SFDC 1002

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LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES CA 90036-5679

In re Patent No. 7,356,482 : DECISION GRANTING PETITION
Issue Date: April 8, 2008 : UNDER 37 CFR 1.78(a)(3) AND
Application No. 09/797,488 : REQUEST FOR CERTIFICATE OF
Filed: March 1, 2001 : CORRECTION
Attorney Docket No. 7356482/20020026339 :

This is a decision on the petition, filed July 24, 2008, which is being treated as a petition under 37 CFR 1.78(a)(3), seeking to add a claim for priority under 35 U.S.C. § 120 to nonprovisional Application No. 09/215,898, filed December 18, 1998, by way of a certificate of correction.

The petition is **GRANTED**.

A review of the file record fails to disclose that a claim for the benefit of priority to the above-noted, prior-filed nonprovisional application was made within the time period set forth in 37 CFR 1.78(a)(2)(ii) and further failed to include a proper reference to the prior-filed application as required by 37 CFR 1.78(a)(2)(i) and 1.78(a)(2)(iii).

The instant application was filed March 1, 2001. Therefore, since this application was filed after November 29, 2000, a petition under 37 CFR 1.78(a)(3), along with submission of a Certificate of Correction, is the appropriate avenue of relief to accept a late claim for the benefit of priority to a prior-filed nonprovisional application after issuance of the application into a patent. *See* MPEP 1481.

A petition for acceptance of a claim for late priority under 37 CFR 1.78(a)(3) must be accompanied by:

(1) the reference required by 35 U.S.C. § 120 and 37 CFR 1.78(a)(2)(i) of the prior-filed application, unless previously submitted;
(2) the surcharge set forth in § 1.17(t); and
(3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2)(ii) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional.

As the petition for acceptance of an unintentionally delayed claim for the benefit of priority under 35 U.S.C. § 120 to the above-noted, prior-filed nonprovisional application satisfies the conditions of 37 CFR 1.78(a)(3), the petition is granted.

A corrected Filing Receipt, which includes the priority claim to the above-noted, prior-filed nonprovisional application, accompanies this decision on petition.

Petitioner is advised that the granting of this petition and the mailing of a corrected Filing Receipt should not be viewed as an indication that a determination has been made that this application is entitled to claim benefit of the prior-filed application. A determination that applicant is entitled to claim benefit of the prior-filed application will be made by the Examiner prior to the mailing of a certificate of correction.

The Office is in receipt of the $1,410 surcharge fee, as well as the $100 certificate of correction fee.

Any inquiries concerning this decision may be directed to Charlema Grant at (571) 272-3215.

In light of the issuance of the Certificate of Correction on September 23, 2008, this application does not need to be referred to the Certificates of Correction Branch.

Anthony Knight
Supervisor
Office of Petitions

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

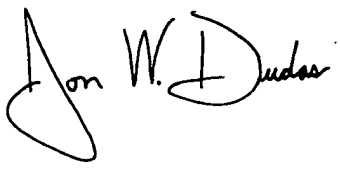
PATENT NO. : 7,356,482 B2
APPLICATION NO. : 09/797488
DATED : April 8, 2008
INVENTOR(S) : Richard Frankland et al.

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

On the Title Page (60) and column 1, line 3 add:
The present application is a continuation of U.S. Patent Application No. 09/215,898, entitled "Integrated Change Management Unit," filed on December 18, 1998, now U.S. Patent No. 6,341,287.

Signed and Sealed this

Twenty-third Day of September, 2008



JON W. DUDAS
Director of the United States Patent and Trademark Office

Attorney Docket No.: LUFK-001/00US 309694-2004 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	Richard FRANKLAND et al.	Examiner:	Mary Da Zhi Wang Cheung
Patent No.:	7,356,482 B2	Confirmation No.:	4851
Issued:	April 8, 2008	Group Art Unit:	3694
Appl. No.:	09/797,488		
Filed:	March 1, 2001		
For:	**INTEGRATED CHANGE MANAGEMENT UNIT**		

U.S. Patent and Trademark Office
Customer Service Window
Mail Stop Petition
Randolph Building
401 Dulany Street
Alexandria, VA 22314

PETITION TO ACCEPT UNINTENTIONALLY DELAYED PRIORITY CLAIM UNDER 37 CFR §1.78

Applicants hereby petition for acceptance of an unintentionally delayed claim for priority under 35 U.S.C. §120 for the benefit of a prior filed U.S. nonprovisional application. As described below, a Certificate of Correction amending the above-identified application to include the priority claim is being filed herewith. Thus, Applicants submit this Petition according to MPEP §1481.03.

In accordance with 37 C.F.R. §1.78(a)(3), Applicants submit the following in support of this Petition:

(i) The present application is a continuation of U.S. Patent Application No. 09/215,898, entitled "Integrated Change Management Unit," filed on December 18, 1998, now issued as US Pat. No. 6,341,287. This relationship is reflected in the prosecution history of the present application, including:

- in the Bibliographic Data Sheet, the relevant portion of which is reproduced below:

SERIAL NUMBER 09/797,488	FILING DATE 03/01/2001 RULE	CLASS 705	GROUP ART UNIT 2161	ATTORNEY DOCKET NO. 104632-991101

APPLICANTS

Richard Frankland, San Jose, CA;
Chistopher M. Mitchell, El Granada, CA;
Joseph D. Ferguson, Santa Clara, CA;
Anthony T. Sziklai, Half Moon Bay, CA;
Ashish K. Verma, Foster City, CA;
Judith E. Popowski, Half Moon Bay, CA;
Douglas H. Sturgeon, San Mateo, CA;

** CONTINUING DATA **********
THIS APPLICATION IS A CON OF 09/215,898 12/18/1998 ABN

- in the Application Transmittal, the relevant portion of which is reproduced below:

6. [ ] Application Data Sheet. See 37 CFR 1.76. 17. [X] Other: $1,801.00

17. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:*

[X] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No.: 09/215,898

Prior application information: Examiner T. Black Group/Art Unit: 2771

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

18. CORRESPONDENCE ADDRESS

(ii) A Certificate of Correction is being filed herewith amending the first sentence of the specification to include the information set forth in paragraph (i) above.

(iii) Applicants submit herewith the petition fee in the amount of $1,410.00 as set forth in 37 C.F.R. §1.17(t).

