		Business Partner	Manufacturing Order	Sales Office					
		Time	Purchase Req.	Sales Group					
		Customer Credit Account		Distr. Channel					
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
		Sales Promotion							
Order-to-cash	Ship Product	Material	Outbound Delivery	Shipping Point					
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Credit Account							
		Customer Inquiry							
		Customer Quotation							
		Customer Contract							
Order-to-cash	Invoice Customer	Material	Customer Billing Documen						
		Batch							
		Business Partner							
		Time							
		Customer Sales Order							
		Customer Contract							
		Customer Complaint Order							
		Credit Memo Request							
		Debit Memo Request							
		Returns							
Order-to-cash	Receive Payment	Invoice Number							
		Material							
		Customer							

Process Elements | Raw Data | Sheet3

Process	Sub-Process	Inputs	Outputs	Org. Units	Date In	Time In	Date Out	Time Out	Status
Order-to-cash	Receive Customer Inquiry	Material BOM Business Partner Customer	Customer Inquiry	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Provide Customer Quotation	Material BOM Business Partner Time Customer Inquiry	Customer Quotation	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Customer Outline Agreement	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation	Customer Outline Agreement	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Create Sales Order	Material Batch Business Partner Time Customer Credit Account Customer Inquiry Customer Quotation Customer Contract Sales Promotion	Sales Order Production Order Manufacting Order Purchase Req.	Sales org. Division Sales Office Sales Group Distr. Channel					
Order-to-cash	Ship Product	Material Batch Business Partner Time Customer Sales Order Customer Credit Account Customer Inquiry Customer Quotation Customer Contract	Outbound Delivery	Shipping Point					
Order-to-cash	Invoice Customer	Material Batch Business Partner Time Customer Sales Order Customer Contract Customer Complaint Order Credit Memo Request Debit Memo Request Returns	Customer Billing Document						
Order-to-cash	Receive Payment	Invoice Number Material Customer Amount							

PROCESS	SUBPROCESS	CUSTNO	CUSTNAME	ADDRESS	EMAIL	MATNUM	MATNAME	UOM	PRICE	QTY	QUOTENUM	ORDERNUM	ORDERDATE	PRODUCTION_NUM	PRODUCTION_DATE	PRODUCTION_LOC	PRODUCTION_STATUS	AMT	TERMS	SHIP_DATE	INVOICE_DATE	EVENT_DATE	EVENT_TIME
ORDER_TO_CASH	INQUIRY	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5001	VF CORP	GREENSBOI	INFO@PRC	800004	GADGET	CASE	10.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10									NET/30				
ORDER_TO_CASH	INQUIRY	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11									2/10				
ORDER_TO_CASH	INQUIRY	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12									2/10				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34									NET/30				
ORDER_TO_CASH	INQUIRY	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21									NET/30				
ORDER_TO_CASH	INQUIRY	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11									NET/30				
ORDER_TO_CASH	INQUIRY	5008	COCA-COLA	ATLANTA, GA	INFO@PRC	800010	SUGAR	BARREL	65.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23									NET/30				
ORDER_TO_CASH	INQUIRY	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11									NET/30				
ORDER_TO_CASH	INQUIRY	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24									NET/30				
ORDER_TO_CASH	INQUIRY	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54									NET/30				
ORDER_TO_CASH	INQUIRY	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43									2/10				
ORDER_TO_CASH	INQUIRY	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000									2/10				
ORDER_TO_CASH	INQUIRY	5015	WILLIAMS	HOUSTON, T	INFO@PRC	800017	FIBER	ROLL	1000.00	2									NET/30				
ORDER_TO_CASH	INQUIRY	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300									NET/30				
ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000									NET/30				
ORDER_TO_CASH	INQUIRY	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5									NET/30				
ORDER_TO_CASH	INQUIRY	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25									NET/30				
ORDER_TO_CASH	INQUIRY	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3									NET/30				
ORDER_TO_CASH	INQUIRY	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20									NET/30				
ORDER_TO_CASH	INQUIRY	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30									NET/30				
ORDER_TO_CASH	INQUIRY	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5									NET/30				
ORDER_TO_CASH	QUOTE	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
ORDER_TO_CASH	QUOTE	5001	VF CORP	GREENSBOI	INFO@PRC	800004	GADGET	CASE	10.00	3	200002								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	QUOTE	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	QUOTE	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	QUOTE	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800007	PAPER	CASE	13.00	22	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800025	CAPSULES	CASE	5.00	34	200006								NET/30				
ORDER_TO_CASH	QUOTE	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800010	SUGAR	BARREL	65.00	5	200006								NET/30				
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ORDER_TO_CASH	QUOTE	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
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ORDER_TO_CASH	QUOTE	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	QUOTE	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
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ORDER_TO_CASH	QUOTE	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
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ORDER_TO_CASH	QUOTE	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
ORDER_TO_CASH	QUOTE	5024	AMD	SANTA CLAR	INFO@PRC	800026	SILICON	PIECE	2000.00	3	200024								NET/30				
ORDER_TO_CASH	QUOTE	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
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ORDER_TO_CASH	QUOTE	5031	GP	ATLANTA, GA	INFO@PRC	800029	LYE	POUND	3.44	5	200027								NET/30				
ORDER_TO_CASH	AGREEMENT	5000	DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003	WIDGET	BOX	2.00	2	200001								NET/30				
ORDER_TO_CASH	AGREEMENT	5001	VF CORP	GREENSBOI	INFO@PRC	800004	GADGET	CASE	10.00	3	200002								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800005	BRAKE	BOX	3.00	2	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5002	EASTMAN CI	KINGSPORT,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	10	200003								NET/30				
ORDER_TO_CASH	AGREEMENT	5003	PITNEY BOW	STAMFORD,	INFO@PRC	800006	3/4 BOLT	BOX	4.00	11	200004								2/10				
ORDER_TO_CASH	AGREEMENT	5004	VANGUARD	VALLEY FOR	INFO@PRC	800007	PAPER	CASE	13.00	12	200005								2/10				
ORDER_TO_CASH	AGREEMENT	5005	SMITH KLINE	PHILADELPH	INFO@PRC	800008	COTTON	CASE	4.00	12	200006								NET/30				
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ORDER_TO_CASH	AGREEMENT	5006	KODAK	ROCHESTEF	INFO@PRC	800009	SILVER	OZ	23.00	21	200007								NET/30				
ORDER_TO_CASH	AGREEMENT	5007	XEROX	STAMFORD,	INFO@PRC	800010	TONER	PIECE	25.00	11	200008								NET/30				
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ORDER_TO_CASH	AGREEMENT	5009	EXXON-MOB	HOUSTON, T	INFO@PRC	800011	1" PIPE	FT	4.00	23	200010								NET/30				
ORDER_TO_CASH	AGREEMENT	5010	ENRON	HOUSTON, T	INFO@PRC	800012	6" PIPE	FT	2.43	11	200011								NET/30				
ORDER_TO_CASH	AGREEMENT	5011	DUPONT	WILMINGTOI	INFO@PRC	800013	POLYMER	BIN	335.23	24	200012								NET/30				
ORDER_TO_CASH	AGREEMENT	5012	CHEVRON	SAN RAMON	INFO@PRC	800014	MBE ADDI	BARREL	465.80	54	200013								NET/30				
ORDER_TO_CASH	AGREEMENT	5013	CHASE	NEW YORK,	INFO@PRC	800015	PENS	CASE	15.00	43	200014								2/10				
ORDER_TO_CASH	AGREEMENT	5014	FIDELITY	BOSTON, MA	INFO@PRC	800016	BROCHUR	PIECE	6.00	1000	200015								2/10				
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ORDER_TO_CASH	AGREEMENT	5016	UNION CARB	HOUSTON, T	INFO@PRC	800018	POLY-ETH	BARREL	544.00	3	200017								NET/30				
ORDER_TO_CASH	AGREEMENT	5017	GM	DETROIT, MI	INFO@PRC	800019	WINDSHIE	PIECE	433.00	300	200018								NET/30				
ORDER_TO_CASH	AGREEMENT	5018	FORD	DEARBORN,	INFO@PRC	800020	STEERING	PIECE	322.00	300	200019								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800021	TRANSIST	EACH	100.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5019	IBM	ARMONK, NY	INFO@PRC	800027	MEMORY I	EACH	304.00	1000	200020								NET/30				
ORDER_TO_CASH	AGREEMENT	5021	INTEL	SANTA CLAR	INFO@PRC	800023	SAND	TON	45.00	5	200021								NET/30				
ORDER_TO_CASH	AGREEMENT	5022	PHILIPS	NEW YORK,	INFO@PRC	800024	FILIMENT	FT	1.00	25	200022								NET/30				
ORDER_TO_CASH	AGREEMENT	5023	ELI LILLY	INDIANAPOL	INFO@PRC	800025	CAPSULES	CASE	5.00	20	200023								NET/30				
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ORDER_TO_CASH	AGREEMENT	5025	APPLIED MA	SANTA CLAR	INFO@PRC	800027	MEMORY I	PIECE	304.00	20	200025								NET/30				
ORDER_TO_CASH	AGREEMENT	5030	KRAFT	CHICAGO, IL	INFO@PRC	800028	MILK	GAL	2.59	30	200026								NET/30				

ORDER_TO_CASH	AGREEMENT	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027							NET/30
ORDER_TO_CASH	ORDER	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	ORDER	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	ORDER	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	ORDER	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	ORDER	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	ORDER	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	ORDER	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	ORDER	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	ORDER	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00					NET/30
ORDER_TO_CASH	SCHEDULE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00					2/10
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00					NET/30
ORDER_TO_CASH	SCHEDULE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00					2/10
ORDER_TO_CASH	SCHEDULE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00					NET/30
ORDER_TO_CASH	SCHEDULE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00					NET/30
ORDER_TO_CASH	SCHEDULE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00					NET/30
ORDER_TO_CASH	SCHEDULE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00					NET/30
ORDER_TO_CASH	MANUFACTURE	5000 DOW CHEMI	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5001 VF CORP	GREENSBOF	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00	LOCAL		2/10
ORDER_TO_CASH	MANUFACTURE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY I	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00	OFFSHORE		NET/30
ORDER_TO_CASH	MANUFACTURE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY I	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00	LOCAL		NET/30
ORDER_TO_CASH	MANUFACTURE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00	LOCAL		NET/30

ORDER_TO_CASH	SHIP	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5001 VF CORP	GREENSBOI	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00		
ORDER_TO_CASH	SHIP	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00		
ORDER_TO_CASH	SHIP	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00		
ORDER_TO_CASH	SHIP	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00		
ORDER_TO_CASH	SHIP	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00		
ORDER_TO_CASH	SHIP	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00		
ORDER_TO_CASH	SHIP	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00		
ORDER_TO_CASH	SHIP	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00		
ORDER_TO_CASH	SHIP	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	SHIP	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00		
ORDER_TO_CASH	INVOICE	5000 DOW CHEMI(	MIDLAND, MI	INFO@PRC	800003 WIDGET	BOX	2.00	2	200001	800000	03/27/00	410000	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5001 VF CORP	GREENSBOI	INFO@PRC	800004 GADGET	CASE	10.00	3	200002	800001	03/27/00	410001	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800005 BRAKE	BOX	3.00	2	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00	
ORDER_TO_CASH	INVOICE	5002 EASTMAN CH	KINGSPORT,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	10	200003	800002	03/28/00	410002	03/30/00 OFFSHORE		NET/30	04/01/00	04/01/00	
ORDER_TO_CASH	INVOICE	5003 PITNEY BOW	STAMFORD,	INFO@PRC	800006 3/4 BOLT	BOX	4.00	11	200004	800003	03/27/00	410003	03/29/00 LOCAL		2/10	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5004 VANGUARD	VALLEY FOR	INFO@PRC	800007 PAPER	CASE	13.00	12	200005	800004	03/27/00	410004	03/29/00 LOCAL		2/10	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800008 COTTON	CASE	4.00	12	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800007 PAPER	CASE	13.00	22	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800025 CAPSULES	CASE	5.00	34	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5005 SMITH KLINE	PHILADELPH	INFO@PRC	800010 SUGAR	BARREL	65.00	5	200006	800005	03/29/00	410005	03/31/00 LOCAL		NET/30	04/02/00	04/02/00	
ORDER_TO_CASH	INVOICE	5006 KODAK	ROCHESTEF	INFO@PRC	800009 SILVER	OZ	23.00	21	200007	800006	03/27/00	410006	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5007 XEROX	STAMFORD,	INFO@PRC	800010 TONER	PIECE	25.00	11	200008	800007	03/27/00	410007	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5008 COCA-COLA	ATLANTA, GA	INFO@PRC	800010 SUGAR	BARREL	65.00	2	200009	800008	03/27/00	410008	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5009 EXXON-MOB	HOUSTON, T	INFO@PRC	800011 1" PIPE	FT	4.00	23	200010	800009	03/27/00	410009	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5010 ENRON	HOUSTON, T	INFO@PRC	800012 6" PIPE	FT	2.43	11	200011	800010	03/27/00	410010	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5011 DUPONT	WILMINGTOI	INFO@PRC	800013 POLYMER	BIN	335.23	24	200012	800011	03/27/00	410011	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5012 CHEVRON	SAN RAMON	INFO@PRC	800014 MBE ADDI	BARREL	465.80	54	200013	800012	03/30/00	410012	04/01/00 LOCAL		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5013 CHASE	NEW YORK,	INFO@PRC	800015 PENS	CASE	15.00	43	200014	800013	03/30/00	410013	04/01/00 LOCAL		2/10	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5014 FIDELITY	BOSTON, MA	INFO@PRC	800016 BROCHUR	PIECE	6.00	1000	200015	800014	03/30/00	410014	04/01/00 LOCAL		2/10	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5015 WILLIAMS	HOUSTON, T	INFO@PRC	800017 FIBER	ROLL	1000.00	2	200016	800015	03/30/00	410015	04/01/00 LOCAL		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5016 UNION CARB	HOUSTON, T	INFO@PRC	800018 POLY-ETH	BARREL	544.00	3	200017	800016	03/30/00	410016	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5017 GM	DETROIT, MI	INFO@PRC	800019 WINDSHIE	PIECE	433.00	300	200018	800017	03/30/00	410017	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5018 FORD	DEARBORN,	INFO@PRC	800020 STEERING	PIECE	322.00	300	200019	800018	03/30/00	410018	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, NY	INFO@PRC	800021 TRANSIST	EACH	100.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5019 IBM	ARMONK, NY	INFO@PRC	800027 MEMORY E	EACH	304.00	1000	200020	800019	03/30/00	410019	04/01/00 OFFSHORE		NET/30	04/03/00	04/03/00	
ORDER_TO_CASH	INVOICE	5021 INTEL	SANTA CLAR	INFO@PRC	800023 SAND	TON	45.00	5	200021	800020	03/27/00	410020	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5022 PHILIPS	NEW YORK,	INFO@PRC	800024 FILIMENT	FT	1.00	25	200022	800021	04/02/00	410021	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5023 ELI LILLY	INDIANAPOL	INFO@PRC	800025 CAPSULES	CASE	5.00	20	200023	800022	03/27/00	410022	03/29/00 OFFSHORE		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5024 AMD	SANTA CLAR	INFO@PRC	800026 SILICON	PIECE	2000.00	3	200024	800023	03/27/00	410023	03/29/00 LOCAL		NET/30	03/31/00	03/31/00	
ORDER_TO_CASH	INVOICE	5025 APPLIED MA	SANTA CLAR	INFO@PRC	800027 MEMORY E	PIECE	304.00	20	200025	800024	04/02/00	410024	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5030 KRAFT	CHICAGO, IL	INFO@PRC	800028 MILK	GAL	2.59	30	200026	800025	04/02/00	410025	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	
ORDER_TO_CASH	INVOICE	5031 GP	ATLANTA, GA	INFO@PRC	800029 LYE	POUND	3.44	5	200027	800026	04/02/00	410026	04/04/00 LOCAL		NET/30	04/06/00	04/06/00	

EXHIBIT C

Process Metrics Project
March 9, 2000

Design Specification 1.0

Last Revised By:	Date	Additions
Vincent Cyr	March 9, 2000	Initial Draft

Introduction

The activities that take place within a company to conduct its business are organized into processes. Each process is comprised of sub-processes that break down the process into more discreet elements – eventually becoming transactions. For example, the activity of a business that involves making products and selling them for money is known as "Order-to-Cash". This process is broken down into sub-processes that deal with the individual steps - first obtaining a prospective customer – to the manufacturing of product(s), shipping, and invoicing of that customer.

Each of these sub-processes is triggered by an event that passes information to the next sub-process so that action can be carried out. Often, an application may be responsible for one or more of these sub-processes. In the case of SAP, its integrated applications allow for many of the sub-processes activities to be carried out within the entire SAP R/3 system.

However, in many cases, some of the sub-processes are carried out by different applications or in the cases of e-commerce, may be carried out by entirely different organizations or companies.

How then, does someone inside the organization or outside the organization know at what point their particular order resides? Calling someone may cause a cascading number of phone calls, e-mails, faxes, system look-ups, etc. to determine status of the order. This is highly inefficient and results in poor customer response and service. In addition, being able to measure performance across the sub-processes would have vale to those in the organization trying to determine inefficiencies in their operations. Imagine the ability to know how long it took to go from order to manufacturing to shipping during each step of the process. Imagine being able to know exactly where in the process an order is even if your company is not performing one or more sub-processes. This project is intended to demonstrate how we can use messaging to make this possible.

Using MQSeries and MQSeries Integrator, we are going to simulate a process and its related sub-processes. As each event takes place, we are going to send messages with information pertaining to that event through MQSI to a database. This database will hold the messages (in XML format), which we will use to report against. The diagram 1.0 shows the overall layout of this concept.

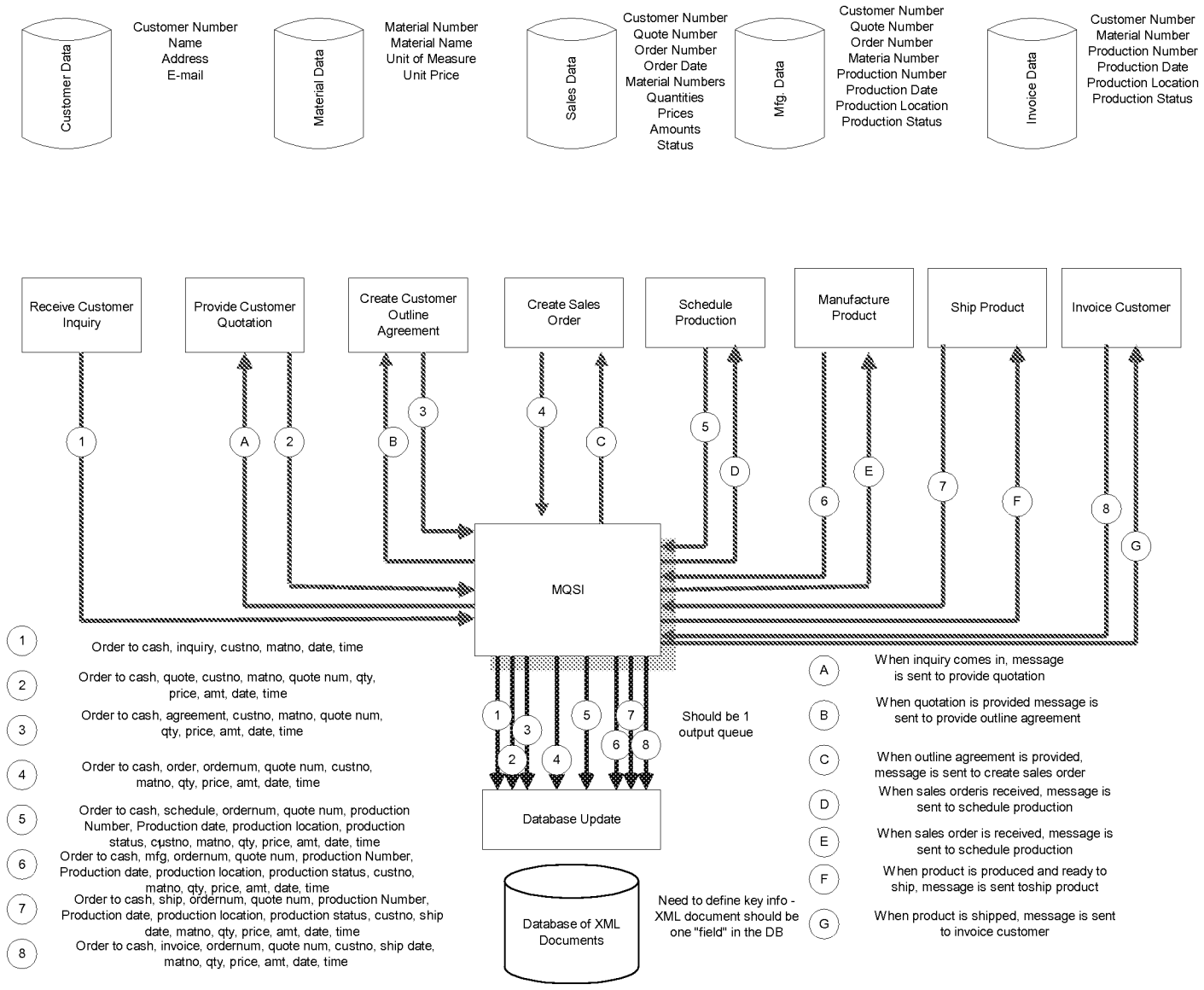

Customer Data
Customer Number
Name
Address
E-mail
Material Data
Material Number
Material Name
Unit of Measure
Unit Price
Sales Data
Customer Number
Quote Number
Order Number
Order Date
Material Numbers
Quantities
Prices
Amounts
Status
Mfg. Data
Customer Number
Quote Number
Order Number
Materia Number
Production Number
Production Date
Production Location
Production Status
Invoice Data
Customer Number
Material Number
Production Number
Production Date
Production Location
Production Status
Receive Customer Inquiry
Provide Customer Quotation
Create Customer Outline Agreement
Create Sales Order
Schedule Production
Manufacture Product
Ship Product
Invoice Customer
MQSI
Database Update
Database of XML Documents
Should be 1 output queue
Need to define key info - XML document should be one "field" in the DB
1 Order to cash, inquiry, custno, matno, date, time
2 Order to cash, quote, custno, matno, quote num, qty, price, amt, date, time
3 Order to cash, agreement, custno, matno, quote num, qty, price, amt, date, time
4 Order to cash, order, ordernum, quote num, custno, matno, qty, price, amt, date, time
5 Order to cash, schedule, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
6 Order to cash, mfg, ordernum, quote num, production Number, Production date, production location, production status, custno, matno, qty, price, amt, date, time
7 Order to cash, ship, ordernum, quote num, production Number, Production date, production location, production status, custno, ship date, matno, qty, price, amt, date, time
8 Order to cash, invoice, ordernum, quote num, custno, ship date, matno, qty, price, amt, date, time
A When inquiry comes in, message is sent to provide quotation
B When quotation is provided message is sent to provide outline agreement
C When outline agreement is provided, message is sent to create sales order
D When sales orderis received, message is sent to schedule production
E When sales order is received, message is sent to schedule production
F When product is produced and ready to ship, message is sent toship product
G When product is shipped, message is sent to invoice customer

Diagram 1.0

Development Approach

We should approach development by stubbing out pieces of functionality and validating the design in a step-by-step approach. We will then build upon these pieces as we increase capability. We will build the following components:

Process Engine – This will be the application that simulates the applications that perform the sub-processes of the main process. The main process will be Order-to-Cash. The sub-processes are: Inquiry, Quotation, Outline Agreement, Sales Order, Schedule Production, Manufacture, Ship, and Invoice. The Process Engine (PE) should be one program (C++ or Java Servelet) that has each of the sub-processes as a separate function within the application. All inputs and outputs should use MQSeries queues. MQSI application group/message types to distinguish messages from sub-processes. The PE will need to access various databases in order to obtain information about customers, materials, sales, manufacturing, shipping, and invoicing. Load programs may need to be developed to create sample data for these databases. We must also have a method for varying the time intervals between processes (throttling) to simulate real-life time lags between sub-process steps. For example, it may take 1 day between ordering a product and manufacturing a product, we need to show that variation so when we report the results, they appear realistic. The PE should be developed so that we can test the message flow first, then we can add database access and fill out the message structures.

MQSeries Integrator – MQSI will be the formatting and routing engine of this design. There will be several different formats coming into MQSI from the various sub-processes. The app group/message type in the MQRFH will determine which format to use. There will be one outbound format that will be used to send all event information to a database that will store all event messages. This format should be XML and one document should consist of all of the possible data elements across the process. These messages will all be placed on one output queue. The other outbound formats will be messages sent to the next sub-process in the process thread; on another queue, separate from the XML queue.

Database update – This process will take XML event messages from MQSI and insert them into a database of messages. The key needs to be defined which will allow for inquiry and reporting. The entire XML message will be placed in one field of the database. There should be a cleanup routine to purge older messages (all related to each other) based on a date or key parameter. Extraction of information from the database will be both inquiries against a particular order/customer/material/sub-process or a more generic statistical presentation of data across the entire process. Many of these inquiries are yet to be defined. Presentation of the information will be web-based using XSL style sheets.

At this point in the design, we should stub these pieces out and put as much together to test out these concepts. We will test these components and determine how to move forward from this point.

XML Document

One XML document is to be used for all of the messages coming out of each sub-process of the entire process thread. The data elements include:

Process
- Sub-process name (1 or more)
- Sub-process info (1 or more)
  - Date
  - Time
  - Customer (1)
    - Customer Number
    - Customer Name
    - Customer Address
    - Customer E-mail
  - Material (1 or more)
    - Material Number
    - Material Name
    - Unit of Measure
    - Price
    - Quantity
  - Sales Data (1)
    - Quotation Number
    - Order Number
    - Order Date
    - Manufacturing Data (1)
      - Production Number
      - Production Date
      - Production Location
      - Production Status
    - Invoice Data (1)
      - Amount
      - Terms
      - Date

EXHIBIT D

Author	Date	Description
Ken Fritz	08/07/2000	Initial Draft

About Process Metrics Simulator

The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory.

The program is initialized by a file which must be located in the c:\process\ directory on the users machine, called ProcessSim.ini. The file should be somewhat self explanatory; however, see the detailed documentation for more information.

This software was written in Visual Basic 6.0 and utilizes IBM's MQSeries ActiveX objects.

Process Metrics Simulator, 1.0a Documentation

Author	Date	Description
Ken Fritz	08/07/2000	Detailed Software Documentation, Initial Draft

I. Basic Design Goals

The simulator is intended to be a flexible utility to model business processes utilizing a variety of messaging constructs and formats. In its final version it will:

- Be written in a platform independent language
- Utilize multiple messaging transports (ie. Tibco, MQSeries)
- Utilize flexible message formats
- Allow for dynamic construction of business processes (Snap-in model)
- Allow for user interaction in setting latency and message drops/stoppage.

Currently, the simulator is in a very basic alpha development version which does the following:

- Supports a basic 8 process production model.
- Utilizes MQSeries messaging
- Allows for user configurable latency settings
- Supports only one basic XML message format.
- Written in Visual Basic 6.0

This document covers only the alpha version currently available.

II. User Interface

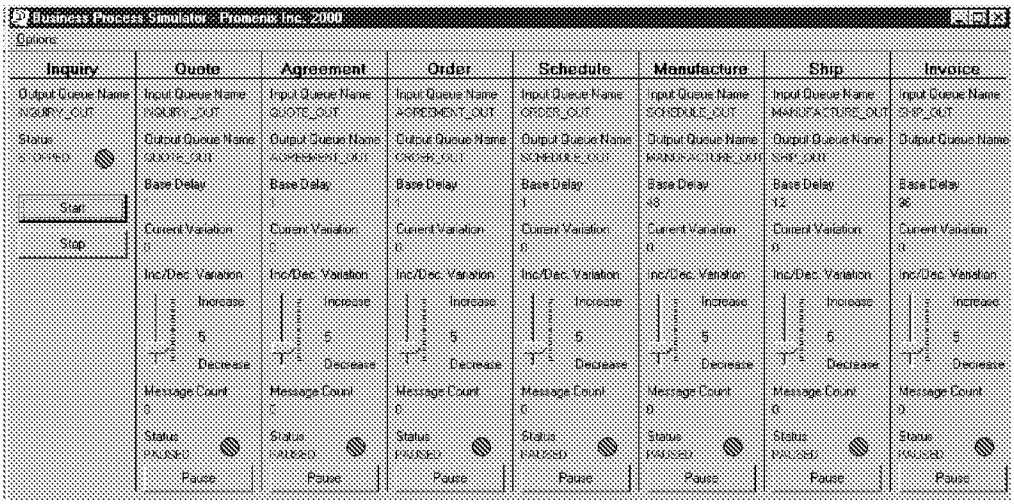


Figure 1 – Process Simulator GUI

The GUI for the process simulator is shown in Figure 1. The GUI allows the user to control all runtime parameters of the package which are limited to the following:

- Starting/Stopping by process
- Latency per process

Also, the GUI will indicate settings for pre-runtime configurable options:

- Input/Output Queue Names
- Base Variation

Finally, the GUI will also indicate dynamic parameters including final latency (delay), message count, and status of each process.

III. Sample Configuration File

Note: This file must be located in "C:\Process\" directory and named processsim.ini

[Common]	
QMGR = CONF01	The queue manager to be used
CHARACTERSET = 437	The MQSeries character set
DBQNAME = DB_IN	Database queue name
MQSI_Q_OUT = TESTQ	MQSI output queue
[Inquiry]	Settings for Inquiry process
OUTPUTQNAME = INQUIRY_OUT	Output queue
INITIAL_STATUS = 0	Initial status (0 = Stopped, 1 = Running)
XMLFILE = "c:\inquiry.txt"	XML document file
[Quote]	Settings for quote process
INPUTQNAME = INQUIRY_OUT	Input queue name
OUTPUTQNAME = QUOTE_OUT	Output queue name
BASEVARIATION = 1	Base variation (Delay) setting
INITVARIATION = 5	Initial random seed value (variation can be MAX +5 if this is 5)
XMLFILE = "c:\test.xml"	XML Document file
[Agreement]	Agreement process
INPUTQNAME = QUOTE_OUT	Settings are the same for the rest of these processes as for quote process.
OUTPUTQNAME = AGREEMENT_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[OrderProcess]	
INPUTQNAME = AGREEMENT_OUT	
OUTPUTQNAME = ORDER_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Schedule]	
INPUTQNAME = ORDER_OUT	
OUTPUTQNAME = SCHEDULE_OUT	
BASEVARIATION = 1	
INITVARIATION = 5	
XMLFILE = "c:\test.xml"	
[Manufacture]	
INPUTQNAME = SCHEDULE_OUT	
OUTPUTQNAME = MANUFACTURE_OUT	
BASEVARIATION = 48	

INITVARIATION = 5 XMLFILE = "c:\test.xml" [Ship] INPUTQNAME = MANUFACTURE_OUT OUTPUTQNAME = SHIP_OUT BASEVARIATION = 12 INITVARIATION = 5 XMLFILE = "c:\test.xml" [Invoice] INPUTQNAME = SHIP_OUT OUTPUTQNAME = INVOICE_OUT BASEVARIATION = 96 INITVARIATION = 5 XMLFILE = "c:\test.xml"	

IV. Sample XML Document Format

```
<PROCESS>
    ORDER_TO_CASH
  <SUBPROCESS>
      SHIP
    <CUSTOMER>
        <CUSTNO>5000</CUSTNO>
        <CUSTNAME>DOW CHEMICAL</CUSTNAME>
        <CITY>MIDLAND</CITY>
        <STATE>MI</STATE>
        <EMAIL>INFO@PROMENIX.COM</EMAIL>
    </CUSTOMER>
    <MATERIAL>
        <MATNUM>800003</MATNUM>
        <MATNAME>WIDGET</MATNAME>
        <UOM>BOX</UOM>
        <PRICE>2</PRICE>
        <QTY>2</QTY>
    </MATERIAL>
    <SALES_DATA>
        <QUOTENUM>200001</QUOTENUM>
        <ORDERNUM>800000</ORDERNUM>
        <ORDERDATE>3/27/00</ORDERDATE>
    </SALES_DATA>
    <MANUFACT_DATA>
        <PRODUCTION_NUM>410000</PRODUCTION_NUM>
        <PRODUCTION_DATE>3/29/00</PRODUCTION_DATE>
        <PRODUCTION_LOC>LOCAL</PRODUCTION_LOC>
        <PRODUCTION_STATUS />
    </MANUFACT_DATA>
    <INVOICE_DATA>
        <AMT />
        <TERMS>NET/30</TERMS>
        <SHIP_DATE>3/31/00</SHIP_DATE>
        <INVOICE_DATE />
    </INVOICE_DATA>
  </SUBPROCESS>
  <EVENT_DATE />
  <EVENT_TIME />
</PROCESS>
```

V. Basic theory of operation

Initialization process:

1. Call ReadINI
    a. Open the ini file (must be c:\process\processsim.ini)
    b. Read all global variables from the INI
2. Call InitGUI
    a. Initialize labels and display settings
    b. Set status flags
    c. Set initial timer intervals
3. Call InitXMLFiles
    a. Load XML files into memory from disk
4. Call InitDOMS
    a. Create DOM Objects for each process
    b. Load XML from InitXMLFiles into DOMs
    c. Parse XML
5. Call StartTimers
    a. Set initial timer intervals to 100 ms
    b. By doing so, starts message processing

Initial process (trigger process)

1. Load initial dummy values into the pre-existing XML DOM
2. Generate a random TID
    a. Done with following formula: Year & Month & Day & Timer * Rnd (Where timer is seconds past midnight)
3. Dump XML to variable
4. Write contents of variable to the output queue and DB/MQSI queue

Messages are processed in the following sequence by a <u>generic process:</u>

1. Listener listens on input queue for the process
2. Message listener tries to retrieve a message with no wait interval.
    a. If message not available, timer interval set to 5000 (5 seconds) to allow processor to do other things while waiting for another message to arrive.
    b. If the message is there, processing continues
3. When message arrives, retrieve correlation ID
4. Set GUI parameters
    a. Timer interval to 100 (100 milliseconds)
    b. Change status to “Running” if it was “Paused”
    c. Change indicator from red to green
5. Create XMLDOM object
6. Load retrieved message into DOM and parse
7. Load values from retrieved message into variables (Currently static – should be dynamic in future)
8. Create random delay value
9. Using the XMLDOM created in the initialization for the base document, load values from the retrieved message into the new message
10. Change the time and date on the message by adding the delay value
11. Dump the XML from the DOM object into a variable
12. Write the contents of the variable to an MQ message having the same correlation ID as the previous to both the output queue and the MQSI/DB Output queue.

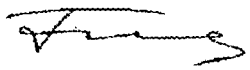
CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a copy of the enclosed documents was served according to 37 C.F.R. § 1.248 and MPEP 2249 on the requester in this reexamination by first class mail on August 13, 2012:

Ariyeh Akmal
Sprinkle IP Law Group
1301 West 25th Street, Suite 408
Austin, Texas 78705
Tel. (512) 637-9220
Fax. (512) 371-9088

Dated: August 13, 2012

Respectfully Submitted,



Joseph E. Chovanes
Registration No. 33,481
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002
Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

INTERVIEW SUMMARY

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held August 2, 2012, before Examiners Basehoar, Desai and Kosowski in the above referenced examination. Vincent Cyr, coinventor, and the undersigned were also present. The Interview was conducted in accordance with PO's proposed agenda, attached herewith and transmitted previously to the Office.

At the Interview, the undersigned reviewed the teachings of the '674 patent, following which the undersigned discussed the Office Action and presented distinctions between the prior art references and the claims of the '674 Patent. Specific attention was devoted to the monitoring message and central database repository elements in the claims, and the lack of either element in the prior art references. No agreement was reached.

PO and the undersigned gratefully acknowledge the courtesy shown to them by the Examiners.

Respectfully Submitted,

/joseph e chovanes/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiners : Rachna Desai, Adam Basehoar
Filed : December 15, 2000
Control Nos. : 90/009,961, 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket Nos. : Prom RE-001, 002

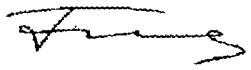
Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

PROPOSED AGENDA

Applicant YYZ, Inc. gratefully acknowledges the Examiners' availability for an Interview in the above referenced reexaminations. Inasmuch as the Interviews on both reexaminations shall occur at the same time, Applicant submits this proposed agenda for both cases:

1) Review of teachings of patents under reexamination;
2) Review of first Office Actions;
3) Review of Workflow Technology, including but not limited to as taught by the references;
4) Review of the claims in the patents under reexamination, including dependent claims, in light of the references.

Respectfully Submitted,



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Art Unit : 3992
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Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
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Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

DECLARATION UNDER 37 C.F.R. §1.132

I, Dieter Roller, make this declaration in support of YYZ in the above identified reexamination, and do hereby declare the following:

1. I was an employee of IBM Germany Development Inc., Böblingen, Germany ("IBM Germany") for 33 years, where I was the lead architect for IBM's workflow management system (IBM MQSeries Workflow), the Senior Development Manager for IBM's mainframe office suite, and a senior architect on the IBM team that defined WSFL ("Web Services Flow Language") and BPEL ("Business Process Execution Language"). I retired in May 2007 as an IBM Senior Technical Staff Member and a member of the IBM Academy of Technology.