(iv) The entire delay between the date the claim was due under 37 C.F.R. §1.78(a)(2)(ii) (July 1, 2001) and the date of this Petition was unintentional.

Accordingly, Applicants respectfully request addition of the priority claim in accordance with the Certificate of Correction submitted herewith.

The Director is hereby authorized to charge the fee set forth in 37 C.F.R. §1.17(t) in the amount of $1,410.00 to Deposit Account No. 50-1283.

Date: 24 July 2008

Respectfully submitted,
COOLEY GODWARD KRONISH LLP

By: _____
C. Scott Talbot
Reg. No. 34,262

COOLEY GODWARD KRONISH LLP
ATTN: Patent Group
777 6th Street, NW, Suite 1100
Washington, DC 20001
Tel: (703) 456-8000
Fax: (202) 842-7899

369792 v1/RE

Attorney Docket No.: LUFK-001/00US 309694-2004 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	Richard FRANKLAND et al.	Examiner:	Mary Da Zhi Wang Cheung
Patent No.:	7,356,482 B2	Confirmation No.:	4851
Issued:	April 8, 2008	Group Art Unit:	3694
Appl. No.:	09/797,488		
Filed:	March 1, 2001		
For:	**INTEGRATED CHANGE MANAGEMENT UNIT**		

U.S. Patent and Trademark Office
Attn: Certificate of Correction Branch
Randolph Building
401 Dulany Street
Alexandria, VA 22314

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT

Applicants respectfully request a Certificate of Correction for the above-identified patent due to an error made by the Applicants. Applicants unintentionally failed to make reference to a prior copending U.S. nonprovisional application pursuant to 37 C.F.R. §1.78(a)(2). The error can be found in the patent in the following location:

As the first sentence of the specification following the title, insert the following:

> The present application is a continuation of U.S. Patent Application No. 09/215,898, entitled "Integrated Change Management Unit," filed on December 18, 1998, now U.S. Patent No. 6,341,287.

The correction is indicated on the attached Form PTO/SB/44 for Certificate of Correction.

In support of this Request, Applicants believe the following conditions have been satisfied pursuant to MPEP §1481.03:

A. All requirements set forth in 37 C.F.R. §1.78(a)(1) are met in the application which became the patent to be corrected, Patent No. 7,356,482 B2.

B. Priority is appropriate according to MPEP §201.11.

C. A petition to accept an unintentionally delayed claim for the benefit of a prior application is being filed herewith, including the surcharge set forth in 37 C.F.R. §1.17(t), as required by 37 CFR §1.78(a)(3).

The Director is hereby authorized to charge the fee set forth in 37 CFR §1.20(a) in the amount of $100.00 to Deposit Account No. 50-1283.

Date: 24 July 2008

Respectfully submitted,
COOLEY GODWARD KRONISH LLP

By: _____
C. Scott Talbot
Reg. No. 34,262

COOLEY GODWARD KRONISH LLP
ATTN: Patent Group
777 6th Street, NW, Suite 1100
Washington, DC 20001
Tel: (703) 456-8000
Fax: (202) 842-7899

369806 v1/RE

PTO/SB/44 (02-01)
Approved for use through 01/31/2004. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,356,482 B2 PAGE 1 OF 1

APPLICATION NO. : 09/797,488

ISSUE DATE : April 8, 2008

INVENTOR(S) : Richard Frankland
Christopher M. Mitchell
Joseph D. Ferguson
Anthony T. Sziklai
Ashish K. Verma
Judith E. Popowski
Douglas H. Sturgeon

It is certified that an error appears in the above-identified application which became the above-identified patent and that said application is hereby corrected as shown below:

As the first sentence of the specification following the title, insert the following:

The present application is a continuation of U.S. Patent Application No. 09/215,898, entitled "Integrated Change Management Unit," filed on December 18, 1998, now U.S. Patent No. 6,341,287.

MAILING ADDRESS OF SENDER:
Cooley Godward LLP
ATTN: Patent Group
777 6th Street, N.W., Suite 1100
Washington, DC 20001

Electronic Patent Application Fee Transmittal

Application Number:	09797488
Filing Date:	01-Mar-2001
Title of Invention:	INTEGRATED CHANGE MANAGEMENT UNIT
First Named Inventor/Applicant Name:	Richard Frankland
Filer:	C. Scott Talbot/Anna O'Connor
Attorney Docket Number:	104632-991101

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Priority accept. unintent. delayed claim	1454	1	1410	1410
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Certificate of correction	1811	1	100	100

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1510**

Electronic Acknowledgement Receipt

EFS ID:	3671853
Application Number:	09797488
International Application Number:	
Confirmation Number:	4851
Title of Invention:	INTEGRATED CHANGE MANAGEMENT UNIT
First Named Inventor/Applicant Name:	Richard Frankland
Customer Number:	36716
Filer:	C. Scott Talbot/Anna O'Connor
Filer Authorized By:	C. Scott Talbot
Attorney Docket Number:	104632-991101
Receipt Date:	24-JUL-2008
Filing Date:	01-MAR-2001
Time Stamp:	17:31:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1510
RAM confirmation Number	2591
Deposit Account	501283
Authorized User	

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

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		LUFK-001_00US-Petition-COC.pdf	195095 cdeb3f7f825923be921a8375c643ac47030cb0ce	yes	6

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Petition for review by the Office of Petitions.	1	3
Request for Certificate of Correction	4	6

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	8288 d032636180ac3849b16d4abbb67f54847a8c542d	no	2

Warnings:

Information:

Total Files Size (in bytes):	203383

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.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	04/08/2008	7356482	104632-991101	4851

36716 7590 03/19/2008

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 1064 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Richard Frankland, San Jose, CA;
Chistopher M. Mitchell, El Granada, CA;
Joseph D. Ferguson, Santa Clara, CA;
Anthony T. Sziklai, Half Moon Bay, CA;
Ashish K. Verma, Foster City, CA;
Judith E. Popowski, Half Moon Bay, CA;
Douglas H. Sturgeon, San Mateo, CA;

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

36716 7590 12/28/2007

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

TITLE OF INVENTION: INTEGRATED CHANGE MANAGEMENT UNIT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	03/28/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHEUNG, MARY DA ZHI WANG	3694	705-050000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 Ladas & Parry LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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