2. I have authored and coauthored many articles concerning workflow, business processes, messaging and related technologies in journals and conference proceedings. A partial listing includes:

    1. F. Leymann and D. Roller, Production Workflow - Concepts and Techniques (PTR Prentice Hall, 2000)

2. T. Unger, D. Roller, Applying Processes for User-driven Refinement of People Activities. In: Proceedings of the 14th IEEE International EDOC Conference (EDOC 2010).
3. T. Scheibler, D. Roller, F. Leymann, Executing Pipes-and-Filters with Workflows. In: ICIW 2010.
4. T. Scheibler, F. Leymann, D. Roller, From Pipes-and-Filters to Workflows, International Conference on Interoperability for Enterprise Software and Applications (I-ESA) 2010.
5. R. Khalaf, D. Roller, F. Leymann, Revisiting the Behavior of Fault and Compensation Handlers in WS-BPEL, International Conference on Cooperative Information Systems (CoopIS 2009), Vilamoura, Algarve-Portugal, Nov 2009, Springer LNCS
6. F. Leymann, D. Roller, Modeling Business Processes with BPEL4WS, Information Systems and e-Business Management (ISeB), Springer, 2005.
7. M. Kloppmann, D. König, F. Leymann, G. Pfau, D. Roller, Enabling Technology: Ein J2EE-basiertes Business Process Management System zur Ausführung von BPEL- und Web Service-basierten Geschäftsprozessen, it - Information Technology, Oldenbourg 2004
8. M. Kloppmann, D. König, F. Leymann, G. Pfau, D. Roller, Business process choreography in WebSphere: Combining the power of BPEL and J2EE, IBM Systems Journal 43(2) (2004)
9. F. Leymann, D. Roller, Modeling Business Processes with BPEL4WS, Modellierung 2004 (Marburg, Germany, March 24-26, 2004), Springer 2004
10. D. König, M. Kloppmann, F. Leymann, G. Pfau, D. Roller, Web Services Invocation Framework: A Step towards Virtualization Components, Proc. XMIDX 2003 (Berlin, Germany, February 16-17, 2003)
11. F. Leymann, D. Roller, Flows in Information Integration, IBM Systems Journal 41(4) (2002)
12. F. Leymann, D. Roller, M.-T. Schmidt, Flows and Web Services: B2B aspects of business process management, IBM Systems Journal 41(2) (2002)
13. F. Leymann, D. Roller, Web Services as technical foundation for e-business engineering (in German), Proc. Informatik'2001 (Vienna, Austria, September 26 –28, 2001), Springer 2001
14. M. Kloppmann, F. Leymann, D. Roller, Enterprise application integration with workflow management (in German), HMD 213 (2000)
15. F. Leymann and D. Roller, Building a robust workflow management system with persistent queues and stored procedures, in: Proc. Intl. Conf. on Data Engineering ICDE'98 (Orlando, FL, February 25-28, 1998)
16. F. Leymann and D. Roller, Workflow based applications, IBM Systems Journal 36(1) (1997) 102-123
17. D. Roller, Verifikation von Workflows in IBM FlowMark in J.Becker and G.Vossen, Geschäftsprozeßmodellierung und Workflowmanagement (International Thomson Publ., 1996)
18. D. Roller, Performance Prediction and Optimization in Workflow-based Applications, Proc. HPTS '95 6th International Workshop on High Performance Transaction Systems (Pacidic grove, California, September 17-20, 1995)
19. F. Leymann and D. Roller, Business process management with FlowMark, Proc. COMPCON Spring 94 (San Francisco, CA, 2/28 - 3/4, 1994) IEEE Computer Society Press 1994
20. M. Blow, Y. Goland, M. Kloppmann, F. Leymann, G. Pfau, D. Roller, M. Rowley, BPELJ: BPEL for Java, BEA Systems & IBM Corporation

(2004) Business Process Execution Language for Web Services 1.0, BEA Systems, Microsoft Corporation, IBM Corporation (2002)

21. F. Leymann and D. Roller: Business processes in a Web service world, IBM developerworks (2002)
22. F. Curbera, Y. Goland, J. Klein, F. Leymann, D. Roller, S. Thatte, S. Weerwarana: Business Process Execution Language for Web Services 1.0, BEA Systems, Microsoft Corporation, IBM Corporation (2002)

3. I hold more than 45 patents in the area of workflow management and transaction processing.

4. I hold an MS in physics from the University of Stuttgart, and am currently pursuing my PhD with Professor Leymann at the Institute of Architecture of Application Systems (IAAS) located at the University of Stuttgart, concentrating on optimization of flows.

5. I have written, worked on, and specialized in workflow, business process, messaging and related technologies for many years.

6. As noted above I am the coauthor of the book "Production Workflow Concepts and Techniques," Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (2000) (hereafter "Production Workflow.") Frank Leymann, my coauthor, and I had written Production Workflow as a textbook to document the state-of-the-art of workflow technology as a middleware technology and provide a theoretical foundation.

7. I understand Production Workflow has been applied as a prior art reference against the above-identified patent (the "'674 patent.")

8. I am the coinventor of U.S. Patent No. 6,073,111 entitled "Container Materialization/Dematerialization for Reduced Dataload and Improved Data-Coherency in Workflow-Management Systems" issued June 6, 2000 (hereafter "the '111 patent"). Frank Leymann and I were coinventors on the '111 patent

while we were at IBM Germany, and I understand the '111 patent has been applied as a prior art reference against the'674 patent.

9. I am the coinventor of U.S. Patent No. 6,122,633 entitled "Subscription within workflow management systems" issued Sept. 19, 2000 (hereafter "the '633 patent"). Frank Leymann and I were coinventors on the '633 patent while we were at IBM Germany, and I understand the '633 patent has been applied as a prior art reference against the'674 patent.

10. I am familiar with the reference Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS") as it taught an IBM workflow product that was the predecessor to IBM's MQSeries Workflow of which I was the lead architect for IBM, and I understand AWS has been applied as a prior art reference against the'674 patent.

11. I am familiar with the technology taught in the references I have listed above, which for purposes of this declaration I will call "Workflow Technology."

12. I have reviewed the '674 patent, and am familiar with the technology taught by that patent, which for purposes of this declaration I will call "Message Broker Technology."

13. Workflow Technology utilizes messaging technology for its internal processing (see, for example, Production Workflow at p. 92) however, Workflow Technology, as seen in the references above and as I have used the term here, is a different technology than the Message Broker Technology taught by the '674

patent.

14. More specifically, Claim 1 of the '674 patent defines the invention of the claim as being:

> 1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:
>
> providing, through a monitoring message, at least part of said original message data to a central message repository;
>
> populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,
>
> retrieving information from the central message repository.

15. Workflow Technology does not teach the elements of the claim and in fact has elements different from, and works differently, from the invention of the claim. In Workflow Technology there is an audit trail written by the workflow system to some datastore. AWS, for example, writes the audit trail to a flat file, MQSeries Workflow, a state-of-the-art workflow management system in 2000, uses a relational database to store the information.

16. The audit trail contains information about the execution of a business process, such as the start of a process or the finishing of a particular activity within the

process.

17. The workflow engine runs its whole processing as a transaction so that the information in the audit trail database correctly reflects the actions of the processes that the workflow engine carries out.

18. As of 2000, workflow engines were using data store technology (flat file or more likely databases) to store the audit trail information. Evidence for this approach is the '633 patent that Leymann and I had written, that exploits database technology to provide subscriptions for the audit trail information.

19. Since the audit trail is written as a record to a flat file or a database, it is by definition not a message and thus the elements of Message Broker Technology as taught by Claim 1 of the '674 patent, such as monitoring message and message repository, do not apply.

20. As of 2000, workflow engines were not directly generating messages that could be used by the message broker either, and it would have been significantly more efficient to have the workflow engine do so. Also, had they done so, using messaging for audit trail has the additional advantage that the location of the message repository is not confined to the location of the workflow engine.

21. Messaging technology also allows an application to insert message into a local queue and have the messaging system forward the message to a remote queue so that the message repository can be managed at a location most suitable. Furthermore, the messaging approach allows to easily combine the messages delivered by different workflow engines into a single repository, so that queries

across multiple workflow engines are feasible, something which is quite difficult to achieve with the workflow data storage technology of 2000.

22. In summary, workflow technology as of 2000, was just writing information about the execution of business processes to an audit trail, managed in a data base.

23. Therefore the monitoring message and central message repository elements of independent Claim 1 of the '674 patent are missing and not taught by Workflow Technology. This also means that other limitations in Claim 1 including: "populating a transaction record in said central message repository with said original message data provided by said monitoring message..." and "retrieving information from the central message repository" are not taught as well by Workflow Technology.

24. I note that the other independent claims in the '674 patent are claims 46, 51, 70, 90, 135, 140 and 154, and they share the same limitations of Claim 1 with regard to a monitoring message and a central message repository as well as operations and/or apparatus regarding the central messaging repository. Workflow Technology does not teach the elements of these claims either and has elements different from, and works differently, from the invention of these claims for the same reasons as I gave above with regard to Claim 1.

25. I have been engaged by YYZ, Inc. at a rate of €150 per hour, plus expenses, to provide my expertise in this matter. I have no contingent or other interest in any outcome in this matter.

26. My statements made and evidence given are done using my independent and

professional judgment not contingent upon my engagement by YYZ, and are as complete, accurate, and unbiased as I can make them.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: August 12, 2012

Dieter Roller

DIETER ROLLER

Electronic Acknowledgement Receipt

EFS ID:	13487869
Application Number:	90009960
International Application Number:	
Confirmation Number:	9422
Title of Invention:	APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES
First Named Inventor/Applicant Name:	7603674
Correspondence Address:	JOSEPH E. CHOVANES - 5 GREAT VALLEY PARKWAY SUITE 329 MALVERN PA 19355 US - -
Filer:	Joseph E. Chovanes
Filer Authorized By:	
Attorney Docket Number:	OPEN2200-1
Receipt Date:	13-AUG-2012
Filing Date:	07-NOV-2011
Time Stamp:	23:25:30
Application Type:	Reexam (Patent Owner)

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	Response after non-final action-owner timely	960resp.pdf	122867 66bd8db6af0acdbb15672b6ae4fe8ec2676c15ee	no	12
Warnings:					
Information:					
2	Rule 130, 131 or 132 Affidavits	960vc.pdf	1380020 0b8257e25c6b874e512443df4875b808f5205f4d	no	38
Warnings:					
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Information:					
3	Rule 130, 131 or 132 Affidavits	960kf.pdf	1073236 7ef44f7c4c76d1921c77531f02927d4f238ac16c	no	23
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
4	Rule 130, 131 or 132 Affidavits	960mf.pdf	1366982 e51707467e33377776a558418bb6bfd9e7d25b4d	no	38
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The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
5	Reexam Certificate of Service	Cerser.pdf	75867 fd27f50cddfae2fd39c535f2ba7bbe3108a9e6a0	no	1
Warnings:					
Information:					
6	Applicant summary of interview with examiner	intsum.pdf	1059497 e1dc4dc5e33ef6aacfc6fb6429fd28eca94c1cdd	no	2
Warnings:					
Information:					
7	Rule 130, 131 or 132 Affidavits	dr1001.pdf	347755 db47e41c278c287a32477a3522ba23a83e78d5a3	no	8
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Information:					
		Total Files Size (in bytes):	5426224		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

RESPONSE TO FIRST OFFICE ACTION

THE PATENT OWNER, YYZ LLC, of US Patent No. 7,603,674 (the " '674 patent" or the "patent") in the above identified reexamination, hereby timely files this Response, within the two month period set for response, to the first Office Action in the above captioned reexamination.

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held August 2, 2012, before Examiners Basehoar, Desai and Kosowski in the above referenced examination. An Interview Summary will be provided separately as appropriate.

PO has provided herewith declarations under 37 C.F.R. §1.131 of the inventors Vincent Cyr and Kenneth Fritz. PO has also provided herewith declarations under 37 C.F.R. §1.132 of corroborating witness Matthew Franklin and expert witness Dieter H. Roller.

The references in the case are:

1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques, Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (hereafter "Production Workflow").

2) US Patent No. 7,003,781 issued to Blackwell et al. (hereafter "Blackwell").

3) Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS").

4) Leymann '633 - (U.S. Patent No. 6,122,633, published 09/19/2000).

5) Leymann '111 - (U.S. Patent No. 6,073,111, published 06/06/2000).

6) US Patent No. 2002/0038276 issued to Buhannic et al. (hereafter "Buhannic").

PO has provided herewith three declarations that, it submits, provide sufficient facts to swear behind the Blackwell and Buhannic references. (PO notes that it now understands the Production Workflow reference was published on or about August 1999, and so is not seeking at this time to swear behind that reference.)

The Cyr, Fritz and Franklin declarations all provide facts surrounding the Exhibits provided therewith. It should be noted as well, that they all swear under penalty of perjury that the details they recall are from over twelve years ago, that the original assignee, Promenix, was a small company, did most of its communicating among the employees through personal meetings and telephone calls, did not keep inventor notebooks and the like, and it kept very few documents at all when it went out of business in 2006. (Cyr Declar. at 13, Fritz Declar. at 6-7, Franklin Declar. at 10.) Therefore PO has accumulated what it is able to prove its case regarding conception diligence and reduction to practice, and the evidence it has adduced is what presently exists. (See 37 C.F.R. 1.131: "Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence must be

satisfactorily explained.")

The conception date for the purposes here as proven through the Cyr, Fritz and Franklin declarations is on or about March 9, 2000, the date of Exhibit B of the Fritz declaration, and the date of Exhibit C of the Cyr and Franklin declarations. Each of the declarants swear that it was on or about that date that Cyr, the author of the document discussed its contents with them. (Cyr Declar. at 16-18, Fritz Declar. at 10-11, Franklin Declar. at 13-14.)

As noted in that Exhibit at page 2, that the "Process Metrics Project" of the Exhibit is going to use MQSeries and MQSeries Integrator, "to simulate a process and its related sub-processes. As each event takes place, we are going to send messages with information pertaining to that event through MQSI to a database. This database will hold the messages (in XML format), which we will use to report against. The diagram 1.0 shows the overall layout of this concept." The diagram 1.0 referred to shows original XML messages with original message data being inserted into a one field of a database of messages. The Exhibit therefore shows conception: Vince Cyr's definite and permanent idea that monitoring messages could be used from a messaging system (e.g., IBM MQSeries) with a central message repository and providing, through a monitoring message, at least part of said original message data to that repository in order to retrieve information from that database about the status of a business process and its various elements. See, e.g., Claim 1 of the '749 patent.

Each declarant then describes the due diligence exercised by ken fritz to conception. See, e.g. the Cyr declaration: "Ken began work on the prototype immediately, and for the next six months, he, I and Matt had regular, almost daily

conversations regarding elements of the prototype, interrupted only by our need to work on Promenix's revenue generating business." (Cyr Declar. at 18-21, Fritz Declar. at 12-15, Franklin Declar. at 15-18.) Both Matt and Vince saw Ken work on the prototype consistently. As Ken Fritz notes at paragraph 12 of his declaration:

> I began work on the prototype immediately, and for the next six months, I worked on it almost daily, using the server at Promenix, including researching, writing code for messaging software and screen displays, running tests of the code and other usual and customary tasks to get a software prototype running. My work on the prototype was interrupted only by my need to work on Promenix's revenue generating business.

Ken Fritz exercised due diligence. See e.g. *Mycogen Plant Sci., Inc. v. Monsanto Co.,* 252 F.3d 1306, 1316 (Fed. Cir. 2001): "Proof of reasonable diligence, however, does not require a party to work constantly on the invention or to drop all other work. See Bey v. Kollonitsch, 806 F.2d 1024, 1028, 231 U.S.P.Q. (BNA) 967, 970 (Fed. Cir. 1986); In re Nelson, 57 C.C.P.A. 893, 420 F.2d 1079, 1081, 164 U.S.P.Q. (BNA) 458, 459 (CCPA 1970); Gould v. Schawlow, 53 C.C.P.A. 1403, 363 F.2d 908, 919, 150 U.S.P.Q. (BNA) 634, 643 (CCPA 1966)."

On or about August 9, 2000, Ken Fritz provided presented Vince and Matt with the document attached to his declaration as Exhibit C, documentation of the first working prototype of the inventions of the independent claims of the patent. Ken Fritz notes at paragraph 14 of his declaration:

> I also showed Vince and Matt the prototype, as it worked and was existing on our server, and I specifically recall observing how monitoring messages could

be used from a messaging system (e.g., IBM MQSeries) and provide at least part of said original message data to a record in a central message repository in order to identify the status of a business process and its various elements, in accordance with claim 1 and the other independent claims of the patent.

As the Exhibit (C to the Fritz declaration, D to the Cyr and Franklin declarations) notes:

> The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory. (Page 1.) The messages are then written to the database through the MQSI/DB Output queue. (Page 3.)

Moreover, each declarant notes they specifically recall observing the prototype function according to claim 1 of the present patent. (Cyr Declar. at 20-21, Fritz Declar. at 14-15, Franklin Declar. at 17-18.)

By declarations and documents, PO has shown the conception on or about March 9, 2000, due diligence running from conception, and a first prototype showing reduction to practice, on or about August 9, 2000. Therefore, PO swears behind the Blackwell and Buhannic references, which have priority dates of May 5, 2000 and June 26, 2000 respectively. Those references are not prior art to the present patent.

PO also respectfully traverses the rejections of the Office Action.

The following rejections all involve similar references:

- under 35 U.S.C. 102(b) of claims 1-18, 20, 38, 39, 41-49, 51-86, 88, 90-107, 109, 127, 128, 130-138, 140-170, 172 and 173 as being anticipated by Production Workflow;

- under 35 U.S.C. 102(b) of claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 as being anticipated by AWS;

- under 35 U.S.C. 103(a) of claims 19, 21, 40, 50, 87, 89, 108, 110, 129, 139, and 171 as unpatentable over of Production Workflow;

- under 35 U.S.C. 103(a) of claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170 as unpatentable over AWS in view of Leymann '111; and,

- under 35 U.S.C. 103(a) of claims 52-55, 57, 58, 77, 78, 141-144, 161, and 162 as unpatentable over AWS in view of Leymann '633

As PO has noted previously, none of these contain a monitoring message nor a central message database. PO further refers here to its expert, Dieter Roller, who in his attached declaration makes more clear the differences.

Mr. Roller's credentials are impeccable. He, along with Frank Leymann, coauthored the Production Workflow reference: he has literally written the book on what he calls Workflow Technology. He and Leymann were also coinventors on Leymann '111 and Leymann '633 and Mr. Roller was IBM's lead architect on its replacement to AWS. Mr. Roller further notes in the attached declaration he has over 45 patents and has written, worked on, and specialized in workflow, business process, messaging and related technologies for many years:

6. As noted above I am the coauthor of the book "Production Workflow Concepts and Techniques," Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (2000) (hereafter "Production Workflow.") Frank Leymann, my coauthor, and I had written Production Workflow as a textbook to document the state-of the-

art of workflow technology as a middleware technology and provide a theoretical foundation.

7. I understand Production Workflow has been applied as a prior art reference against the above-identified patent (the "'674 patent.")

8. I am the coinventor of U.S. Patent No. 6,073,111 entitled "Container Materialization/Dematerialization for Reduced Dataload and Improved Data-Coherency in Workflow-Management Systems" issued June 6, 2000 (hereafter "the '111 patent"). Frank Leymann and I were coinventors on the '111 patent while we were at IBM Germany, and I understand the '111 patent has been applied as a prior art reference against the'674 patent.

9. I am the coinventor of U.S. Patent No. 6,122,633 entitled "Subscription within workflow management systems" issued Sept. 19, 2000 (hereafter "the '633 patent") . Frank Leymann and I were coinventors on the '633 patent while we were at IBM Germany, and I understand the '633 patent has been applied as a prior art reference against the'674 patent.

10. I am familiar with the reference Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS") as it taught an IBM workflow product that was the predecessor to IBM's MQSeries Workflow of which I was the lead architect for IBM, and I understand AWS has been applied as a prior art reference against the'674 patent.

11. I am familiar with the technology taught in the references I have listed above, which for purposes of this declaration I will call "Workflow Technology."

12. I have reviewed the '674 patent, and am familiar with the technology taught by that patent, which for purposes of this declaration I will call "Message Broker Technology."

13. Workflow Technology utilizes messaging technology for its internal processing (see, for example, Production Workflow at p. 92) however, Workflow Technology, as seen in the references above and as I have used the term here, is a different technology than the Message Broker Technology taught by the '674 patent.

14. More specifically, Claim 1 of the '674 patent defines the invention of the claim as being:

1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;
populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,
retrieving information from the central message repository.

15. Workflow Technology does not teach the elements of the claim and in fact has elements different from, and works differently, from the invention of the claim. In Workflow Technology there is an audit trail written by the workflow system to some datastore. AWS, for example, writes the audit trail to a flat file, MQSeries Workflow, a state-of-the-art workflow management system in 2000, uses a relational database to store the information.

16. The audit trail contains information about the execution of a business process, such as the start of a process or the finishing of a particular activity within the process.

17. The workflow engine runs its whole processing as a transaction so that the information in the audit trail database correctly reflects the actions of the processes that the workflow engine carries out.

18. As of 2000, workflow engines were using data store technology (flat file or more likely databases) to store the audit trail information. Evidence for this approach is the '633 patent that Leymann and I had written, that exploits database technology to provide subscriptions for the audit trail information.

19. Since the audit trail is written as a record to a flat file or a database, it is by definition not a message and thus the elements of Message Broker Technology as taught by Claim 1 of the '674 patent, such as monitoring message and message repository, do not apply.

20. As of 2000, workflow engines were not directly generating messages that could be used by the message broker either, and it would have been significantly more efficient to have the workflow engine do so. Also, had they done so, using messaging for audit trail has the additional advantage that the location of the message repository is not confined to the location of the workflow engine.

21. Messaging technology also allows an application to insert message into a local queue and have the messaging system forward the message to a remote queue so that the message repository can be managed at a location most suitable. Furthermore, the messaging approach allows to easily combine the messages delivered by different workflow engines into a single repository, so that queries across multiple workflow engines are feasible, something which is quite

difficult to achieve with the workflow data storage technology of 2000.

22. In summary, workflow technology as of 2000, was just writing information about the execution of business processes to an audit trail, managed in a data base.

23. Therefore the monitoring message and central message repository elements of independent Claim 1 of the '674 patent are missing and not taught by Workflow Technology. This also means that other limitations in Claim 1 including: "populating a transaction record in said central message repository with said original message data provided by said monitoring message…" and "retrieving information from the central message repository" are not taught as well by Workflow Technology.

24. I note that the other independent claims in the '674 patent are claims 46, 51, 70, 90, 135, 140 and 154, and they share the same limitations of Claim 1 with regard to a monitoring message and a central message repository as well as operations and/or apparatus regarding the central messaging repository. Workflow Technology does not teach the elements of these claims either and has elements different from, and works differently, from the invention of these claims for the same reasons as I gave above with regard to Claim 1.

Roller Declaration at paragraphs 6-24.

Mr. Roller makes clear that Workflow Technology does not anticipate nor make obvious the inventions of the present claims. Therefore, PO respectfully requests the rejections identified above under the Workflow technology references be withdrawn.

As noted above, PO believes it has sworn behind the Blackwell and Buhannic references. In the event the Office disagrees, PO traverses the rejections under those references.

As to Buhannic:

- claims 1, 46, 51, 70, 135, 140, and 154 are rejected under 35 U.S.C. 102(e) as being anticipated by Buhannic; and,

- claims 22-26, 28-37, 111-115, 117-126 and 139, are rejected under 35 U.S.C. 103(a) under Production Workflow in view of Buhannic.

Buhannic as filed from its priority date, however, is not prior art. Buhannic

claims priority from a provisional application filed on June 26, 2000, but that provisional is so general that it does not act as prior art here – it has none of the elements of the claims. See Buhannic 60/214,256. Moreover, the combination of Buhannic and Production Workflow cannot stand as it rests on Buhannic's non prior art provisional and against Mr. Roller's declaration setting forth the differences between Production Workflow and the patent here.

Therefore, PO respectfully requests the rejections identified above under Buhannic, and Workflow Technology in view of Buhannic be withdrawn.

As to Blackwell the rejections are:

- 1, 3, 5-7, 10-13, 15, 17-18, 41, 44, 46-48, 70, 72, 75, 77, 79, 90, 92, 94-96, 99-102, 104, 106-107, 109, 130, 133, 135-137, 154, 156, 159, 161, 163, and 172-173 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell; and,

- 2, 38, 51-55, 57-60, 63-65, 67, 69, 71, 91, 127, 140-146, 149-151, 153, and 155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell.

PO respectfully submits Blackwell does not have either a monitoring message nor a central message database. As noted in Blackwell, sensors 14 intercept API calls, create an event form the calls and provide the event to an analyzer 10 and local database 20 attached to the analyzer. Col. 5, lines 14-18. It is unclear if Blackwell collects original message data as is needed for a monitoring message in the present patent, but PO is unable to find any specific reference that it does. It is certainly clear that Blackwell has no central message repository as in the present patent. Blackwell notes specifically that a "local event database" 20 is attached to each analyzer 12 and is expressly called a "local event database" by Blackwell. Col. 5, lines 34-36 and Figure 1. Thus it may collet more than one event on a single sensor 14's path, but it certainly is not fed by anything other

than that single sensor. *Id.* Blackwell's "local event database" is not, by definition, a central message repository of the present patent.

Therefore, PO respectfully requests the rejections identified above under Blackwell be withdrawn.

Therefore, in light of the above, Applicant respectfully requests the Office withdraw its rejections and permit a Certificate of Reexamination to issue confirming the validity of all claims of the '674 patent.

Other Matters

In the event PO is seen as having a duty of litigation disclosure here, three matters have involved the '749 patent, all related cases in the Eastern District of Pennsylvania:

1) YYZ, LLC v. MetaStorm, Inc., 2011-cv-00931 (filed 02/07/2011, terminated 03/07/11);

2) YYZ, LLC v. MetaStorm, Inc., et. al., 2011-cv-01609 (filed 03/07/2011, Settlement Agreement executed January 31, 2012 (terminated 02/08/12); and,

3) InterSystems Corp. v. YYZ, LLC, 2011-cv-06602 (filed 10/21/2011, terminated 01/03/12.)

In view of the foregoing arguments, all claims are believed to be in condition for confirmation over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, PO reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may

be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. The absence of a reply to a specific rejection, issue or comment in the Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Respectfully Submitted,

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/009,960	11/07/2011	7603674	OPEN2200-1	9422

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EXAMINER	
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ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
09/19/2012	PAPER

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.

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EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/009,960*.

PATENT NO. *7603674*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/009,960	Patent Under Reexamination 7603674
	Examiner ADAM BASEHOAR	Art Unit 3992

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

a☒ Responsive to the communication(s) filed on *13 August 2012* . b☒ This action is made FINAL.
c☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire *2* month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Information Disclosure Statement, PTO/SB/08.
3. ☒ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☒ Claims *1-173* are subject to reexamination.
1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☐ Claims _____ are patentable and/or confirmed.
4. ☒ Claims *1-173* are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a)☐ approved (7b)☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   1☐ been received.
   2☐ not been received.
   3☐ been filed in Application No. _____ .
   4☐ been filed in reexamination Control No. _____.
   5☐ been received by the International Bureau in PCT application No. _____.
   * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.
10. ☐ Other: _____

cc: Requester (if third party requester)

Continuation of Description of the general nature of what was agreed to if an agreement was reached, or any other comments: Patent Owner's (PO) representative reviewed the teachings of the '674 patent. PO's representative then discussed the Office Action and presented distinctions between the prior art references and the claims of the '674 Patent. Specifically, with regard to the independent claims, PO's representative argued the prior art references failed to disclose "providing, through a monitoring message, at least part of said original message data to a central message repository" and "populating a transaction record in said central message repository with said original message data provided by said monitoring message". See also the attached agenda. No agreement was specifically reached.

DETAILED ACTION

1. This Office action addresses claims 1-173 of United States Patent Number 7,603,674 B2 (Cyr et al), for which it has been determined in the Order Granting Ex Parte Reexamination (hereafter the "Order") mailed 12/01/2011 that a substantial new question of patentability was raised in the Request for *Ex Parte* reexamination filed on 11/07/2011 (hereafter the "Request"). Claims 1-173 are subject to reexamination. This is a Final Office Action in response to the Response to First Office Action filed 08/13/2012.

Reexamination

2. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,603,674 B2 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

References

3. The following six references were cited and applied against the claims in the Non-Final Action, mailed 06/13/2012.

- **Production Workflow** – (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0)

- **Blackwell** – (U.S. Patent No. 7,003,781, published 02/21/2006)
- **Advanced Workflow Solutions (AWS)** – (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00)
- **Leymann '633** – (U.S. Patent No. 6,122,633, published 09/19/2000)
- **Leymann '111** – (U.S. Patent No. 6,073,111, published 06/06/2000)
- **Buhannic** – (U.S. Patent Application Publication No. 2002/0038276, published 03/28/2002)

Response to Arguments

4. Patent Owner's arguments, the Vincent R. Cyr 1.131 Declaration, the Kenneth Fritz 1.131 Declaration, the Matthew Franklin 1.131 Declaration, and the Dieter Roller 1.132 Declaration, all filed 08/13/2012, have each been fully considered and are discussed below with regard to the rejections as set forth in the last Office action.

The Cyr, Fritz, and Franklin 1.131 Declarations – Swearing Back of References

The Cyr, Fritz, and Franklin declarations filed on 08/13/2012 under 37 CFR 1.131 have been considered but are ineffective to overcome the Buhannic and Blackwell references.

The declarations must state FACTS and produce such documentary evidence and exhibits in support thereof as are available to show conception and completion of invention in this country or in a NAFTA or WTO member country (MPEP §715.07(C)), at least the conception being at a date prior to the effective date of the reference. Where there has not been reduction to practice prior to the date of the reference, the patent owner must also show diligence in the

completion of his or her invention from a time just prior to the date of the reference continuously up to the date of an actual reduction to practice or up to the date of filing his or her application (filing constitutes a constructive reduction to practice, 37 CFR 1.131). The Examiner notes that the Cyr, Fritz, and Franklin declarations do not appear to attempt to individually address the two distinct critical periods related to the Blackwell and Buhannic references. Instead, in order to antedate the Blackwell and Buhannic references, the Cyr, Fritz, and Franklin declarations attempt to present facts sufficient to show conception of the invention at least as early as March 9, 2000 coupled with due diligence during a single critical period from March 9, 2000 to an actual reduction to practice on August 9, 2000. For the purposes of analysis below the Examiner notes that the critical period necessary to antedate both the Blackwell and Buhannic references is May 4, 2000 (i.e., the date just prior to the earlier filed Blackwell reference (05/05/2000)) to August 9, 2000 (i.e., the stated date of actual reduction to practice of the claimed invention).

Conception

Conception is the mental part of the inventive act, but it must be capable of proof, as by drawings, complete disclosure to another person, etc. In Mergenthaler v. Scudder, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897), it was established that conception is more than a mere vague idea of how to solve a problem; the means themselves and their interaction must be comprehended also. The inventor must form a definite and permanent idea of the complete and operable invention to establish conception. Accordingly, there must be contemporaneous recognition and appreciation of the invention for there to be conception wherein it is settled that in establishing conception a party must show possession of every feature recited in the count, and

that every limitation of the count must have been known to the inventor at the time of the alleged conception.

The 37 CFR 1.131 declaration must establish possession of either the whole invention claimed or something falling within the claim (such as a species of a claimed genus), in the sense that the claim as a whole reads on it. In re Tanczyn, 347 F.2d 830, 146 USPQ 298 (CCPA 1965). The declaration and exhibits must clearly explain which facts or data patent owner is relying on to show conception of the invention prior to the effective dates of the references. Vague and general statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe conception "amounts essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the requirements of 37 CFR 1.131(b). In re Borkowski, 505 F.2d 713, 184 USPQ 29 (CCPA 1974). Patent Owner must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by Patent Owner. 505 F.2d at 718-19, 184 USPQ at 33. See also In re Harry, 333 F.2d 920, 142 USPQ 164 (CCPA 1964) (Affidavit "asserts that facts exist but does not tell what they are or when they occurred."). The essential thing to be shown under 37 CFR 1.131 is priority of invention and this may be done by any satisfactory evidence of the facts. FACTS, not conclusions, must be alleged.

The combination of the corroborating statements made in the Cyr, Fritz, and Franklin declarations (Cyr Declaration: Paragraphs 10-16; Fritz Declaration: Paragraphs 8-10; Franklin Declaration: Paragraphs 7-13) as well as the evidence presented in Exhibits A, B, and C (see: Cyr Declaration), some of which were previously explained to show specific features of the limitations for at least the independent claims in the previously submitted Cyr Declaration filed

02/01/2012 (Cyr Declaration 02/01/2012: Paragraphs 12-22 and 24-28), at least establishes conception of the invention on or about March 9, 2000. The evidence and declarations provide facts showing that the inventor had a definite and permanent idea of the complete and operable invention in addition to a complete disclosure of said invention to another person. Therefore the evidence and declarations provided are deemed sufficient to show conception of the invention on or about March 09, 2000 or prior to the effective dates of the Blackwell and Buhannic references for at least the independent claims.

Diligence

The critical period for diligence for a first conceiver but second reducer begins not at the time of conception of the first conceiver but just prior to the entry in the field of the party who was first to reduce to practice and continues until the first conceiver reduces to practice. Hull v. Davenport, 90 F.2d 103, 105, 33 USPQ 506, 508 (CCPA 1937) ("lack of diligence from the time of conception to the time immediately preceding the conception date of the second conceiver is not regarded as of importance except as it may have a bearing upon his subsequent acts"). An applicant must account for the entire period during which diligence is required. Gould v. Schawlow, 363 F.2d 908, 919, 150 USPQ 634, 643 (CCPA 1966) (Merely stating that there were no weeks or months that the invention was not worked on is not enough.); In re Harry, 333 F.2d 920, 923, 142 USPQ 164, 166 (CCPA 1964) (statement that the subject matter "was diligently reduced to practice" is not a showing but a mere pleading). A 2-day period lacking activity has been held to be fatal. In re Mulder, 716 F.2d 1542, 1545, 219 USPQ 189, 193 (Fed. Cir. 1983) (37 CFR 1.131 issue); Fitzgerald v. Arbib, 268 F.2d 763, 766, 122 USPQ 530, 532 (CCPA 1959)

(Less than 1 month of inactivity during critical period). The period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. It is further noted that the work relied upon to show reasonable diligence must be directly related to the reduction to practice of the invention in issue.

The evidence submitted in the Cyr, Fritz, and Franklin declarations are insufficient to establish diligence from a date prior to the date of reduction to practice of the Blackwell and Buhannic references to August 9, 2000 (i.e., the stated date of actual reduction to practice of the claimed invention). The Cyr, Fritz, and Franklin declarations are completely silent on the showing of facts of any evidence of diligence during the critical period. Each of the submitted declarations make similar corroborating statements as to why there is an absence of any specific evidence of diligence during the critical period (Cyr Declaration: Paragraph 13; Fritz Declaration: Paragraphs 6-7; Franklin Declaration: Paragraph 10). Additionally each of the submitted declarations make similar corroborating statements about the reasonable diligence conducted on an "almost daily" basis (Cyr Declaration: Paragraphs 18-19; Fritz Declaration: Paragraphs 12-13; Franklin Declaration: Paragraphs 15-16). The Examiner notes that 37 C.F.R. 1.131 does provide for the ability to satisfactorily explain the absence of original exhibits or records necessary for showing certain facts (37 C.F.R. 1.131(b): "Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence must be satisfactorily explained"). However, because the critical period extends over many months, mere corroborating statements in the declarations do not cure the fact that there is a complete lack of any specific evidence during said critical period. Therefore, said

corroborating statements that the inventors worked diligently to reduce the invention to practice amount to a mere pleading and not a showing of facts.

Reduction to Practice

In general, proof of actual reduction to practice requires a showing of the invention in a physical or tangible form that shows every element of the count and a showing that the invention actually existed and worked for its intended purpose. The invention must have been sufficiently tested and evidence to said testing provided to demonstrate that it will work for its intended purpose.

The evidence submitted is insufficient to establish applicant's alleged actual reduction to practice of the invention in this country or a NAFTA or WTO member country after the effective dates of the Blackwell and Buhannic references. The Cyr, Fritz, and Franklin declarations rely on Exhibit D ("Process Metrics Simulator, 1.0a Documentation") and provide corroborating statements for showing actual reduction to practice of the invention on or about August 9, 2000 (Cyr Declaration: Paragraphs 20-21; Fritz Declaration: Paragraphs 14-15; Franklin Declaration: Paragraphs 17-18). Outside of the corroborating statements the declarations are silent on showing actual facts in the evidence that provide proof that the invention actually existed and worked for its intended purpose. The statements are thus insufficient because they fail to provide a clear explanation of Exhibit D with an appropriate mapping to the claimed subject matter. It is unclear to the Examiner how the features provided/described in the "very basic alpha development version" (Exhibit D: Page 2) of the Process Metrics Simulator reads on all the claimed elements of the independent claims. Additionally, it is noted that the evidence provided

for showing actual reduction to practice is completely absent any showing of testing to demonstrate that the invention worked for its intended purpose.

Summary: For the above reasons the declarations filed Under 37 CFR 1.131 are deemed sufficient to establish conception on or about March 9, 2000, but are not sufficient to prove diligence or actual reduction to practice.

The 1.132 Dieter Roller Declaration

The PO appears to rely solely on the contents of the Roller Declaration to overcome the teachings of the Production Workflow and AWS references by showing that said references do not teach or suggest a monitoring message or central message database as described in the claims (Arguments: pp. 6-9). However, the Roller Declaration under 37 CFR 1.132 filed 08/13/2012 is insufficient to overcome the rejection of claims 1-173 based upon the various rejections in combination with the Production Workflow and/or AWS references as set forth in the last Office action because the Roller Declaration fails set forth facts that are commensurate in scope with the claims.

The Examiner recognizes that the expert Dieter Roller appears to be directly connected with a plurality of the applied references (Roller Declaration: Paragraphs 6-10). The Roller declaration attempts to differentiate the Production Workflow and AWS references (i.e., labeled "Workflow Technology") from the claims of the '674 patent (i.e., labeled "Message Broker Technology")(Roller Declaration: Paragraphs 11-18). However, the statements in the Roller

declaration do not overcome the Production Workflow and AWS references as applied to claims of the '674 patent. Specifically, the Roller declaration states that in Workflow Technology a generated audit trail containing information about the execution of a business process is written to a flat file or relational database to store the information (Roller Declaration: Paragraphs 15-18), but that since the audit trail is written as a record to a flat file or a database, it is by definition not a message and thus the elements of claim 1 of the '674 patent do not apply (Roller Declaration: Paragraph 19). The Roller declaration further summaries that workflow technology as of 2000, was just writing information about the execution of business processes to an audit trail, managed in a database (Roller Declaration: Paragraph 22). However, the Roller declaration does not explain what the definition of a message must be and specifically does not do so in view of the '674 patent claim language. From the AWS example in the Roller declaration, it is unclear how the explained audit trail which contains process execution information and is then stored in a database for future monitoring/reporting (see AWS: Pages 84-86) cannot be equated to a monitoring message and/or central message repository. As claimed, given the broadest reasonable interpretation, what constitutes a message is merely an information container that holds process related data. Additionally, the statements in the Roller declaration to the location of the message repository in relation to a distributed workflow system (Roller Declaration: Paragraphs 20-21) do not appear relevant at least as they are related to the independent claims of the '674 patent, which appear silent on the actual location and/or networked structure of the claimed messaging environment.

Thus, the various rejections involving the Production Workflow and AWS references are maintained.

The Buhannic Reference

With regard to the Buhannic reference the PO argues that while the Buhannic reference claims priority to provisional application No. 60/214,256, filed on 06/26/2000, said provisional is so general that it does not act as prior art in that it describes none of the elements of the claims (Remarks: Pages 9-10). First, the Examiner notes that the Buhannic reference also claims priority to provisional application No. 60/298,083, filed on 06/15/2001, who's date is after the effective date of the '674 patent (12/15/2000), and thus cannot be utilized to establish a prior art date. Second, the Examiner respectfully disagrees with the PO's general argument that the relied upon 60/214,256 provisional application fails to provides support for all the elements of at least the independent claims. The Examiner notes that the Buhannic reference is entitled to the benefit of the filing date of the provisional application if the provisional application properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. 112, first paragraph. The PO has not precisely pointed out which elements of the claims are not specifically supported by the disclosure of the 60/214,256 provisional application, outside a general statement of it being "so general that it does not act as prior art." In response, the Examiner points out, in view of independent claim 1, that the 60/214,256 provisional application supports an asynchronous messaging broker system (60/214,256: Page 8: "Through a suite of servers and messaging software...message broker sits at the hub"), whereby information from messages passed between a plurality entities of the system are stored via monitoring message in a central message repository (60/214,256: Page 6: "State Transition Model...tracks the state of each deal which it must pass through during its lifetime...trade, client, and dealer, are kept

informed on a real-time basis of the state of their trade"; Pages 11-12: "maintain the state of an order...receives a message...creates a state-model...assigns it a proper state...and caches it to a backing storage device to ensure it's persistence...updates the state, and again caches it for future use...tracking the order's state in real-time, based upon many automated, electronic messages...enables remote and asynchronous process"), whereby said information can be later retrieved from the repository (60/214,256: Page 5: "Singe access point...connect to one location...on our global network"; Page 6: "Participants of the trade, client, and dealer, are kept informed on a real-time basis of the state of their trade"; Pages 13-14: "Status real-time information (Trade-flow technology)"). The Examiner notes that the claimed monitoring message is not defined in such a way to preclude the teachings of Buhannic. Therefore, the effective date of the Buhannic reference as utilized against at least the independent claims of the '674 patent remains 06/26/2000, the date of the 60/214,256 provisional application. Thus, the rejections involving the Buhannic reference are maintained.