(A) NAME OF ASSIGNEE: ALTERNATIVE SYSTEMS, INC.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Half Moon Bay, California

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☒ Payment by credit card.
☒ The Director is hereby authorized to charge overpayment, to Deposit Account Number 12-0415 any deficiency, or credit any (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Robert Popa 43010/ Date February 15, 2008

Typed or printed name Robert Popa Registration No. 43010

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Electronic Patent Application Fee Transmittal

Application Number:	09797488
Filing Date:	01-Mar-2001
Title of Invention:	INTEGRATED CHANGE MANAGEMENT UNIT
First Named Inventor/Applicant Name:	Richard Frankland
Filer:	Robert Popa/Veronica Yoon
Attorney Docket Number:	104632-991101

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	1501	1	1440	1440
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1740**

Electronic Acknowledgement Receipt

EFS ID:	2870770
Application Number:	09797488
International Application Number:	
Confirmation Number:	4851
Title of Invention:	INTEGRATED CHANGE MANAGEMENT UNIT
First Named Inventor/Applicant Name:	Richard Frankland
Customer Number:	36716
Filer:	Robert Popa/Veronica Yoon
Filer Authorized By:	Robert Popa
Attorney Docket Number:	104632-991101
Receipt Date:	15-FEB-2008
Filing Date:	01-MAR-2001
Time Stamp:	18:49:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1740
RAM confirmation Number	3476
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	952776_IssueFee.pdf	90862 53f35ee32d24a408d99f539bb3236155c9484170	no	1
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8277 dc7d000d1a0a45698aec872ef11a92d8c0c3e315	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	99139	

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

CONFIRMATION NO. 4851

SERIAL NUMBER	FILING OR 371(c) DATE / RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/797,488	03/01/2001	705	3694	104632-991101

APPLICANTS

Richard Frankland, San Jose, CA;
Chistopher M. Mitchell, El Granada, CA;
Joseph D. Ferguson, Santa Clara, CA;
Anthony T. Sziklai, Half Moon Bay, CA;
Ashish K. Verma, Foster City, CA;
Judith E. Popowski, Half Moon Bay, CA;
Douglas H. Sturgeon, San Mateo, CA;

ewc 1-30.08

** CONTINUING DATA **********

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

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 03/29/2001

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☑ no	CA	13	154	9
35 USC 119 (a-d) conditions met	☐ yes ☑ no ☐ Met after Allowance				
Verified and Acknowledged	Examiner's Signature Initials				

ADDRESS
36716

TITLE
INTEGRATED CHANGE MANAGEMENT UNIT

FILING FEE RECEIVED	FEES: Authority has been given in Paper
8820	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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NOTICE OF ALLOWANCE AND FEE(S) DUE

36716 7590 12/28/2007

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 12/28/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

TITLE OF INVENTION: INTEGRATED CHANGE MANAGEMENT UNIT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	03/28/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

36716 7590 12/28/2007

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

TITLE OF INVENTION: INTEGRATED CHANGE MANAGEMENT UNIT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	03/28/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHEUNG, MARY DA ZHI WANG	3694	705-050000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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36716 7590 12/28/2007

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EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 12/28/2007

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1064 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1064 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

Notice of Allowability	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3694	

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

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

1. ☒ This communication is responsive to *appeal brief filed on 28 August 2007*.

2. ☒ The allowed claim(s) is/are *2,4-9,11-24,26-31,33-46,48-52 and 54-66*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Allowable Subject Matter

1. Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are pending and are allowed.

2. The following is an examiner's statement of reasons for allowance:

The closest prior art of Eager et al. (US 5,960,200) teaches an automated system transitions an entire enterprise to a distributed infrastructure. The system includes a process for organizing and managing the transition, a multi-tiered client/server architecture that adheres to open systems standards, a system to automate the transition of existing applications to this architecture, and a system to enable the creation or modification of applications based on this architecture.

In regarding to independent claims 2, 24 and 46, Eager taken either individually or in combination with other prior art of record fails to teach or suggest a system for providing a dynamically generated application having one or more functions and one or more user interface elements comprising multiple layers, and one the layer is a change management layer that automatically detecting changes that affect an application.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (571)-272-

6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final Communications labeled "BOX AF")

(571) 273-6705 (Draft Communications)

Mary Cheung
November 6, 2007

MARY D. CHEUNG
PRIMARY EXAMINER

Notice of References Cited	Application/Control No. 09/797,488	Applicant(s)/Patent Under Reexamination FRANKLAND ET AL.	
	Examiner Mary Cheung	Art Unit 3694	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-			
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Buzzard, "dBase and SQL Mixing Metaphors", Data Based Advisor, v8, n6, p94(7), June 1990, ISSN: 0740-5200.
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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BIBDATASHEET

CONFIRMATION NO. 4851

Bib Data Sheet

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNT	ATTORNEY DOCKET NO.
09/797,488	03/01/2001 RULE	705	~~3621~~ 3694	104632-991101

APPLICANTS

Richard Frankland, San Jose, CA; ✓

Chistopher M. Mitchell, El Granada, CA; ✓
Joseph D. Ferguson, Santa Clara, CA; Anthony T. Sziklai, Half Moon Bay, CA; ✓
Ashish K. Verma, Foster City, CA;
Judith E. Popowski, Half Moon Bay, CA; ✓
Douglas H. Sturgeon, San Mateo, CA; ✓

** CONTINUING DATA **********

This application is a CON of 09/215,898 12/18/1998 PAT 6,341,287 verified mc

** FOREIGN APPLICATIONS ********** None mc

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 03/29/2001

Foreign Priority claimed	STATE OR	SHEETS	TOTAL	INDEPENDENT
☐ yes ☑ no	COUNTRY	DRAWING	CLAIMS	CLAIMS
35 USC 119 (a-d) conditions met ☐ yes ☑ no ☐ Met after Allowance	CA	13	~~154~~ 59	~~9~~ 3
Verified and Acknowledged Examiner's Signature Initials				

ADDRESS
GARY CARY WARE &FREIDENRICH
1755 EMBARCADERO
PALO ALTO , CA
94303-3340

TITLE
Integrated change management unit

FILING FEE	FEES: Authority has been given in Paper	☐ All Fees
RECEIVED 1866	No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue)