The Blackwell Reference

With regard to the Blackwell reference, PO argues that Blackwell does not teach or suggest a monitoring message or a central message repository (Remarks: Pages 10-11). PO argues that it is unclear if Blackwell collects original message data as disclosed by the '674 patent. Additionally, PO argues that Blackwell clearly has no central message repository, as claimed, and that the specifically named "local event database" 20 of Blackwell is only fed by a single sensor 14 and thus is not a central message repository. The Examiner respectfully disagrees with the PO. Blackwell clearly teaches utilizing a message passing technique whereby

a plurality of messages passed between various applications running on a plurality of processors of a distributed data processing system are monitored for certain predetermined criteria be sensors, and if said criteria is satisfied by a given message, storing all or a portion of the content of the message as a generated event and passing the generated events to a transaction database to be stored for future retrieval/analysis (Blackwell: column 3, lines 42-57; column 5, lines 14-35). Blackwell specifically teaches wherein the information captured in the monitoring message was from the original message data (Blackwell: column 5, line 49-column 6, line 13: "determine...an amount of information to be collected from the event data packet...the amount of information contained in the generated event depends on the filter rule specification; column 6, lines 39-62; column 14, line 45-column 15, line 57: "sends messages to various distributed applications...messaging is preferably employed to send data between processors...run independently and asynchronously relative to each other...captured event data flows back to the analyzer 10 from the sensors 14...track the flow of one or more transactions...sort the collected event data...such as message descriptor and the user data"). Blackwell explicitly states that the transaction database 20 is populated with event messages from multiple sensors 14 and operates on the stored event data with a data analysis module (Blackwell: column 15, lines 59-66: "receives event messages from the sensors 14, stores the event messages in the transaction database")(Figs. 13 & 14). Clearly the transaction database of Blackwell is a central message repository in that it stores and allows dynamic querying against all the event data captured by various sensors in the distributed data processing system (Blackwell: column 16, lines 3-53). The monitoring message and central messaging repository, as currently claimed, do not preclude

the teachings of Blackwell. Therefore the rejections involving the Blackwell reference are maintained.

Claim Rejections

5. The rejections below are confined to what has been deemed to be the best available art from the Request. However, prior to conclusion of this reexamination proceeding, claims must be patentable over all prior art cited in the order granting reexamination in order to be considered patentable or confirmed on the reexamination certificate.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-18, 20, 38, 39, 41-49, 51-86, 88, 90-107, 109, 127, 128, 130-138, 140-170, 172 and 173 are rejected under 35 U.S.C. 102(b) as being anticipated by Production Workflow (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and

Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0).

-Regarding claims 1-18, 20, 38, 39, 41-49, 51-86, 88, 90-107, 109, 127, 128, 130-138, 140-170, 172 and 173, Production Workflow teaches each and every limitation of the claims (see pages 14-25 of Request, and the claim charts on pages 59-104 of Appendix "A-1", which is hereby incorporated by reference).

8. Claims 1, 3, 5-7, 10-13, 15, 17-18, 41, 44, 46-48, 70, 72, 75, 77, 79, 90, 92, 94-96, 99-102, 104, 106-107, 109, 130, 133, 135-137, 154, 156, 159, 161, 163, and 172-173 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell (U.S. Patent No. 7,003,781).

-Regarding claims 1, 3, 5-7, 10-13, 15, 17-18, 41, 44, 46-48, 70, 72, 75, 77, 79, 90, 92, 94-96, 99-102, 104, 106-107, 109, 130, 133, 135-137, 154, 156, 159, 161, 163, and 172-173, Blackwell teaches each and every limitation of the claims (see pages 27-36 of Request, and the claim charts on pages 115-135 of Appendix "B-1", which is hereby incorporated by reference).

9. Claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 are rejected under 35 U.S.C. 102(b) as being anticipated by Advanced Workflow Solutions (AWS) (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00).

-Regarding claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173, Advanced Workflow Solutions (AWS) teaches each and every

limitation of the claims (see pages 37-47 of Request, and the claim charts on pages 151-196 of Appendix "C-1", which is hereby incorporated by reference).

10. Claims 1, 46, 51, 70, 135, 140, and 154 are rejected under 35 U.S.C. 102(e) as being anticipated by Buhannic (U.S. Patent Application Pub. No. 2002/0038276).

-Regarding independent claims 1, 46, 51, 70, 135, 140, and 154, Buhannic teaches each and every limitation of the claims (see pages 51-58 of Request, and the claim charts on pages 213-220 of Appendix "D", which is hereby incorporated by reference).

Claim Rejections - 35 USC § 103

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

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 19, 21, 40, 50, 87, 89, 108, 110, 129, 139, and 171 are rejected under 35 U.S.C. 103(a) as being unpatentable over Production Workflow (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0).

-Regarding claims 19, 21, 50, 108, 110, and 139, Production Workflow in view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 106, 111, 112, and 114 of Appendix "A-2", which is hereby incorporated by reference).

-Regarding claims 40, 87, 89, 129, and 171, Production Workflow in view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 70, 87, 88, 93, and 104 of Appendix "A-1", which is hereby incorporated by reference). The Examiner notes that the Production Workflow reference shows utilizing a web browser for accessing information via a network such as an Internet, Intranet, and via mobile devices on the road (Production Workflow: Pages 27-29, 115, 377). Wherein the Production Workflow reference does not explicitly teach an extranet network or utilizing WAP, the Examiner notes that both features were well known in the art at the time of the invention and would have provided the system of Production Workflow the well known benefits of allowing customers/users controlled access to private/corporate data via the Intranet as well as providing interactive access to information wirelessly via mobile devices.

13. Claims 22-26, 28-37, 111-115, 117-126 and 139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Production Workflow (LEYMANN, FRANK, and ROLLER, DIETER, "Production Workflow Concepts and Techniques", Upper Saddle River: Prentice-Hall, Inc., July 30, 1999, 508 pgs., ISBN 0-13-021753-0) in view of Buhannic (U.S. Patent Application Pub. No. 2002/0038276).

-Regarding claims 22-26, 28-37, 111-115, 117-126 and 139, Production Workflow in view of Buhannic in further view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 106-114 of Appendix "A-2", which is hereby incorporated by reference). With regard to 22-26, 28-37, 111-115, 117-126 and 139, the Examiner additionally notes that the Buhannic reference taught the well-known functionality of

creating a redundant mirror arrangement of components in a client/server messaging system (Buhannic: Paragraph 14: "may be a plurality of similar nodes in...redundant mirror arrangement"). It would have been obvious to one of ordinary skill in the art at the time of the invention for certain components of the workflow messaging systems and database messaging systems of Production Workflow to have utilized redundant mirror arrangements as described in Buhannic, because Buhannic taught that said arrangement provided the benefit of system scalability as well as fail-safe operation (Buhannic: Paragraph 14: "provide scalability and/or fail-safe operation").

14. Claims 2, 38, 51-55, 57-60, 63-65, 67, 69, 71, 91, 127, 140-146, 149-151, 153, and 155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell (U.S. Patent No. 7,003,781).

-Regarding claims 2, 38, 51-55, 57-60, 63-65, 67, 69, 71, 91, 127, 140-146, 149-151, 153, and 155, Blackwell in view of one of ordinary skill in the art teaches each and every limitation of the claims (see the claim charts on pages 136-150 of Appendix "B-2", which is hereby incorporated by reference).

15. Claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over Advanced Workflow Solutions (AWS) (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00) in view of Leymann '111 (U.S. Patent No. 6,073,111).

-Regarding claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170, the combination of Advanced Workflow Solutions (AWS) and Leymann '111 teaches each and every limitation of the claims (see the claim charts on pages 198-201 of Appendix "C-2", which is hereby incorporated by reference). Further, the Examiner notes that it would have been obvious to combine the teachings of Leymann '111 with the FlowMark based workflow management system of Advanced Workflow Solutions (AWS), because the teachings of Leymann '111 were also based on IBM's FlowMark workflow management system (Leymann '111: column 7, lines 15-16) and provided the benefit of improving the integration of applications within workflow management systems (Leymann '111: column 4, lines 15-18).

16. Claims 52-55, 57, 58, 77, 78, 141-144, 161, and 162 are rejected under 35 U.S.C. 103(a) as being unpatentable over Advanced Workflow Solutions (AWS) (HOFFMANN, MARC, SHUTE, DAVID, and EBBERS, MIKE, "Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark", January 1999, 151 pgs., IBM Corp., NY, SG24-5371-00) in view of Leymann '633 (U.S. Patent No. 6,122,633).

-Regarding claims 52-55, 57, 58, 77, 78, 141-144, 161, and 162, the combination of Advanced Workflow Solutions (AWS) and Leymann '633 teaches each and every limitation of the claims (see the claim charts on pages 203-211 of Appendix "C-3", which is hereby incorporated by reference). Further, the Examiner notes that it would have been obvious to combine the teachings of Leymann '633 with the FlowMark based workflow management system of Advanced Workflow Solutions (AWS), because the teachings of Leymann '633 were also based on IBM's FlowMark workflow management system (Leymann '633: column 4, lines 35-37) and provided the benefit of extending workflow management systems with a performance

improved subscription for component processing stored audit trails (Leymann '633: column 3, lines 9-13 & 42-59).

Conclusion

THIS ACTION IS MADE FINAL.

A shortened statutory period for response to this action is set to expire 2 months from the mailing date of this action.

Extensions of time under 37 CFR 1.136(a) do not apply in reexamination proceedings. The provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Further, in 35 U.S.C. 305 and in 37 CFR 1.550(a), it is required that reexamination proceedings "will be conducted with special dispatch within the Office."

Extensions of time in reexamination proceedings are provided for in 37 CFR 1.550(c). A request for extension of time must be filed on or before the day on which a response to this action is due, and it must be accompanied by the petition fee set forth in 37 CFR 1.17(g). The mere filing of a request will not effect any extension of time. An extension of time will be granted only for sufficient cause, and for a reasonable time specified.

The filing of a timely first response to this final rejection will be construed as including a request to extend the shortened statutory period for an additional month, which will be granted even if previous extensions have been granted. In no event however, will the statutory period for response expire later than SIX MONTHS from the mailing date of the final action. See MPEP § 2265.

All correspondence relating to this ex parte reexamination proceeding should be directed as follows:

By U.S. Postal Service Mail to:

Mail Stop Ex Parte Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to:

(571) 273-9900
Central Reexamination Unit

By hand to:

Customer Service Window
Randolph Building
401 Dulany St.
Alexandria, VA 22314

By EFS-Web:

Registered users of EFS-Web may alternatively submit such correspondence via the electronic filing system EFS-Web, at

https://efs.uspto.gov/efile/myportal/efs-registered

EFS-Web offers the benefit of quick submission to the particular area of the Office that needs to act on the correspondence. Also, EFS-Web submissions are "soft scanned" (i.e., electronically uploaded) directly into the official file for the reexamination proceeding, which offers parties the opportunity to review the content of their submissions after the "soft scanning" process is complete.

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/Adam L Basehoar/

Primary Examiner, Art Unit 3992

Conferees:

/RSD/

Alexander Kosowski
Supervisor
Art Unit 3992

Ex Parte Reexamination Interview Summary	Control No.	Patent Under Reexamination
	90/009,960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) *ADAM BASEHOAR*	(3) *Rachna Desai*
(2) *Alexander Kosowski*	(4) *Joesph E. Chovanes & Vincent R. Cyr*

Date of Interview: *02 August 2012*

Type: a)☐ Telephonic b)☐ Video Conference
c)☒ Personal (copy given to: 1)☐ patent owner 2)☐ patent owner's representative)

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: *1*.

Identification of prior art discussed: *Production Workflow, Blackwell, Advanced Workflow Solutions (AWS), Buhannic, Leymann '111, and Leyman '633 references* .

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

/Adam L Basehoar/ Primary Examiner, Art Unit 3992		

cc: Requester (if third party requester)

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES

Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	11/28/2011	ALB
Reviewed Proposed Prior Art	5/16/2012	ALB
Reviewed Applied Prior Art	9/10/2012	ALB

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ Patent Owner ☒ Third Party
SPRINKLE IP LAW GROUP 1301 W. 25TH STREET SUITE 408 AUSTIN, TX 78705

LITIGATION REVIEW ☒	ALB (examiner initials)	09/10/2012 (date)
Case Name		Director Initials
2:11-cv-01609		
2:11-cv-00931		
2:11-cv-06602		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
1. None Found	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

AGENDA FOR AFTER FINAL INTERVIEW

PATENT OWNER, YYZ LLC, ("PO") of US Patent No. 7,603,674 (the " '674 patent" or the "patent") in the above identified reexamination hereby files this Agenda for After Final Interview.

This case and the related case 90/009,961 both share rejections of all claims (the "rejections".) Prior to filing PO's response and possible appeal in both cases, PO comes before both Examiners, pursuant to Supervisor Kosowski's direction to file this agenda, so that the following matters may be reviewed. Insofar as both rejections share art and language, PO respectfully suggests the Interview be with both Examiners and Supervisor Kowalski, as had been the prior Interview, held August 2, 2012, before Examiners Basehoar, Desai and Kosowski.

As an initial matter, PO notes the Buhannic reference (US Provisional Application No. 60/214,256) had not been previously cited by the Office. The Office had cited the Buhannic utility application publication (US Patent No. 2002/0038276) but that reference was not filed prior to the present application. The Office now has rejected the claims over the Buhannic provisional, on a final, which is essentially a new rejection on final on a new reference (the Buhannic provisional.) PO respectfully but strenuously

traverses the present posture of the cases therefore as it is at least unfair to be facing a new reference for the first time on a final rejection in a reexamination.

In the rejections in this case and the related case two limitations distinguish the claims at issue (the "claims") from the prior art cited by the Office: 1) "monitoring message" and 2) "central message repository."

Monitoring Message

Monitoring message is defined in the specification:

> A messaging component is added to the messaging broker, through methods known in the art. This messaging component creates a "monitoring" message for each original message received by the broker. This monitoring message contains, in this embodiment, specific data generated from the original messages passing between the sub-processes. The monitoring message with its data is then sent from the messaging broker to a central database repository or database (the terms "repository" or "database" are used interchangeably throughout.)

(Col. 3, lines 55-65.)

Central Message Repository

Central message repository is defined in the specification:

> This central message repository or database is comprised of intonation passing through the enterprise. In effect, the database provides a collection point or an "end point" for the asynchronous communications, and so allows the flexibility of asynchronous communications to be combined with the precision of synchronous communications. The database can be reviewed in any number of ways. For example, the database can be queried to obtain specific intonation about that particular order or customer or could be examined across larger time spans such as days, weeks, or months, to gauge trends or performance.

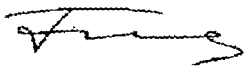
(Col. 3, lines 20-30.)

PO has put forth evidence and argument to distinguish the art because the monitoring message and central message repository limitations are not shown in the art cited by the Office, see, e.g., the Declaration of Dieter Roller introduced by PO. Mr. Roller is co-inventor and co-author on the plurality of the cited art, (1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques; 2) Leymann '633 - (U.S. Patent No. 6,122,633); 3) Leymann '111 - (U.S. Patent No. 6,073,111).

Mr. Roller states unequivocally in his declaration that the monitoring message and central message repository limitations are not shown in the art cited by the Office, and the Office, with all due respect, may have not quite perceived neither the Roller declaration nor the nature of the claimed limitations. Moreover, PO will show the remaining two references, those aside from the Roller references, Blackwell US Patent No. 7,003,781 and Buhannic, US Provisional Application No. 60/214,256, are distinguishable from the limitations as well.

Accordingly, and regard to all the art, PO will provide the Office with specific review of the limitations of the claims references above in light of the specific passages of the prior art cited by the Office and will respectfully show how those references do not mean what the Office would have them mean with regard to the above referenced limitations.

Respectfully Submitted,



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Electronic Acknowledgement Receipt

EFS ID:	14208895
Application Number:	90009960
International Application Number:	
Confirmation Number:	9422
Title of Invention:	APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES
First Named Inventor/Applicant Name:	7603674
Correspondence Address:	JOSEPH E. CHOVANES - 5 GREAT VALLEY PARKWAY SUITE 329 MALVERN PA 19355 US - -
Filer:	Joseph E. Chovanes
Filer Authorized By:	
Attorney Docket Number:	OPEN2200-1
Receipt Date:	13-NOV-2012
Filing Date:	07-NOV-2011
Time Stamp:	07:54:14
Application Type:	Reexam (Patent Owner)

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Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Reexam Miscellaneous Incoming Letter	960agda.pdf	76403 19e25a9180c80d7e4003431248d8b660ab1d5893	no	3

Warnings:	
Information:	
Total Files Size (in bytes):	76403

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Rachna Desai
Patent No. : 7,062,749
Filed : December 15, 2000
Control No. : 90/009,961
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : Prom RE-001

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

RESPONSE TO FINAL OFFICE ACTION

THE PATENT OWNER, YYZ LLC, of US Patent No. 7,062,749 (the " '749 patent" or the "patent") in the above identified reexamination, hereby timely files this Response, within the two month shortened period for response, to the final Office Action in the above captioned reexamination, dated September 18, 2012. (This response is being filed on the next business day after the Sunday expiration of the two month period.)

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held November 14, 2012, before Examiners Basehoar, Wassum and Kosowski in the above referenced examination. An Interview Summary is provided herewith.

The references in the case are:

1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques, Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (hereafter "Production Workflow").

2) US Patent No. 7,003,781 issued to Blackwell et al. (hereafter "Blackwell").

3) Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and

Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS").

4) Leymann '633 - (U.S. Patent No. 6,122,633, published 09/19/2000).

5) Leymann '111 - (U.S. Patent No. 6,073,111, published 06/06/2000).

6) US Patent No. 2002/0038276 issued to Buhannic et al. (hereafter "Buhannic").

As PO noted at the Interview, there are three limitations distinguishing the present invention as defined by the claims from the art before the Office: 1) messaging broker; 2) monitoring message; and 3) central message repository. PO submits that each of these limitations, which are shown and defined in the specification, limit the scope of the present invention as defined by the claims, and therefore make the claims patentable over the cited art.

Claim 1 of the '749 patent defines the invention of the claim as being:

1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:

providing, through a monitoring message, at least part of said original message data to a central message repository;

populating a transaction record in said central message repository with said original message data provided by said monitoring message;

wherein said original message data comprises the status of an activity.
.

"Monitoring message" is defined and limited in the specification as being created from a messaging component of a "messaging broker." *There is no other type of "message" claimed here. It is necessary for a messaging broker and a monitoring*

message to be present in order to practice the invention as taught by the claims. The monitoring message is then sent from the messaging broker to a central message repository or database. *Thus it is necessary for a central message repository, receiving data from a monitoring message, to be present in order to practice the invention s taught by the claims*. (*See, e.g.,* Figure 2, Col. 3, line 51 to Col. 4 line 67.)

In other words, the progression as taught by the specification and present claims is:

messaging broker→monitoring message→ central message repository

(Note also monitoring message is defined in terms of a messaging broker – without a messaging broker there can be no monitoring message. Thus, the messaging broker is present in the definition of monitoring message – even though the words "messaging broker" do not appear in the claims. Without a messaging broker however there can be no monitoring message. *Id.*)

Dieter Roller, co-author and co-inventor on the references, states flatly and without equivocation in his second declaration provided herewith that messaging brokers (also known as message brokers), monitoring messages and central message repositories are not found in the Workflow Technology references. His word and knowledge is probably unparalleled in this area. PO therefore, in light of the limitations contained in the specification and the claims with regard to the terms: 1) messaging brokers; 2) monitoring messages; and, 3) central message repositories, and the further exposition of Dieter Roller on the lack of those limitations in the Workflow Technology references, of which he was co-author and co-inventor, respectfully requests the claims in the present case be allowed over the Workflow Technology references of record.