Issue Classification	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3694	

ISSUE CLASSIFICATION

ORIGINAL						CROSS REFERENCE(S)						
CLASS				SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)						
705				8	707	102						
INTERNATIONAL CLASSIFICATION												
G	0	6	F	17/00								
				/								
				/								
				/								
				/								

(Assistant Examiner) (Date)

Patricia Lewis 12/6/07
(Legal Instruments Examiner) (Date)

MARY D. CHEUNG
PRIMARY EXAMINER

Mary Cheung 11/06/07
(Primary Examiner) (Date)

Total Claims Allowed: 59

O.G. Print Claim(s)	O.G. Print Fig.
1	1

☐ 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
	1	27	31	55	61		91		121		151		181
1	2		32	53	62		92		122		152		182
	3	28	33	56	63		93		123		153		183
2	4	29	34	57	64		94		124		154		184
3	5	30	35	58	65		95		125		155		185
4	6	31	36	59	66		96		126		156		186
5	7	32	37		67		97		127		157		187
6	8	33	38		68		98		128		158		188
7	9	35	39		69		99		129		159		189
	10	36	40		70		100		130		160		190
8	11	34	41		71		101		131		161		191
9	12	37	42		72		102		132		162		192
10	13	38	43		73		103		133		163		193
11	14	39	44		74		104		134		164		194
12	15	40	45		75		105		135		165		195
13	16	41	46		76		106		136		166		196
15	17		47		77		107		137		167		197
16	18	42	48		78		108		138		168		198
14	19	43	49		79		109		139		169		199
17	20	44	50		80		110		140		170		200
18	21	45	51		81		111		141		171		201
19	22	46	52		82		112		142		172		202
20	23		53		83		113		143		173		203
21	24	47	54		84		114		144		174		204
	25	48	55		85		115		145		175		205
22	26	49	56		86		116		146		176		206
23	27	50	57		87		117		147		177		207
24	28	51	58		88		118		148		178		208
25	29	52	59		89		119		149		179		209
26	30	54	60		90		120		150		180		210

Index of Claims

Application No.	Applicant(s)
09/797,488	FRANKLAND ET AL.
Examiner	**Art Unit**
Mary Cheung	3621

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	3/29/05	8/24/05	1/13/06	8/4/06	2/16/07	11/6/07			
	1	-								
1	2	√	√	√	√	√	=			
	3	√	√	√	-					
2	4	√	√	√	√	√	=			
3	5	√	√	√	√	√	=			
4	6	√	√	√	√	√	=			
5	7	√	√	√	√	√	=			
6	8	√	√	√	√	√	=			
7	9	√	√	√	√	√	=			
	10	√	√	√	-					
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9	12	√	√	√	√	√	=			
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16	18	√	√	√	√	√	=			
14	19	√	√	√	√	√	=			
17	20	√	√	√	√	√	=			
18	21	√	√	√	√	√	=			
19	22	√	√	√	√	√	=			
20	23	√	√	√	√	√	=			
21	24	√	√	√	√	√	=			
	25	√	√	√	-					
22	26	√	√	√	√	√	=			
23	27	√	√	√	√	√	=			
24	28	√	√	√	√	√	=			
25	29	√	√	√	√	√	=			
26	30	√	√	√	√	√	=			
27	31	√	√	√	√	√	=			
[redacted]	32	√	√	√	-					
28	33	√	√	√	√	√	=			
29	34	√	√	√	√	√	=			
30	35	√	√	√	√	√	=			
31	36	√	√	√	√	√	=			
32	37	√	√	√	√	√	=			
33	38	√	√	√	√	√	=			
35	39	√	√	√	√	√	=			
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34	41	√	√	√	√	√	=			
37	42	√	√	√	√	√	=			
38	43	√	√	√	√	√	=			
39	44	√	√	√	√	√	=			
40	45	√	√	√	√	√	=			
41	46	√	√	√	√	√	=			
	47	√	√	√	-					
42	48	√	√	√	√	√	=			
43	49	√	√	√	√	√	=			
44	50	√	√	√	√	√	=			

Claim		Date								
Final	Original	3/29/05	8/24/05	1/13/06	8/4/06	2/16/07	11/6/07			
45	51	√	√	√	√	√	=			
46	52	√	√	√	√	√	=			
	53	√	√	√	-					
47	54	√	√	√	√	√	=			
48	55	√	√	√	√	√	=			
49	56	√	√	√	√	√	=			
50	57	√	√	√	√	√	=			
51	58	√	√	√	√	√	=			
52	59	√	√	√	√	√	=			
54	60	√	√	√	√	√	=			
55	61	√	√	√	√	√	=			
53	62	√	√	√	√	√	=			
56	63	√	√	√	√	√	=			
57	64	√	√	√	√	√	=			
58	65	√	√	√	√	√	=			
59	66	√	√	√	√	√	=			
	67	√	-							
	68	√	-							
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	100	√	-							

Claim		Date								
Final	Original	3/29/05	8/24/05							
	101	√	-							
	102	√	-							
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	146	√	-							
	147	√	-							
	148	√	-							
	149	√	-							
	150	√	-							

Search Notes

Application/Control No.	Applicant(s)/Patent under Reexamination
09/797,488	FRANKLAND ET AL.
Examiner	**Art Unit**
Mary Cheung	3694

SEARCHED			
Class	Subclass	Date	Examiner
705	7-11,28-29	11/6/2007	MC
707	102,200	11/6/2007	MC
707	202-203	11/6/2007	MC
707	205	11/6/2007	MC
588	1,16	11/6/2007	MC
700	266	11/6/2007	MC
713	151-152	11/6/2007	MC
719	328-329	11/6/2007	MC

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
searched claims in US-PGPUB		11/6/2007	MC

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
EAST	11/6/2007	MC
Dialog	11/6/2007	MC
Appeal conference with James Trammell and Vinny McKinnon	10/31/2007	mc

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6090947	(detect$3 or discover$3 or sens$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:18
L2	7982023	chang$3 or modify$3 or modification or modifie$1 or updat$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:18
L3	917185	1 with 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:19
L4	287407	layer with application	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:19
L5	268147	layer with function$7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:20
L6	304930	2 with layer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:23
L7	6490	3 and 4 and 5 and 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:28

EAST Search History

L8	741657	(generat$3 or produc$3) with application	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30
L9	2510	7 and 8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30
L10	145850	brows$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30
L11	352	9 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30
L12	70035	(generat$3 or produc$3) with report	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30
L13	187	9 and 12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30
L14	65	13 not 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/11/06 23:30

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	37976	((detect$3 or discover$3 or sens$3) with (chang$3 or modif$3 or modification or modifie$1 or updat$3)).clm.	US-PGPUB	OR	ON	2007/11/06 23:15
L2	6761	(layer with application).clm.	US-PGPUB	OR	ON	2007/11/06 23:16
L3	144	1 and 2	US-PGPUB	OR	ON	2007/11/06 23:16
L4	191775	function$7.clm.	US-PGPUB	OR	ON	2007/11/06 23:16
L5	60	3 and 4	US-PGPUB	OR	ON	2007/11/06 23:16

read

```
? show files
File  15:ABI/Inform(R) 1971-2007/Nov 05
         (c) 2007 ProQuest Info&Learning
File  16:Gale Group PROMT(R) 1990-2007/Nov 05
         (c) 2007 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2007/Oct 31
         (c)2007 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2007/Nov 02
         (c) 2007 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2007/Nov 01
         (c) 2007 The Gale Group
File   9:Business & Industry(R) Jul/1994-2007/Nov 02
         (c) 2007  The Gale Group
File  20:Dialog Global Reporter 1997-2007/Nov 06
         (c) 2007 Dialog
File 476:Financial Times Fulltext 1982-2007/Nov 07
         (c) 2007 Financial Times Ltd
File 610:Business Wire 1999-2007/Nov 06
         (c) 2007 Business Wire.
File 613:PR Newswire 1999-2007/Nov 06
         (c) 2007 PR Newswire Association Inc
File 624:McGraw-Hill Publications 1985-2007/Nov 06
         (c) 2007 McGraw-Hill Co. Inc
File 634:San Jose Mercury  Jun 1985-2007/Nov 02
         (c) 2007 San Jose Mercury News
File 636:Gale Group Newsletter DB(TM) 1987-2007/Nov 05
         (c) 2007 The Gale Group
File 810:Business Wire 1986-1999/Feb 28
         (c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
         (c) 1999 PR Newswire Association Inc
File   2:INSPEC 1898-2007/Oct W3
         (c) 2007 Institution of Electrical Engineers
File  35:Dissertation Abs Online 1861-2007/Jul
         (c) 2007 ProQuest Info&Learning
File  65:Inside Conferences 1993-2007/Nov 06
         (c) 2007 BLDSC all rts. reserv.
File  99:Wilson Appl. Sci & Tech Abs 1983-2007/Sep
         (c) 2007 The HW Wilson Co.
File 256:TecInfoSource 82-2007/Dec
         (c) 2007 Info.Sources Inc
File 474:New York Times Abs 1969-2007/Nov 05
         (c) 2007 The New York Times
File 475:Wall Street Journal Abs 1973-2007/Nov 05
         (c) 2007 The New York Times
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group
? ds

Set     Items   Description
S1    6936778   DETECT???? OR DISCOVER??? OR SENSOR???
S2   24473025   CHANG??? OR MODIFY??? OR MODIFICATION? ? OR MODIFIE? ? OR -
             UPDAT???
S3     169874   S1 (8N) S2
S4    1663610   LAYER OR LAYERS
S5      32180   S2 (6N) S4
S6   12430529   APPLICATION OR APPLICATIONS
S7      68132   S6 (6N) S4
S8    6326175   FUNCTION OR FUNCTIONS OR FUNCTIONALITY OR FUNCATIONALITIES
```

S9	29450	S8 (6N) S4
S10	6	S3 AND S5 AND S7 AND S9
S11	4	RD (unique items)

read ?

11/K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

03293886 1143417571
Security information management as an outsourced service
Debar, Herve; Viinikka, Jouni
Information Management & Computer Security v14n5 PP: 416 2006
ISSN: 0968-5227 JRNL CODE: IMCS
WORD COUNT: 8184

...TEXT: has enabled the migration to efficient intrusion protection systems, merging access control at the network **layer** with access control at the **application layer** . Distributing IDS components onto single workstations should create an efficient multi-layered approach to information...

...be managed with a few sets of rules and be upgraded at rare occasions, intrusion **detection** and prevention systems require frequent **updates** to their signature bases and careful management of the events that have been generated. As...

...more reliable than earlier events. The same process is used to track the evolution of **sensor** properties, each property **change** being tagged with the appropriate timestamp.
face=+Bold; 2.3.3 Transient informationface=-Bold;

The...and can insert missing contextual information.

The enrichment processes manipulate contextual information. They can therefore **modify** the context **layer** extensively, and read events to verify associations between events and context. If an event uses...

...can explain the relationships between alerts in this layer. The access control.

Finally, the maintenance **layer** handles archiving **functions** , which enables scalability by limiting the size of each table. Only the most voluminous tables...IEEE Transactions on Reliability, Vol. 52, pp. 75-82.

12. Ye, N., Borror, C. and **Chang** , Y. (2002), "EWMA techniques for computer intrusion **detection** through anomalous **changes** in event intensity", Quality & Reliability Engineering International, Vol. 18, pp. 443-51.

13. Mahadik, V...

11/K/2 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

07472828 Supplier Number: 62694868 (USE FORMAT 7 FOR FULLTEXT)
Trinity Gets to the Heart of the Problem -- Avesta Technologies' Trinity toolset combines full discovery, mapping and reporting to find out what's ailing your network. (Software Review) (Evaluation)
Roushanaee, Babak
Network Computing, p108
June 12, 2000
Language: English Record Type: Fulltext

Article Type: Evaluation
Document Type: Magazine/Journal; Trade
Word Count: 3233

Network Computing Editor's Choice
Grade: B
Avesta Technologies Trinity 2.0 offers great **functionality** . It performs both **Layer** 3 and **Layer** 2 discovery and mapping. In comparison, SMARTS' InCharge 3.1 Connectivity and Performance **Applications** Suite also performs both **Layer** 3 and Layer 2 discovery but lacks a mapping capability, while NerveCenter 3.6 is...