Two other references are also in the case, Buhannic and Blackwell. Taking Buhannic first, the provisional in Buhannic shows, as the Office had noted, a messaging broker (60/214,256 at p. 9: "Explanation as to how the 'invention' actually works, i.e. technical description of the invention A JMS compliant message broker sits at the hub of this 'BUS'. There are several translation engines, which subscribe to messages coming from the various 'value added' services. These 'value added' services in turn subscribe to messages coming from users, requiring said services, also linked up to the JMS compliant message broker. In some cases there will not be any translation, from client to service, required, but in most cases a translation engine will consume the incoming 'request' or 'response' and translate it for the ultimate consumer; user or service.")

As PO had noted at the interview, Buhannic refers to a message broker, but *nowhere* refers to the monitoring message limitation of the present claims. And therefore Buhannic cannot have a central message repository either, as there is no monitoring message to populate that repository and so no ability to create the central messaging repository in Buhannic.

The Office refers to a State Model as providing status in Buhannic. (Office Action at 12, *citing* pp. 11-12 of Buhannic.) But that State Model has *nothing* to do with the message broker or a monitoring message and indeed appears to be original messages sent through the system for order execution: "In or several transaction servers, a 'state transition' process exists to maintain the state of an order to buy or sell a security. As it receives a message which indicates an intention to trade, it creates a state-model of this 'request', assigns it a proper 'state' (in this case "registered") and caches it to a backing storage device to ensure it's persistence. Upon receiving each subsequent message (valid

bid, execution, or cancellation) of this 'request', the state-transition process obtains its prior state, evaluates the new state of the trade based upon the message received, updates its state, and again caches it for future use." Buhannic at 12.)

With all due respect, that is not invalidating of the present claims at all – the State Model of Buhannic and its "messages" cannot be equated to a monitoring message nor central message repository of the present invention.

Finally, the Office has also cited Blackwell as an invalidating reference. As with the other references, Blackwell does not have either the monitoring message nor the central message repository of the present claims. The Blackwell sensors 14 intercept function or API calls and create an event from the calls: they do not create monitoring messages. (*See* Col. 5, lines 36-43: "FIG. 2 illustrates the control flow of the sensor 14. At step 210 an application 16 makes a function call belonging to the set of functions monitored by the associated sensor 14. In the preferred embodiment, at step 212, a tricoder function is invoked instead of the standard function. A tricoder function yields program control to the sensor 14 via path 201 for analyzer 10 related processing.")

Since as noted above with regard to the other references, without a monitoring message, there can be <u>no</u> central message repository. (*See also, e.g.,* Col. 5, lines 34-36 and Figure 1, where Blackwell notes specifically that a "local event database" 20 is attached to each analyzer 12 and is expressly called a "local event database" by Blackwell.)

Therefore, and with all due respect, PO respectfully traverses the rejections of the Office Action:

- under 35 U.S.C. 102(b) of claims 1-58 as being anticipated by Production Workflow;

- under 35 U.S.C. 102(b) of claims 1-6, 8-24, 27-31, 33-37, 42-45, 47-51, and 55-58 as being anticipated by AWS;

- under 35 U.S.C. 103(a) of claims 7, 18, 25-26, 40-41, and 46-47 as unpatentable over AWS in view of Leymann '111;

- under 35 U.S.C. 103(a) of claims 3-6, 8, 9, 29-30, 32, 39, 44, 51, 53 and 54 as unpatentable over AWS in view of Leymann '633;

- claims 1, 42, 55 and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Buhannic;

- 1-6, 8-11, 14-17, 19,21,42-43,45,48, 55, and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell; and,

- 22-24, 27, 31-34, 38, 47, 49, 50, 52, 54, and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell.

PO, submits, as shown above, that the limitations of 1) messaging brokers; 2) monitoring messages; and, 3) central message repositories common to all claims are nowhere in the references cited by the Office.

Therefore, in light of the above, Applicant respectfully requests the Office withdraw its rejections and permit a Certificate of Reexamination to issue confirming the validity of all claims of the '794 patent.

* * *

In the event and despite the above the Office does not conclude the Buhannic and Blackwell references are not invalidating art, PO provides the following alternative argument regarding diligence and reduction to practice.

PO had provided, in its prior response, declarations under 37 C.F.R. §1.131 of the inventors Vincent Cyr and Kenneth Fritz with attached exhibits. PO had also provided a declaration under 37 C.F.R. §1.132 of corroborating witness Matthew Franklin with

attached exhibits.

The Office Action stated the declarations and exhibits established a conception date but did not establish diligence nor a reduction to practice. (pp. 6-9.) PO respectfully traverses the finding of the Office.

As to diligence, PO respectfully submits the Office is incorrect in finding that the "Cyr, Fritz, and Franklin declarations are completely silent on the showing of facts of any evidence of diligence during the critical period." (p. 7). Rather, each of the declarations specially provides facts of evidence of diligence. (see, e.g., Fritz Declar. at ¶12: "I began work on the prototype immediately, and for the next six months, I worked on it almost daily, using the server at Promenix, including researching, writing code for messaging software and screen displays, running tests of the code and other usual and customary tasks to get a software prototype running. My work on the prototype was interrupted only by my need to work on Promenix's revenue generating business." Mr. Fritz therefore specifically notes he began work on the prototype almost immediately (which is a fact); for the next six months he worked on it almost daily using the server at Promenix (which are a number of facts including a recitation of facts regarding almost daily activities over six months); including researching during that six month period of almost daily work (facts); writing code for messaging software and screen displays during that six month period of almost daily work (facts); running tests of the code during that six month period of almost daily work (facts); and other usual and customary tasks to get a software prototype running during that six month period of almost daily work (facts). (See also Cyr Declar. at 18-21, Fritz Declar. at 12-15, Franklin Declar. at 15-18.)

The Office goes on to note that each of the submitted declarations make similar

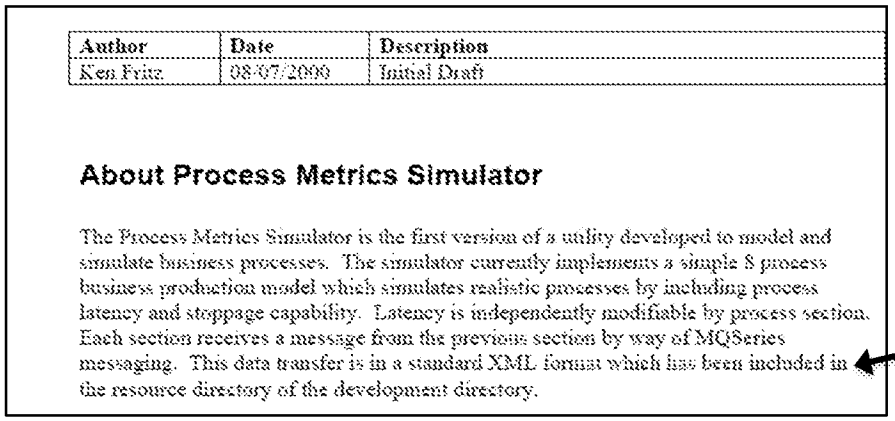
corroborating statements as to why there is an absence of any specific evidence of diligence during the critical period (Cyr Declaration: Paragraph 13; Fritz Declaration: Paragraphs 6-7; Franklin Declaration: Paragraph 10). But that is understandable as Promenix was a small business as the witnesses testified; the witnesses interacted almost daily. Moreover, the facts were of twelve years ago, so it is understandable why they would interact almost daily and have almost identical observations; there wasn't too much else to see in a small business such as Promenix.

Finally PO notes Exhibit C to the Fritz declaration is documentation of the first working prototype of the inventions of the independent claims of the patent. Ken Fritz notes at paragraph 14 of his declaration:

> I also showed Vince and Matt the prototype, as it worked and was existing on our server, and I specifically recall observing how monitoring messages could be used from a messaging system (e.g., IBM MQSeries) and provide at least part of said original message data to a record in a central message repository in order to identify the status of a business process and its various elements, in accordance with claim 1 and the other independent claims of the patent.

Moreover, each declarant notes they specifically recall observing the prototype function according to claim 1 of the present patent. (Cyr Declar. at 20-21, Fritz Declar. at 14-15, Franklin Declar. at 17-18.) Thus, it is respectfully submitted, the Office is not correct when it says as it did at page 8 of the Office Action that "Outside of the corroborating statements the declarations are silent on showing actual facts in the evidence that provide proof that the invention actually existed and worked for its intended purpose." Each declaration provides facts showing the invention worked for its

intended purpose. See also page 1 of Exhibit C:



Author	Date	Description
Ken Fritz	08/07/2000	Initial Draft

About Process Metrics Simulator

The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory.

Refers to messaging broker, monitoring message and message repository

As noted above, this argument regarding the critical dates is presented only in the alternative to PO's above arguments regarding all references failing to teach, suggest or refer to the limitations of the claims as noted above.

* * *

In view of the foregoing arguments, all claims are believed to be in condition for confirmation over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, PO reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. The absence of a reply to a specific rejection, issue or comment in the Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Respectfully Submitted,

/joseph e chovanes/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Rachna Desai
Patent No. : 7,062,749
Filed : December 15, 2000
Control No. : 90/009,961
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-001

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

SECOND DECLARATION UNDER 37 C.F.R. §1.132

I, Dieter Roller, make this second declaration in support of YYZ in the above identified reexamination, and do hereby declare the following:

1. I had previously signed a first declaration in this matter on August 12, 2012. (Exhibit A hereto.) All the statements I made therein remain true and correct.

2. "Messaging Broker Technology" as I used the term therein, and as taught by the '749 patent, includes three elements: 1) messaging brokers (also known as "message brokers"; 2) monitoring messages; and 3) central message repository. None of those elements are present in the "Workflow Technology" that I also discussed in my first declaration.

3. I have been engaged by YYZ, Inc. at a rate of €150 per hour, plus expenses, to provide my expertise in this matter. I have no contingent or other interest in any outcome in this matter.

4. My statements made and evidence given are done using my independent and professional judgment not contingent upon my engagement by YYZ, and are as complete, accurate, and unbiased as I can make them.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: November 6, 2012

Dieter Roller

DIETER ROLLER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Rachna Desai
Patent No. : 7,062,749
Filed : December 15, 2000
Control No. : 90/009,961
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : Prom RE-001

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

INTERVIEW SUMMARY

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held November 14, 2012, before Examiners Basehoar, Wassum and Kosowski in the above referenced examination. Vincent Cyr, coinventor, and the undersigned were also present. The Interview was primarily conducted in accordance with PO's proposed agenda, attached herewith and transmitted previously to the Office, and PO also raised the 37 C.F.R. §1.131 declarations and exhibits. As to the latter issue, the Office was kind enough to listen to PO's presentation despite PO not presenting it on PO's proposed agenda.

The undersigned also reviewed the teachings of U.S. Patents No. 7,603,674 and 7,062,749, following which the undersigned discussed the final Office Action dated September 19, 2012 and presented distinctions between the prior art references and the claims of the '674 and '749 patents. The '674 patent was primarily referenced but both patents share the limitations as to all claims that were specifically reviewed, 1) "messaging broker," 2) "monitoring message," and 3) "central database repository." PO

noted that those limitations, as defined and set forth in the specification of both patents, and as read into the claims of both patents as is proper under the law, are not shown in the prior art references.

The Office noted that the reading of the definitions of the limitations for each of 1) "messaging broker," 2) "monitoring message," and 3) "central database repository" from the specification into the claims of the patents may well be properly limiting and so distinguish the claims from the references before the Office, which, PO noted, do not have the limitations. Therefore, the Office may well issue of the Certificate of Reexamination requested by PO in order to conclude this Reexamination.

PO and the undersigned gratefully acknowledge the courtesy shown to them by the Examiners.

Respectfully Submitted,

/joseph e chovanes/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Rachna Desai
Patent No. : 7,062,749
Filed : December 15, 2000
Control No. : 90/009,961
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-001

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

AGENDA FOR AFTER FINAL INTERVIEW

PATENT OWNER, YYZ LLC, ("PO") of US Patent No. 7,062,749 (the " '749 patent" or the "patent") in the above identified reexamination hereby files this Agenda for After Final Interview.

This case and the related case 90/009,960 both share rejections of all claims (the "rejections".) Prior to filing PO's response and possible appeal in both cases, PO comes before both Examiners, pursuant to Supervisor Kosowski's direction to file this agenda, so that the following matters may be reviewed. Insofar as both rejections share art and language, PO respectfully suggests the Interview be with both Examiners and Supervisor Kowalski, as had been the prior Interview, held August 2, 2012, before Examiners Basehoar, Desai and Kosowski.

As an initial matter, PO notes the Buhannic reference (US Provisional Application No. 60/214,256) had not been previously cited by the Office. The Office had cited the Buhannic utility application publication (US Patent No. 2002/0038276) but that reference was not filed prior to the present application. The Office now has rejected the claims over the Buhannic provisional, on a final, which is essentially a new rejection on final on a new reference (the Buhannic provisional.) PO respectfully but strenuously

traverses the present posture of the cases therefore as it is at least unfair to be facing a new reference for the first time on a final rejection in a reexamination.

In the rejections in this case and the related case two limitations distinguish the claims at issue (the "claims") from the prior art cited by the Office: 1) "monitoring message" and 2) "central message repository."

Monitoring Message

Monitoring message is defined in the specification:

> A messaging component is added to the messaging broker, through methods known in the art. This messaging component creates a "monitoring" message for each original message received by the broker. This monitoring message contains, in this embodiment, specific data generated from the original messages passing between the sub-processes. The monitoring message with its data is then sent from the messaging broker to a central database repository or database (the terms "repository" or "database" are used interchangeably throughout.)

(Col. 3, lines 55-65.)

Central Message Repository

Central message repository is defined in the specification:

> This central message repository or database is comprised of intonation passing through the enterprise. In effect, the database provides a collection point or an "end point" for the asynchronous communications, and so allows the flexibility of asynchronous communications to be combined with the precision of synchronous communications. The database can be reviewed in any number of ways. For example, the database can be queried to obtain specific intonation about that particular order or customer or could be examined across larger time spans such as days, weeks, or months, to gauge trends or performance.

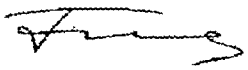
(Col. 3, lines 20-30.)

PO has put forth evidence and argument to distinguish the art because the monitoring message and central message repository limitations are not shown in the art cited by the Office, see, e.g., the Declaration of Dieter Roller introduced by PO. Mr. Roller is co-inventor and co-author on the plurality of the cited art, (1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques; 2) Leymann '633 - (U.S. Patent No. 6,122,633); 3) Leymann '111 - (U.S. Patent No. 6,073,111).

Mr. Roller states unequivocally in his declaration that the monitoring message and central message repository limitations are not shown in the art cited by the Office, and the Office, with all due respect, may have not quite perceived neither the Roller declaration nor the nature of the claimed limitations. Moreover, PO will show the remaining two references, those aside from the Roller references, Blackwell US Patent No. 7,003,781 and Buhannic, US Provisional Application No. 60/214,256, are distinguishable from the limitations as well.

Accordingly, and regard to all the art, PO will provide the Office with specific review of the limitations of the claims references above in light of the specific passages of the prior art cited by the Office and will respectfully show how those references do not mean what the Office would have them mean with regard to the above referenced limitations.

Respectfully Submitted,



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CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a copy of the enclosed documents was served according to 37 C.F.R. § 1.248 and MPEP 2249 on the requester in this reexamination by first class mail on November 19, 2012:

Ariyeh Akmal
Sprinkle IP Law Group
1301 West 25th Street, Suite 408
Austin, Texas 78705
Tel. (512) 637-9220
Fax. (512) 371-9088

Respectfully Submitted,

/joseph e chovanes/

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Electronic Acknowledgement Receipt

EFS ID:	14269067
Application Number:	90009960
International Application Number:	
Confirmation Number:	9422
Title of Invention:	APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES
First Named Inventor/Applicant Name:	7603674
Correspondence Address:	JOSEPH E. CHOVANES - 5 GREAT VALLEY PARKWAY SUITE 329 MALVERN PA 19355 US - -
Filer:	Joseph E. Chovanes
Filer Authorized By:	
Attorney Docket Number:	OPEN2200-1
Receipt Date:	19-NOV-2012
Filing Date:	07-NOV-2011
Time Stamp:	18:05:00
Application Type:	Reexam (Patent Owner)

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	Reexam Response to Final Rejection	961fnlr.pdf	171634 62ee73e7bc24072a7091e5eb9f2671b0921a915b	no	10
Warnings:					
Information:					
2	Rule 130, 131 or 132 Affidavits	961dr2.pdf	470180 c3f0e6aec9ab930aa5fa42cb09ff1e2295aa94e4	no	2
Warnings:					
Information:					
3	Applicant summary of interview with examiner	961ints.pdf	1430190 3d373b226394f391552942321d3e959c7c987979	no	5
Warnings:					
Information:					
4	Reexam Certificate of Service	certserv.pdf	63576 498aa386f5610425ea06ad4f9c1ddd06dcaae4fe	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	2135580		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

RESPONSE TO FINAL OFFICE ACTION

THE PATENT OWNER, YYZ LLC, of US Patent No. 7,603,674 (the " '674 patent" or the "patent") in the above identified reexamination, hereby timely files this Response, within the two month shortened period set for response, to the final Office Action in the above captioned reexamination, dated September 19, 2012.

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held November 14, 2012, before Examiners Basehoar, Wassum and Kosowski in the above referenced examination. An Interview Summary is provided herewith.

The references in the case are:

1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques, Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (hereafter "Production Workflow").

2) US Patent No. 7,003,781 issued to Blackwell et al. (hereafter "Blackwell").

3) Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS").

4) Leymann '633 - (U.S. Patent No. 6,122,633, published 09/19/2000).

5) Leymann '111 - (U.S. Patent No. 6,073,111, published 06/06/2000).

6) US Patent No. 2002/0038276 issued to Buhannic et al. (hereafter "Buhannic").

As PO noted at the Interview, there are three limitations distinguishing the present invention as defined by the claims from the art before the Office: 1) messaging broker; 2) monitoring message; and 3) central message repository. PO submits that each of these limitations, which are shown and defined in the specification, limit the scope of the present invention as defined by the claims, and therefore make the claims patentable over the cited art.

Claim 1 of the '674 patent defines the invention of the claim as being:

> 1. A computerized method for use in an asynchronous messaging environment, wherein said messaging environment comprises at least one original message comprised of original message data, comprising:
>
> providing, through a monitoring message, at least part of said original message data to a central message repository;
>
> populating a transaction record in said central message repository with said original message data provided by said monitoring message wherein said original message data comprises status information of at least one action selected from the group consisting of activity, sub process and process; and,
>
> retrieving information from the central message repository.

"Monitoring message" is defined and limited in the specification as being created from a messaging component of a "messaging broker." *There is no other type of "message" claimed here. It is necessary for a messaging broker and a monitoring message to be present in order to practice the invention as taught by the claims*. The monitoring message is then sent from the messaging broker to a central message

repository or database. *Thus it is necessary for a central message repository, receiving data from a monitoring message, to be present in order to practice the invention s taught by the claims*. (*See, e.g.,* Figure 2, Col. 3, line 51 to Col. 4 line 67.)