...added, the alarms started to appear-some with better descriptions than others. The enterprise-explorer **function** provides a file-folder representation of **Layer** 2 and Layer 3 relationships of your environment. Objects are classified based on functions (including...identifies the effects of any device's failure up-front (based on Layer 2 and **Layer** 3 relationships) and as **changes** are **detected** , and stores that information in an efficient data structure by the same name. As symptoms...usual features of range, mask, community strings and so on. We used a Layer 3 **discovery** on our environment. Because we were unable to **change** the trap destination addresses for all the devices in the test bed, we relied on...

...the attack. The problem is that as you go up the protocol stack toward the **application layer** , dependencies become more and more complex-as do the state machines that reflect them. We...

11/K/3 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

07540072 SUPPLIER NUMBER: 16285496 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Photoshop retouches image with new palettes, layers. (Adobe Systems' Photoshop 3.0 image editing package) (Software Review) (Evaluation)
Long, Ben
MacWEEK, v8, n40, p1(4)
Oct 10, 1994
DOCUMENT TYPE: Evaluation ISSN: 0892-8118 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2160 LINE COUNT: 00169

... where you don't have to dig too deep or work too long before you **discover** new features and **changes** .
In addition to the new Move and Sponge tools that appear in the toolbox, Photoshop...

...tutorials.
Possibly the most significant new feature in Photoshop 3 is the provision for multiple **layers** within a document. **Layers** in Photoshop **function** like separate sheets of transparent acetate that sit atop your image. **Changes** in one **layer** do not affect other layers, making it simple to create editable collages or to perform...
...layers are not truly object-oriented. Unlike Collage, you cannot apply a filter to a **layer** and then **change** or remove it later.
As would be expected, Photoshop 3's increased **functionality** comes at a price: The more **layers** you add, the slower Photoshop runs. We found that even on a Power Mac 7100...

...layer to another without having to use any of Photoshop's usual channels

or selection **functions** .

To save disk space, **layers** and **layer** masks can be flattened. This merges the adjusted pixels into the lower layers, making your...

...filter, which renders realistic-looking clouds.

Performance art

Aside from the slowdown when using multiple **layers** , Photoshop 3 is a speedy **application** when running native. Whereas Photoshop 2.5.1's code was partly native and partly...

11/K/4 (Item 1 from file: 275)

01367993 SUPPLIER NUMBER: 08714916 (USE FORMAT 7 OR 9 FOR FULL TEXT)

dBASE and SQL: mixing metaphors. (structured query language)

Buzzard, James

Data Based Advisor, v8, n6, p94(7)
June, 1990
ISSN: 0740-5200 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 4060 LINE COUNT: 00318

... record numbers, the record number column shouldn't be directly accessible to dBASE users or **applications** . The dBASE-to-SQL command-mapping **layer** should automatically retrieve and **update** this column. The value for the current record should be accessible only to the user...

...processed with a PACK command, the record and its contents remain in place. The only **change** is that the record status can be **detected** with the DELETED() function and it can be excluded from searches and filters. This form...number column, the deletion status column should not be directly visible except through the DELETED() **function** . Only the dBASE-to-SQL mapping- **layer** software should be able to manipulate these special columns.

Functions and UDFs in queries

A...

?

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: **Frankland, Richard et al.** Serial No.: 09/797,488 Filed: March 1, 2001 For: "INTEGRATED CHANGE MANAGEMENT SYSTEM"	)	Examiner: Cheung, Mary Da Zhi Wang Art Unit: 3694 Our Ref: B-5746CONT 952776-6 Date: August 28, 2007 Re: ***Appeal to the Board of Appeals***

BRIEF ON APPEAL

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

Sir:

This is an appeal from the Final rejection, dated February 28, 2007, for the above identified patent application. A credit card deposit in the amount of $500.00 for the fee set forth in 37 C.F.R. 1.17(c) for submitting this Brief and a credit card deposit in the amount of $120.00 for the time-extension fee set forth in 37 C.F.R. 1.17(a)(1) will be electronically submitted. The Appellants submit that this Appeal Brief is being timely filed within the one-month extended time limit, since the Notice Of Appeal was received on May 29, 2007.

REAL PARTY IN INTEREST

The present application has been assigned to Alternative Systems, Inc. of Half Moon Bay, CA.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences related to the present application.

STATUS OF CLAIMS

The present Application comprises claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66, which all stand rejected.

Claims 1, 3, 10, 25, 32, 47, 53 and 67-155 were cancelled without prejudice.

Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are the subject of this appeal and are reproduced in the accompanying claim appendix.

STATUS OF AMENDMENTS

There are no amendments pending in the present application.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention described and claimed in the present application relates generally to the integrated management of information affected by regulatory changes as well as non-regulatory changes. Regulatory changes include changes in environmental, health and safety laws (page 1, lines 4-6; paragraph [0001]).

A number of rules such as federal, state and local laws, statutes, ordinances and regulations control industrial and commercial activities (page 1, lines 8-10; paragraph [0002]). Some rules have overlapping jurisdiction and are not always consistent with one another. Further, the rules and related constraints are constantly changing (page 3, lines 2-9; paragraph [0004]). Various attempts have been made to manage regulatory compliance, but no satisfactory solution has been developed (page 12, lines 24-30; paragraph [0025]). There is accordingly a need for a system that would, for a selected area of commercial or industrial

activity: store or access all relevant available information and changes used in connection with the activity; generate and archive records of software system versions used for: data entry, reporting, processing, analysis and results presentation, and changes to these versions; generate all documents and reports required for compliance under applicable regulations, laws and statutes; and provide appropriate user interface, without requiring (re)programming of underlying software (page 13, lines16-30; paragraph [0027]).

The invention meets the above needs with an integrated system that (1) provides one or more databases that contain information on operations and requirements concerning an activity or area of business; (2) monitors and evaluates the relevance of information on regulatory and non-regulatory changes that affect operations of the business and/or information management requirements; (3) converts the relevant changes into changes in work/task lists, data entry forms, reports, data processing, analysis and presentation (by printing, electronic display, network distribution and/or physical distribution) of data processing and analysis results to selected recipients without requiring the services of one or more programmers to re-program and/or recode the software items affected by the change; and (4) implements receipt of change information and dissemination of data processing and analysis results using the facilities of a network, such as the Internet (page 14, lines 2-14; paragraph [0028]).

In particular, independent claim 2 recites: *"A system for providing a dynamically generated application having one or more functions and one or more user interface elements; comprising:*

a server computer (for example as in a multi-tier server based model, see page 20, lines 14-15; paragraph [0050]);

one or more client computers connected to the server computer over a computer network (for example as in a multi-tier server based model, see page 20, lines 14-15; paragraph [0050]);

a first layer (for example a business content layer, see page 21, lines 1-11; paragraph [0054]) *associated with the server computer containing information about the unique aspects of a particular application*;

a second layer (for example a metadata layer, see page 21, lines 13-20) *associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers*;

a third layer (for example a Java data management layer, see page 24, lines 23-26; paragraph [0069]) *associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application; and*

a change management layer (page 28, lines 4-16; paragraph [0085]) *for automatically detecting* (box 21 in Fig. 2) *changes that affect an application,*

each client computer further comprising a browser application (page 26, lines 3-6; paragraph [0075]) *being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer* (page 26, lines 19-22; paragraph [0078]).

Also, independent claim 24 recites:

"*A method for dynamically generating an application using a server computer and one or more client computers connected to the server computer over a computer network* (for example as in a multi-tier server based model, see page 20, lines 14-15; paragraph

[0050]), *the method comprising:*

providing a first layer (for example a business content layer, see page 21, lines 1-11; paragraph [0054]) *containing information about the unique aspects of a particular application;*

providing a second layer (for example a metadata layer, see page 21, lines 13-20) *containing information about the user interface and functions common to a variety of applications, wherein a particular application is generated based on the data in the first and second layers;*

establishing a connection between a client computer and the server computer (see page 20, lines 14-15; paragraph [0050]);

providing a third layer (for example a Java data management layer, see page 24, lines 23-26; paragraph [0069]) *that retrieves the data in the first and second layers in order to generate the functionality and user interface for a particular application for the client computer as the client computer connects to the server computer;*

automatically detecting (box 21 in Fig. 2) *changes that affect a particular application* (page 28, lines 4-6; paragraph [0085]); *and*

distributing the user interface and functionality of the particular application to the client computer wherein the particular application and its user interface are dynamically re-generated each time a client establishes a connection with the server computer (page 26, lines 19-22; paragraph [0078])".

Further, independent claim 46 recites:

"*A server for dynamically generating an application for one or more client computers connected to the server computer by a computer network* (for example as in a multi-tier server based model, see page 20, lines 14-15; paragraph [0050]), *comprising:*

a first layer (for example a business content layer, see page 21, lines 1-11; paragraph [0054]) *associated with the server containing information about the unique aspects of a particular application;*

a second layer (for example a metadata layer, see page 21, lines 13-20) *associated with the server containing information about the user interface and functions common to a variety of applications;*

a third layer (for example a Java data management layer, see page 24, lines 23-26; paragraph [0069]) *that retrieves the data in the first and second layers in order to generate functionality and user interface elements of the application;*

a change management layer (page 28, lines 4-16; paragraph [0085]) *for automatically detecting* (box 21 in Fig. 2) *changes that affect an application;*

means for dynamically generating (page 26, lines 19-22; paragraph [0078]) *a particular application based on the first and second layers each time a client computer connects to the server computer; and*

means for distributing the user interface and functionality of the particular application to a client computer (page 26, lines 3-6; paragraph [0075])".

* * *

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Issue 1: Whether claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are patentable under 35 U.S.C. 102(e) over U.S. Pat. No. 5,960,200 to Eager.

ARGUMENT

Issue I: Whether claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are patentable under 35 U.S.C. 102(e) over U.S. Pat. No. 5,960,200 to Eager (hereinafter "Eager").

Rejection of claim 2

In a non-final action issued on September 5, 2006, the Examiner rejected claim 2 as being anticipated by U.S. 5,960,200 to Eager, under the rationale that:

-a business process layer taught by Eager reads on the first layer recited in claim 2;

-a functionality layer taught by Eager reads on the second layer recited in claim 2;

-a presentation layer taught by Eager reads on the third layer recited in claim 2; and

-a re-architecting system taught by Eager reads on the change management layer recited in claim 2.

In response to this previous action, the Appellants disagreed with the rationale of the Examiner, and argued that the business process layer (120) and functionality layer (130) of Eager are distinct from a data storage layer (150), so that they cannot read on the recited first and second layers "containing information".

In the Final action issued on February 28, 2006, the Examiner opines that the arguments above are not persuasive.

In particular, in response to the Appellant's arguments that Eager fails to teach the first layer containing information about the unique aspects of particular application, the Examiner opines that "Eager teaches a business process layer that corresponds to the first layer as claimed by the applicant (column 10, lines 33-41 and Fig. 1), and the business layer provides initial application menu or screen and initial objects to the interface engine (column 10, lines 38-41), in which the initial application menu or screen and initial objects correspond to the information contained in the first layer". The Examiner also opines that "although Eager does not explicitly disclose how long the information is contained in the business layer, the information could either be stored in the business layer in short period of time or in a long period of time; and in either case, Eager's teaching reads on the claimed language".

Also, in response to the Appellant's arguments that Eager fails to teach a second layer that contains information about the user interface and functions common to a variety of applications, the Examiner opines that "Eager teaches a functionality layer that corresponds to the second layer (column 12, lines 12-42 and Figs. 1, 8) and the information contained by the second layer is taught by Eager as the result information is generated by the functionality layer and later is

transferred to the business layer or the state router (column 12, lines 18-21)". The Examiner further opines that "although Eager does not explicitly disclose how long the result information is contained in the functionality layer, the result information could either be stored in the functionality layer in short period of time or in a long period of time; and in either case, Eager's teachings reads on the claimed language".

The Appellants respectfully submit that the interpretation the Examiner makes of the term "containing" is broader than the 'broadest reasonable interpretation' that one skilled in the art would make in light of the specification. Indeed, according to this interpretation, any single means through which data transit would read on means "containing" the data. Thus, for example a data bus would be considered as means containing data. However, one skilled in the art knows well that a data bus is a means that carries data, but does not contain data.