In other words, the progression as taught by the specification and present claims is:

messaging broker→monitoring message→ central message repository

(Note also monitoring message is defined in terms of a messaging broker – without a messaging broker there can be no monitoring message. Thus, the messaging broker is present in the definition of monitoring message – even though the words "messaging broker" do not appear in the claims. Without a messaging broker however there can be no monitoring message. *Id.*)

Dieter Roller, co-author and co-inventor on the references, states flatly and without equivocation in his second declaration provided herewith that messaging brokers (also known as message brokers), monitoring messages and central message repositories are not found in the Workflow Technology references. His word and knowledge is probably unparalleled in this area. PO therefore, in light of the limitations contained in the specification and the claims with regard to the terms: 1) messaging brokers; 2) monitoring messages; and, 3) central message repositories, and the further exposition of Dieter Roller on the lack of those limitations in the Workflow Technology references, of which he was co-author and co-inventor, respectfully requests the claims in the present case be allowed over the Workflow Technology references of record.

Two other references are also in the case, Buhannic and Blackwell. Taking Buhannic first, the provisional in Buhannic shows, as the Office had noted, a messaging

broker (60/214,256 at p. 9: "Explanation as to how the 'invention' actually works, i.e. technical description of the invention A JMS compliant message broker sits at the hub of this 'BUS'. There are several translation engines, which subscribe to messages coming from the various 'value added' services. These 'value added' services in turn subscribe to messages coming from users, requiring said services, also linked up to the JMS compliant message broker. In some cases there will not be any translation, from client to service, required, but in most cases a translation engine will consume the incoming 'request' or 'response' and translate it for the ultimate consumer; user or service.")

As PO had noted at the interview, Buhannic refers to a message broker, but *nowhere* refers to the monitoring message limitation of the present claims. And therefore Buhannic cannot have a central message repository either, as there is no monitoring message to populate that repository and so no ability to create the central messaging repository in Buhannic.

The Office refers to a State Model as providing status in Buhannic. (Office Action at 12, *citing* pp. 11-12 of Buhannic.) But that State Model has *nothing* to do with the message broker or a monitoring message and indeed appears to be original messages sent through the system for order execution: "In or several transaction servers, a 'state transition' process exists to maintain the state of an order to buy or sell a security. As it receives a message which indicates an intention to trade, it creates a state-model of this 'request', assigns it a proper 'state' (in this case "registered") and caches it to a backing storage device to ensure it's persistence. Upon receiving each subsequent message (valid bid, execution, or cancellation) of this 'request', the state-transition process obtains its prior state, evaluates the new state of the trade based upon the message received, updates

its state, and again caches it for future use." Buhannic at 12.)

With all due respect, that is not invalidating of the present claims at all – the State Model of Buhannic and its "messages" cannot be equated to a monitoring message nor central message repository of the present invention.

Finally, the Office has also cited Blackwell as an invalidating reference. As with the other references, Blackwell does not have either the monitoring message nor the central message repository of the present claims. The Blackwell sensors 14 intercept function or API calls and create an event from the calls: they do not create monitoring messages. (*See* Col. 5, lines 36-43: "FIG. 2 illustrates the control flow of the sensor 14. At step 210 an application 16 makes a function call belonging to the set of functions monitored by the associated sensor 14. In the preferred embodiment, at step 212, a tricoder function is invoked instead of the standard function. A tricoder function yields program control to the sensor 14 via path 201 for analyzer 10 related processing.")

Since as noted above with regard to the other references, without a monitoring message, there can be <u>no</u> central message repository. (*See also, e.g.,* Col. 5, lines 34-36 and Figure 1, where Blackwell notes specifically that a "local event database" 20 is attached to each analyzer 12 and is expressly called a "local event database" by Blackwell.)

Therefore, and with all due respect, PO respectfully traverses the rejections of the Office Action:

- under 35 U.S.C. 102(b) of claims 1-18, 20, 38, 39, 41-49, 51-86, 88, 90-107, 109, 127, 128, 130-138, 140-170, 172 and 173 as being anticipated by Production Workflow;

- under 35 U.S.C. 102(b) of claims 1-18, 20, 22-41, 44, 46-55, 57-72, 75-82, 88-107, 109, 111-130, 133, 135-156, 159-166 and 172-173 as being

anticipated by AWS;

- under 35 U.S.C. 103(a) of claims 19, 21, 40, 50, 87, 89, 108, 110, 129, 139, and 171 as unpatentable over of Production Workflow;

- under 35 U.S.C. 103(a) of claims 56, 68, 73, 74, 85, 86, 157, 158, 169, and 170 as unpatentable over AWS in view of Leymann '111;

- under 35 U.S.C. 103(a) of claims 52-55, 57, 58, 77, 78, 141-144, 161, and 162 as unpatentable over AWS in view of Leymann '633;

- claims 1, 46, 51, 70, 135, 140, and 154 are rejected under 35 U.S.C. 102(e) as being anticipated by Buhannic;

- claims 22-26, 28-37, 111-115, 117-126 and 139, are rejected under 35 U.S.C. 103(a) under Production Workflow in view of Buhannic;

- 1, 3, 5-7, 10-13, 15, 17-18, 41, 44, 46-48, 70, 72, 75, 77, 79, 90, 92, 94-96, 99-102, 104, 106-107, 109, 130, 133, 135-137, 154, 156, 159, 161, 163, and 172-173 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell; and,

- 2, 38, 51-55, 57-60, 63-65, 67, 69, 71, 91, 127, 140-146, 149-151, 153, and 155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackwell.

PO, submits, as shown above, that the limitations of 1) messaging brokers; 2) monitoring messages; and, 3) central message repositories common to all claims are nowhere in the references cited by the Office.

Therefore, in light of the above, Applicant respectfully requests the Office withdraw its rejections and permit a Certificate of Reexamination to issue confirming the validity of all claims of the '674 patent.

* * *

In the event and despite the above the Office does not conclude the Buhannic and Blackwell references are not invalidating art, PO provides the following alternative argument regarding diligence and reduction to practice.

PO had provided, in its prior response, declarations under 37 C.F.R. §1.131 of the

inventors Vincent Cyr and Kenneth Fritz with attached exhibits. PO had also provided a declaration under 37 C.F.R. §1.132 of corroborating witness Matthew Franklin with attached exhibits.

The Office Action stated the declarations and exhibits established a conception date but did not establish diligence nor a reduction to practice. (pp. 6-9.) PO respectfully traverses the finding of the Office.

As to diligence, PO respectfully submits the Office is incorrect in finding that the "Cyr, Fritz, and Franklin declarations are completely silent on the showing of facts of any evidence of diligence during the critical period." (p. 7). Rather, each of the declarations specially provides facts of evidence of diligence. (see, e.g., Fritz Declar. at ¶12: "I began work on the prototype immediately, and for the next six months, I worked on it almost daily, using the server at Promenix, including researching, writing code for messaging software and screen displays, running tests of the code and other usual and customary tasks to get a software prototype running. My work on the prototype was interrupted only by my need to work on Promenix's revenue generating business." Mr. Fritz therefore specifically notes he began work on the prototype almost immediately (which is a fact); for the next six months he worked on it almost daily using the server at Promenix (which are a number of facts including a recitation of facts regarding almost daily activities over six months); including researching during that six month period of almost daily work (facts); writing code for messaging software and screen displays during that six month period of almost daily work (facts); running tests of the code during that six month period of almost daily work (facts); and other usual and customary tasks to get a software prototype running during that six month period of almost daily work (facts).

(See also Cyr Declar. at 18-21, Fritz Declar. at 12-15, Franklin Declar. at 15-18.)

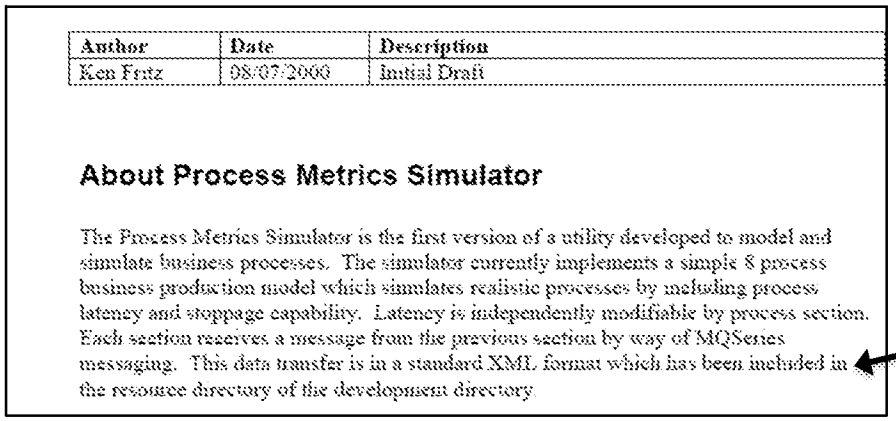
The Office goes on to note that each of the submitted declarations make similar corroborating statements as to why there is an absence of any specific evidence of diligence during the critical period (Cyr Declaration: Paragraph 13; Fritz Declaration: Paragraphs 6-7; Franklin Declaration: Paragraph 10). But that is understandable as Promenix was a small business as the witnesses testified; the witnesses interacted almost daily. Moreover, the facts were of twelve years ago, so it is understandable why they would interact almost daily and have almost identical observations; there wasn't too much else to see in a small business such as Promenix.

Finally PO notes Exhibit C to the Fritz declaration is documentation of the first working prototype of the inventions of the independent claims of the patent. Ken Fritz notes at paragraph 14 of his declaration:

> I also showed Vince and Matt the prototype, as it worked and was existing on our server, and I specifically recall observing how monitoring messages could be used from a messaging system (e.g., IBM MQSeries) and provide at least part of said original message data to a record in a central message repository in order to identify the status of a business process and its various elements, in accordance with claim 1 and the other independent claims of the patent.

Moreover, each declarant notes they specifically recall observing the prototype function according to claim 1 of the present patent. (Cyr Declar. at 20-21, Fritz Declar. at 14-15, Franklin Declar. at 17-18.) Thus, it is respectfully submitted, the Office is not correct when it says as it did at page 8 of the Office Action that "Outside of the corroborating statements the declarations are silent on showing actual facts in the

evidence that provide proof that the invention actually existed and worked for its intended purpose." Each declaration provides facts showing the invention worked for its intended purpose. See also page 1 of Exhibit C:



Author	Date	Description
Ken Fritz	08/07/2000	Initial Draft

About Process Metrics Simulator

The Process Metrics Simulator is the first version of a utility developed to model and simulate business processes. The simulator currently implements a simple 8 process business production model which simulates realistic processes by including process latency and stoppage capability. Latency is independently modifiable by process section. Each section receives a message from the previous section by way of MQSeries messaging. This data transfer is in a standard XML format which has been included in the resource directory of the development directory.

Refers to messaging broker, monitoring message and message repository

As noted above, this argument regarding the critical dates is presented only in the alternative to PO's above arguments regarding all references failing to teach, suggest or refer to the limitations of the claims as noted above.

* * *

In view of the foregoing arguments, all claims are believed to be in condition for confirmation over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, PO reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. The absence of a reply to a specific rejection, issue or comment in the Office Action does not signify agreement with or concession of that rejection, issue or

comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Respectfully Submitted,

/joseph e chovanes/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

SECOND DECLARATION UNDER 37 C.F.R. §1.132

I, Dieter Roller, make this second declaration in support of YYZ in the above identified reexamination, and do hereby declare the following:

1. I had previously signed a first declaration in this matter on August 12, 2012. (Exhibit A hereto.) All the statements I made therein remain true and correct.

2. "Messaging Broker Technology" as I used the term therein, and as taught by the '674 patent, includes three elements: 1) messaging brokers (also known as "message brokers"; 2) monitoring messages; and 3) central message repository. None of those elements are present in the "Workflow Technology" that I also discussed in my first declaration.

3. I have been engaged by YYZ, Inc. at a rate of €150 per hour, plus expenses, to provide my expertise in this matter. I have no contingent or other interest in any outcome in this matter.

4. My statements made and evidence given are done using my independent and

professional judgment not contingent upon my engagement by YYZ, and are as complete, accurate, and unbiased as I can make them.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and thus such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: November 18, 2012 Dieter Roller

DIETER ROLLER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

INTERVIEW SUMMARY

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held November 14, 2012, before Examiners Basehoar, Wassum and Kosowski in the above referenced examination. Vincent Cyr, coinventor, and the undersigned were also present. The Interview was primarily conducted in accordance with PO's proposed agenda, attached herewith and transmitted previously to the Office, and PO also raised the 37 C.F.R. §1.131 declarations and exhibits. As to the latter issue, the Office was kind enough to listen to PO's presentation despite PO not presenting it on PO's proposed agenda.

The undersigned also reviewed the teachings of U.S. Patents No. 7,603,674 and 7,062,749, following which the undersigned discussed the final Office Action dated September 19, 2012 and presented distinctions between the prior art references and the claims of the'674 and '749 patents. The '674 patent was primarily referenced but both patents share the limitations as to all claims that were specifically reviewed, 1) "messaging broker," 2) "monitoring message," and 3) "central database repository." PO noted that those limitations, as defined and set forth in the specification of both patents,

and as read into the claims of both patents as is proper under the law, are not shown in the prior art references.

The Office noted that the reading of the definitions of the limitations for each of 1) "messaging broker," 2) "monitoring message," and 3) "central database repository" from the specification into the claims of the patents may well be properly limiting and so distinguish the claims from the references before the Office, which, PO noted, do not have the limitations. Therefore, the Office may well issue of the Certificate of Reexamination requested by PO in order to conclude this Reexamination.

PO and the undersigned gratefully acknowledge the courtesy shown to them by the Examiners.

Respectfully Submitted,

/joseph e chovanes/

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
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Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

AGENDA FOR AFTER FINAL INTERVIEW

PATENT OWNER, YYZ LLC, ("PO") of US Patent No. 7,603,674 (the " '674 patent" or the "patent") in the above identified reexamination hereby files this Agenda for After Final Interview.

This case and the related case 90/009,961 both share rejections of all claims (the "rejections".) Prior to filing PO's response and possible appeal in both cases, PO comes before both Examiners, pursuant to Supervisor Kosowski's direction to file this agenda, so that the following matters may be reviewed. Insofar as both rejections share art and language, PO respectfully suggests the Interview be with both Examiners and Supervisor Kowalski, as had been the prior Interview, held August 2, 2012, before Examiners Basehoar, Desai and Kosowski.

As an initial matter, PO notes the Buhannic reference (US Provisional Application No. 60/214,256) had not been previously cited by the Office. The Office had cited the Buhannic utility application publication (US Patent No. 2002/0038276) but that reference was not filed prior to the present application. The Office now has rejected the claims over the Buhannic provisional, on a final, which is essentially a new rejection on final on a new reference (the Buhannic provisional.) PO respectfully but strenuously

traverses the present posture of the cases therefore as it is at least unfair to be facing a new reference for the first time on a final rejection in a reexamination.

In the rejections in this case and the related case two limitations distinguish the claims at issue (the "claims") from the prior art cited by the Office: 1) "monitoring message" and 2) "central message repository."

Monitoring Message

Monitoring message is defined in the specification:

> A messaging component is added to the messaging broker, through methods known in the art. This messaging component creates a "monitoring" message for each original message received by the broker. This monitoring message contains, in this embodiment, specific data generated from the original messages passing between the sub-processes. The monitoring message with its data is then sent from the messaging broker to a central database repository or database (the terms "repository" or "database" are used interchangeably throughout.)

(Col. 3, lines 55-65.)

Central Message Repository

Central message repository is defined in the specification:

> This central message repository or database is comprised of intonation passing through the enterprise. In effect, the database provides a collection point or an "end point" for the asynchronous communications, and so allows the flexibility of asynchronous communications to be combined with the precision of synchronous communications. The database can be reviewed in any number of ways. For example, the database can be queried to obtain specific intonation about that particular order or customer or could be examined across larger time spans such as days, weeks, or months, to gauge trends or performance.

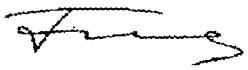
(Col. 3, lines 20-30.)

PO has put forth evidence and argument to distinguish the art because the monitoring message and central message repository limitations are not shown in the art cited by the Office, see, e.g., the Declaration of Dieter Roller introduced by PO. Mr. Roller is co-inventor and co-author on the plurality of the cited art, (1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques; 2) Leymann '633 - (U.S. Patent No. 6,122,633); 3) Leymann '111 - (U.S. Patent No. 6,073,111).

Mr. Roller states unequivocally in his declaration that the monitoring message and central message repository limitations are not shown in the art cited by the Office, and the Office, with all due respect, may have not quite perceived neither the Roller declaration nor the nature of the claimed limitations. Moreover, PO will show the remaining two references, those aside from the Roller references, Blackwell US Patent No. 7,003,781 and Buhannic, US Provisional Application No. 60/214,256, are distinguishable from the limitations as well.

Accordingly, and regard to all the art, PO will provide the Office with specific review of the limitations of the claims references above in light of the specific passages of the prior art cited by the Office and will respectfully show how those references do not mean what the Office would have them mean with regard to the above referenced limitations.

Respectfully Submitted,



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CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a copy of the enclosed documents was served according to 37 C.F.R. § 1.248 and MPEP 2249 on the requester in this reexamination by first class mail on November 19, 2012:

Ariyeh Akmal
Sprinkle IP Law Group
1301 West 25th Street, Suite 408
Austin, Texas 78705
Tel. (512) 637-9220
Fax. (512) 371-9088

Respectfully Submitted,

/joseph e chovanes/

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Electronic Acknowledgement Receipt

EFS ID:	14269252
Application Number:	90009960
International Application Number:	
Confirmation Number:	9422
Title of Invention:	APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES
First Named Inventor/Applicant Name:	7603674
Correspondence Address:	JOSEPH E. CHOVANES - 5 GREAT VALLEY PARKWAY SUITE 329 MALVERN PA 19355 US - -
Filer:	Joseph E. Chovanes
Filer Authorized By:	
Attorney Docket Number:	OPEN2200-1
Receipt Date:	19-NOV-2012
Filing Date:	07-NOV-2011
Time Stamp:	18:14:43
Application Type:	Reexam (Patent Owner)

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	Reexam Response to Final Rejection	960fnlr.pdf	171990 82787a0f87622879b44461a2887e3694ef1db45e	no	10
Warnings:					
Information:					
2	Rule 130, 131 or 132 Affidavits	960dr2d.pdf	531222 3b34c348dffe252f025d5433c9a85065f66f515b	no	2
Warnings:					
Information:					
3	Applicant summary of interview with examiner	960ints.pdf	1511493 a1d38a10049fdc95b408d2a24a01ea71c369fe2e	no	5
Warnings:					
Information:					
4	Reexam Certificate of Service	certserv.pdf	63599 09f5a3edecc968f453d84ed377b8b4783d9c0254	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	2278304		

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

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/009,960	11/07/2011	7603674	OPEN2200-1	9422

7590 01/04/2013

JOSEPH E. CHOVANES
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EXAMINER	
BASEHOAR, ADAM L	

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
01/04/2013	PAPER

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.

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SPRINKLE IP LAW GROUP

1301 W. 25TH STREET

SUITE 408

AUSTIN, TX 78705

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/009,960*.

PATENT NO. *7603674*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Notice of Intent to Issue Ex Parte Reexamination Certificate	Control No.	Patent Under Reexamination
	90/009,960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

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

1. ☒ Prosecution on the merits is (or remains) closed in this *ex parte* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. *Cf.* 37 CFR 1.313(a). A Certificate will be issued in view of
   (a) ☒ Patent owner's communication(s) filed: *19 November 2012*.
   (b) ☐ Patent owner's failure to file an appropriate timely response to the Office action mailed: _____.
   (c) ☐ Patent owner's failure to timely file an Appeal Brief (37 CFR 41.31).
   (d) ☐ The decision on appeal by the ☐ Board of Patent Appeals and Interferences ☐ Court dated _____
   (e) ☐ Other: _____.
2. The Reexamination Certificate will indicate the following:
   (a) Change in the Specification: ☐ Yes ☒ No
   (b) Change in the Drawing(s): ☐ Yes ☒ No
   (c) Status of the Claim(s):
      (1) Patent claim(s) confirmed: *1-173*.
      (2) Patent claim(s) amended (including dependent on amended claim(s)): _____
      (3) Patent claim(s) canceled: _____.
      (4) Newly presented claim(s) patentable: _____.
      (5) Newly presented canceled claims: _____.
      (6) Patent claim(s) ☐ previously ☐ currently disclaimed: _____
      (7) Patent claim(s) not subject to reexamination: _____.
3. ☒ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."
4. ☐ Note attached NOTICE OF REFERENCES CITED (PTO-892).
5. ☐ Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).
6. ☐ The drawing correction request filed on _____ is: ☐ approved ☐ disapproved.
7. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   ☐ been received.
   ☐ not been received.
   ☐ been filed in Application No. _____.
   ☐ been filed in reexamination Control No. _____.
   ☐ been received by the International Bureau in PCT Application No. _____.

   * Certified copies not received: _____.
8. ☐ Note attached Examiner's Amendment.
9. ☒ Note attached Interview Summary (PTO-474).
10. ☐ Other: _____.

All correspondence relating to this reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

/Adam L Basehoar/
Primary Examiner, Art Unit 3992

cc: Requester (if third party requester)

DETAILED ACTION

1. This Office action addresses claims 1-173 of United States Patent Number 7,603,674 B2 (Cyr et al), for which it has been determined in the Order Granting Ex Parte Reexamination (hereafter the "Order") mailed 12/01/2011 that a substantial new question of patentability was raised in the Request for Ex Parte reexamination filed on 11/07/2011 (hereafter the "Request"). This is a response to the Patent Owner's (PO) entered Response to Final Office Action filed 11/19/2012. In view of PO's response, as discussed below in the Response to Arguments and Statement of Reasons for Patentability and/or Confirmation sections, original claims 1-173 are confirmed.

Response to Arguments

2. Patent Owner's arguments and the second Dieter Roller 1.132 Declaration, each filed on 11/19/2012, have been fully considered and are discussed below with regard to the rejections as set forth in the Final Office action mailed 09/19/2012.

In view of the Interview held 11/14/2012, PO initially argues that each limitation of a messaging broker, monitoring message, and central message repository limit the scope of the present invention as defined by the claims (Response To Final Office Action: Pages 2-3). PO states that the claimed monitoring message is defined and limited in the specification as being created from a messaging component of a messaging broker. PO further states that no other type of message is being claimed here and that "It is necessary for a messaging broker and a monitoring message to be present in order to practice the invention as taught in the claims." With regard to the central message repository, PO similarly states that "it is necessary for a

central message repository, receiving data from a monitoring message, to be present in order to practice the invention as taught by the claims." Finally, PO unequivocally states that since a monitoring message is defined in terms of a messaging broker, there can be no monitoring message without a messaging broker.

The Examiner agrees with PO's definition of a monitoring message and its relationship with a messaging broker and central message repository. The specification makes it clear that a monitoring message must be generated by a messaging component of a centralized messaging broker (See Specification: Fig 2; column 3, line 56-column 4, line 23: "messaging component is added to the messaging broker...This messaging component creates a 'monitoring' message for each original message received by the broker…messaging broker receives the message…it will create a monitoring message."), said generated monitoring message then being sent to the central message repository by said message broker (See Specification: column 3, lines 61-63). Therefore, a messaging broker component is fundamentally necessary to be present in order to practice the invention as taught in the claims. As such, said definition will be applied below when discussing PO's additional arguments to the claims as they specifically relate to the applied references.

The 1.132 Dieter Roller Declarations

As previously discussed in the Final Office Action (09/18/12), the first Roller Declaration filed 08/14/12 attempted to differentiate the Production Workflow and AWS references (i.e., labeled "Workflow Technology") from the claims of the '674 patent (i.e., labeled "Message Broker Technology"), summarizing that the utilized Workflow Technology did not teach or

suggest the claimed monitoring message and message repository (First Roller Declaration: Paragraphs 11-19 & 23). The expert Dieter Roller being directly connected with a plurality of the applied references such as Production Workflow, AWS, and the two Leymann references (First Roller Declaration: Paragraphs 6-10). The second Roller Declaration expounded on the definition described above, stating that the Message Broker Technology previously discussed in the first declaration must include messaging brokers and that the Workflow Technology previously discussed in the first declaration did not teach said feature (Second Roller Declaration: Paragraph 2: "None of those elements are present in the "Workflow Technology" that I also discussed in the my first declaration.")

PO presents corresponding arguments in light of the second Roller Declaration, stating that in light of the limitations contained in the specification and the claims and in view of the Roller declarations, that the Workflow Technology references clearly lack the limitations of messaging brokers, monitoring messages, and central message repositories (Response To Final Office Action: Page 3). In light of PO's arguments and the factual evidence submitted in the second Roller Declaration as related to the definition discussed above, the Examiner agrees with PO. The Workflow Technology as described in the Production Workflow, AWS, Leymann '111, and Leymann '633 references does not appear to specifically teach the necessary messaging broker creating monitoring messages for populating a central message repository.

Thus, the rejections involving the Production Workflow, AWS, Leymann '111, and Leymann '633 references are withdrawn.

The Buhannic Reference

With regard to the Buhannic reference the PO argues, via the Buhannic reference's priority claim to provisional application No. 60/214,256, that the cited "State Model has nothing to do with the message broker or a monitoring message and indeed appears to be original messages sent through the system for order execution" (Response To Final Office Action: Pages 4-5). PO further states that the State Model of Buhannic and its "messages" cannot be equated to a monitoring message nor central message repository of the present invention. In light of PO's arguments and upon further examination of Buhannic in view of the definition discussed above, the Examiner agrees with PO. While Buhannic clearly teaches a Message Broker Server that receives original messages communicating between various local and external servers, Buhannic does not clearly teach wherein the Message Broker Server creates the claimed monitoring message. At best Buhannic appears to disclose generating a state model in a database that is a dynamic record of a transaction based on received original messages. It is not clear from Buhannic that the Message Broker Server creates a monitoring message as required by the claims in order to create and/or update the state model based on original messages.

Thus, the rejections involving the Buhannic reference are withdrawn.

The Blackwell Reference

With regard to the Blackwell reference, PO argues that Blackwell does not teach or suggest a monitoring message or a central message repository (Response To Final Office Action: Page 5). PO argues that the sensors 14 of Blackwell intercept function or API calls and create an event from the calls, but they do not create monitoring messages. In light of PO's arguments and upon further examination of Blackwell in view of the definition discussed above, the Examiner

agrees with PO. Blackwell teaches a plurality of sensors in a distributed data processing system, wherein the sensors act as agents that reside in the space of a monitored application and operate to collect information on calls that particular sensor is monitoring (Blackwell: column 4, lines 55-62; column 5, lines 14-35). Blackwell further teaches that each sensor is associated with filter rules that determine the conditions which trigger event generation/reporting as well as the amount of information to be collected (Blackwell: column 5, lines 50-56; column 15, lines 28-45). However, the plurality of sensors of Blackwell cannot reasonably be equated with a messaging component of the centralized messaging broker of the invention necessary to create monitoring messages and therefore the event data generated by the sensors are by definition not monitoring messages as required by the claims.

Thus, the rejections involving the Blackwell reference are withdrawn.

The Cyr, Fritz, and Franklin 1.131 & 1.132 Declarations – Swearing Back of References

With regard to the previously filed Cyr, Fritz, and Franklin declarations, the PO further and alternatively argues (Response To Final Office Action: Pages 6-9) that said declarations help antedate the Buhannic and Blackwell references by clearly establishing both diligence and an actual reduction to practice. The Examiner notes that PO's arguments to this point are considered moot in view of PO's persuasive arguments discussed above with regard to the Buhannic and Blackwell references.

Summary:

As shown above all previous prior art rejections have been withdrawn regarding claims 1-173.

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

3. Claims 1-173 are confirmed.

The following is an examiner's statement of reasons for patentability and/or confirmation of claims 1-173 found in this reexamination proceeding. Claims 1-173 are confirmed over the prior art that was explained in the Request and determined to raise a substantial new question of patentability in the Order granting reexamination and over the prior art that was applied and discussed by the examiner in the present reexamination proceeding because of the following:

Regarding independent claim 1, as more specifically discussed above, the proposed prior art does not teach generating a monitoring message, wherein the monitoring message was created by a messaging broker, and providing the monitoring message to a central message repository.

Regarding additional independent claims 46, 51, 70, 90, 135, 140, and 154, the additional independent claims each recite substantially similar limitations as discussed above with regard to independent claim 1 and are thus patentable and/or confirmable based on the same rationale.

Regarding dependent claims 2-45, 47-50, 52-69, 71-89, 91-134, 136-139, 141-153, and 155-173, the claims are dependent on patentable and/or confirmable claims, and are therefore also patentable and/or confirmed.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the

patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

Conclusion

4. All correspondence relating to this ex parte reexamination proceeding should be directed as follows:

By U.S. Postal Service Mail to:

Mail Stop Ex Parte Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to:

(571) 273-9900
Central Reexamination Unit

By hand to:

Customer Service Window
Randolph Building
401 Dulany St.
Alexandria, VA 22314

By EFS-Web:

Registered users of EFS-Web may alternatively submit such correspondence via the electronic filing system EFS-Web, at

https://efs.uspto.gov/efile/myportal/efs-registered

EFS-Web offers the benefit of quick submission to the particular area of the Office that needs to act on the correspondence. Also, EFS-Web submissions are "soft scanned" (i.e., electronically uploaded) directly into the official file for the reexamination proceeding, which offers parties the opportunity to review the content of their submissions after the "soft scanning" process is complete.

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/Adam L Basehoar/

Primary Examiner, Art Unit 3992

Conferees:

/JDC/

/Alexander J Kosowski/

Supervisory Patent Examiner, Art Unit 3992

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Examiner	**Art Unit**
	ADAM BASEHOAR	3992

ORIGINAL		INTERNATIONAL CLASSIFICATION														
CLASS	SUBCLASS	CLAIMED									NON-CLAIMED					
719	313	G	0	6	F	13 / 00 (2006.01.01)										

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
707	999.001	999.01			
709	217				

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

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	173	
/ADAM BASEHOAR/ Primary Examiner.Art Unit 3992	12/12/2012	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
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www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 9422

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
90/009,960	11/07/2011	719	3992	OPEN2200-1

APPLICANTS

7603674, Residence Not Provided;
YYZ LLC(OWNER), CHADDS FORD, PA;
ARIYEH AKMAL(3RD.PTY.REQ.), AUSTIN, TX;
SPRINKLE IP LAW GROUP, AUSTIN, TX

**** CONTINUING DATA ***************************

This application is a REX of 11/398,133 04/05/2006 PAT 7,603,674
which is a CON of 09/737,494 12/15/2000 PAT 7,062,749

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ADAM L BASEHOAR/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
				173	8

ADDRESS

JOSEPH E. CHOVANES
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MALVERN, PA 19355
UNITED STATES

TITLE

APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES

FILING FEE RECEIVED		
2520	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	11/28/2011	ALB
Reviewed Proposed Prior Art	5/16/2012	ALB
Reviewed Applied Prior Art	9/10/2012	ALB
Reviewed Applied Prior Art in view of PO's After-Final Response	12/12/2012	ALB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Ex Parte Reexamination Interview Summary	Control No.	Patent Under Reexamination
	90/009,960	7603674
	Examiner	Art Unit
	ADAM BASEHOAR	3992

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) *ADAM BASEHOAR*	(3) *Luke Wassum*
(2) *Alexander Kosowski*	(4) *Joseph E. Chovanes & Vincent R. Cyr*

Date of Interview: *14 November 2012*

Type: a)☐ Telephonic b)☐ Video Conference
c)☒ Personal (copy given to: 1)☐ patent owner 2)☐ patent owner's representative)

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to…"

Claim(s) discussed: *1*.

Identification of prior art discussed: *Production Workflow, Blackwell, Advanced Workflow Solutions (AWS), Buhannic, Leymann '111, and Leymann '633 references of record*.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

/Adam L Basehoar/ Primary Examiner, Art Unit 3992		

cc: Requester (if third party requester)

Continuation of Description of the general nature of what was agreed to if an agreement was reached, or any other comments: PO's representative initially discussed the previously submitted 37 C.F.R. 1.131 declarations and related exhibits, each provided for swearing behind the Blackwell and Buhannic references. Additionally, the content disclosed in the 37 C.F.R. 1.132 Dieter Roller declaration was discussed as it related to the monitoring message and central message repository limitations with regard to the corresponding Production Workflow, AWS, and Leymann references. PO's representative also discussed their belief that the relied upon teachings in the Buhannic reference are not fully supported based on its provisional application No. 60/214,256. More specifically, PO's representative argued that the prior art references were lacking the concept of the claimed "monitoring message" and "central message repository" as it related to a message broker in the claimed messaging environment. PO's representative provided specific citations to the specification to help further define/clarify the scope of said limitations. See also the attached agenda. PO was to formally submit arguments for further consideration. Said submitted arguments to more specifically define the role and context of the message broker, monitoring messages, and central message repository as required by the claims as currently presented. No specific agreement was reached.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 3992
Examiner : Adam Basehoar
Patent No. : 7,603,674
Filed : December 15, 2000
Control No. : 90/009,960
Inventors : Vincent R. Cyr
Kenneth Fritz
Docket No. : YYZ RE-002

Title : MEASURING, MONITORING AND TRACKING ENTERPRISE COMMUNICATIONS AND PROCESSES

RESPONSE TO FINAL OFFICE ACTION

THE PATENT OWNER, YYZ LLC, of US Patent No. 7,603,674 (the " '674 patent" or the "patent") in the above identified reexamination, hereby timely files this Response, within the two month shortened period set for response, to the final Office Action in the above captioned reexamination, dated September 19, 2012.

The Patent Owner ("PO") gratefully notes the Examiner's grant of an Interview, held November 14, 2012, before Examiners Basehoar, Wassum and Kosowski in the above referenced examination. An Interview Summary is provided herewith.

The references in the case are:

1) Leymann, Frank, and Roller, Dieter, Production Workflow Concepts and Techniques, Upper Saddle River, Prentice-Hall, Inc., ISBN 0-13-021753-0 (hereafter "Production Workflow").

2) US Patent No. 7,003,781 issued to Blackwell et al. (hereafter "Blackwell").

3) Hoffmann, Marc, Shute, David, and Ebbers, Mike, Image and Workflow Library: Advanced Workflow Solutions using IBM FlowMark, International Business Machines Corporation, January 1999, SG24-5371-00 (hereafter "AWS").

4) Leymann '633 - (U.S. Patent No. 6,122,633, published 09/19/2000).

OK TO ENTER /ALB/

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90009960	7603674
	Certificate Date	Certificate Number
		C1

Requester Correspondence Address:	☐ Patent Owner	☒ Third Party

SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

LITIGATION REVIEW ☒	ALB (examiner initials)	12/12/2012 (date)
Case Name		Director Initials
2:11-cv-01609		/AJK/ for IY
2:11-cv-00931		/AJK/ for IY
2:11-cv-06602		/AJK/ for IY

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
1. None Found	

US007603674C1

(12) EX PARTE REEXAMINATION CERTIFICATE (9490th)

United States Patent

Cyr et al.

(10) Number: US 7,603,674 C1

(45) Certificate Issued: *Jan. 24, 2013

(54) **APPARATUS AND SYSTEMS FOR MEASURING, MONITORING, TRACKING AND SIMULATING ENTERPRISE COMMUNICATIONS AND PROCESSES**

(75) Inventors: **Vincent R. Cyr**, Glen Mills, PA (US); **Kenneth Fritz**, Glen Mills, PA (US)

(73) Assignee: **YYZ LLC**, Chadds Ford, PA (US)

Reexamination Request:
No. 90/009,960, Nov. 7, 2011

Reexamination Certificate for:

Patent No.:	**7,603,674**
Issued:	**Oct. 13, 2009**
Appl. No.:	**11/398,133**
Filed:	**Apr. 5, 2006**

(*) Notice: This patent is subject to a terminal disclaimer.

Related U.S. Application Data

(63) Continuation of application No. 09/737,494, filed on Dec. 15, 2000, now Pat. No. 7,062,749.

(51) **Int. Cl.**
G06F 13/00 (2006.01)

(52) **U.S. Cl.** **719/313**; 707/999.001; 707/999.01; 709/217

(58) **Field of Classification Search** ..... None
See application file for complete search history.

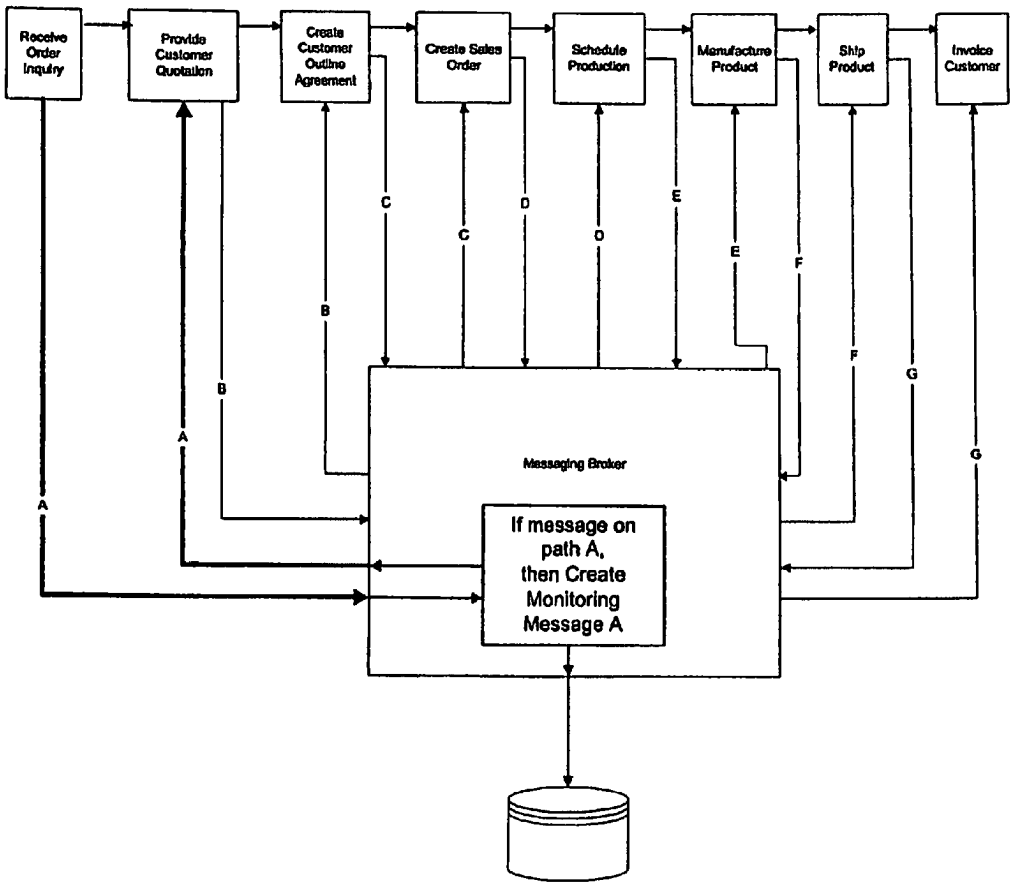
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/009,960, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Adam Basehoar

(57) **ABSTRACT**

The present invention comprises apparatus and systems for measuring, monitoring, tracking and simulating enterprise communications and processes. A central message repository or database is constructed, comprised of monitoring messages sent from process messaging systems. The database may then be accessed or queried as desired. A simulation tool assists in reviewing present and proposed processes and subprocesses before modifying existent systems or creating new systems.



EX PARTE REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

NO AMENDMENTS HAVE BEEN MADE TO THE PATENT

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims **1-173** is confirmed.

* * * * *