At least in view of the above, the Appellants submit that the interpretation the Examiner makes of Eager does not comply with section 2111.01(II) of the M.P.E.P, and request that the Examiner's rejection of claim 2 be overturned.

The Appellants further note that, even assuming, *arguendo,* that the interpretation the Examiner makes of the term "containing" were not broader than its broadest reasonable interpretation, Eager would still be very different from the invention as recited in claim 2.

Eager relates (see claim 1 of Eager) to an automated system for converting, or transitioning, legacy applications operable on a legacy computing system to a distributed infrastructure on a multi-tiered computer architecture. Eager provides, in particular, for "*an automated converter to transition the legacy application to a target application operable on the multi-tiered computer architecture*".

However, Eager teaches automatically converting an application operable in a legacy system to an application operable in a multi-tiered system. Nowhere does Eager disclose or suggest any feature for monitoring applications and detecting changes affecting the application, and in particular a change management layer for *"automatically detecting changes that affect an application"* as recited in claim 2.

In section 4 of the Final action of February 28, 2007, the Examiner opines that Eager shows "f) a change management layer for automatically detecting changes that affect an application (column 2, lines 34-57 and column 4, lines 42-51 and Figs. 1, 16, 17, 24; specifically, 'change management layer' corresponding to re-architecting system in Eager's teaching)". The Appellants respectfully disagree.

As to what is taught in column 2, lines 34-57 of Eager: the Appellants note that column 2, lines 34-57 of Eager recite that *"For each source application, there is a range of available transition choices, including the option of translating the source application to the new target architecture without changing any of the existing functionality and the option of re-engineering the source application by changing the existing functionality. The source application may also be replaceable by a commercial product or a custom application written in-house. The source applications are then transitioned in order of priority to the new architecture"*.

This passage teaches that Eager allows translating source applications to the new target architecture without changing the existing functionality. It also teaches that Eager allows re-engineering the source application by changing the existing functionality.

However, this passage does not relate to detecting changes in the

applications, and relates even less to automatically detecting such changes.

Column 2, lines 34-57 of Eager further recites, "*Specifically, a preferred system in accordance with the present invention includes the automated capability to translate existing source applications into new target applications on a multi-tiered client/server architecture. The translation of source applications to target applications includes the conversion of user interfaces, procedural languages, and data definitions. These conversions use a two-phase process where source program components written in the source languages are first translated to components in a common intermediate language. The intermediate language components are then translated to target program components in the target languages. By using a common intermediate language, only one translation module is required for each source and target language*".

This passage teaches that Eager allows automatically translating sources application.

This passage does not relate to detecting changes in the applications, or to automatically detecting such changes.

As to what is taught in Column 4, lines 42-51 of Eager: column 4, lines 42-51 recites that "*a preferred re-architecting system 20 includes a user interface conversion utility 210, a procedural language conversion utility 220, and a data definition language conversion utility 230. The procedural language conversion utility 220 is in communication with the functionality layer 130 and the data access layer 140 of the multi-tier architecture 10. The user interface conversion utility 210 is in communication with the user interface repository 152 and the data definition language conversion utility 230 is in communication with the data record repository 158*".

This passage discloses a preferred structure of a re-architecting system of Eager, but does not disclose or suggest any feature that would allow

"automatically detecting changes that affect an application" as recited in claim 2.

Further, the Appellants note that Eager discloses in column 6, lines 50-52, that *"the re-architect option translates the existing application to the new architecture without changing any of the existing functionality"*, and thus explicitly and unambiguously discloses that the "re-architecting" of Eager is not related to implementing (or detecting) any change that affects an application.

As to what is taught in Figure 1 of Eager: Figure 1 of Eager shows a re-architecting system 20 comprising *"a user interface conversion utility 210, a procedural language conversion utility 220, and a data definition language conversion utility 230"*.

The Appellants note that the Examiner has failed to show which of the features of system 20 would read on any feature that would allow *"automatically detecting changes that affect an application"* as recited in claim 2. Further, as detailed above, Eager discloses that the system's "re-architecting" is not related to handling changes in an application.

As to what is taught in Figure 16 of Eager: Figure 16 of Eager is a block diagram of the user interface conversion utility 210 of Fig. 1, which *"converts the user interface of an existing application represented by the source user interface definitions 211 into target user interface definitions 213 using the user interface converter 212"* (col. 23, lines 4-8).

As detailed above, Fig. 1 of Eager relates to a re-architecting system, wherein such re-architecting is done *"without changing any of the existing functionality"*. The Appellants note that the Examiner has failed to explain how a

portion of a system provided for implementing an operation devoid of change would disclose or suggest means for detecting changes, and in particular means for *"automatically detecting changes that affect an application"* as recited in claim 2.

As to what is taught in Figure 17 of Eager: Figure 17 of Eager is a flow diagram wherein *"the procedural language conversion utility 220 converts the functionality and data access programs of an existing application into the programming language targeted for the implementation of the functionality layer 130 (Fig. 1). This conversion process consists of two main phases. A first phase (Phase A) converts the source language 221 into an intermediary language 225. A second phase (Phase B) then transforms the intermediary language 225 into the final target language 227"* (col. 24, lines 45-53).

The Appellants note that Figure 17 only relates to converting a source application in a source language into a target application in a target language, and note that the Examiner has failed to show which part of the feature of figure 17 would read on means for *"automatically detecting changes that affect an application"* as recited in claim 2.

As to what is taught in Figure 24 of Eager: Figure 24 of Eager is a block diagram of the data definition language conversion utility 230 of Fig. 1 that is *"used to convert a source database language 231 into a target database language 237 using a database converter 234"* (col. 28, lines 11-14).

The Appellants note that Figure 24 only relates to converting a source language into a target language, and note that the Examiner has failed to show which part of the feature of figure 24 would read on means for *"automatically detecting changes that affect an application"* as recited in claim 2.

In addition to the above remarks, the Appellants note that the only mention of a change in an application is made in relation to GUI files 248, that are *"used by application developers and maintenance personnel to modify application screens and messages as part of the re-engineering system 30"* (col. 23, line 66 – col. 24, line 1).

The Appellants note that Eager teaches modifying applications in relation to Eager's re-engineering system, and not Eager's re-architecting system as opined by the Examiner.

Further, the Appellants note that Eager explicitly teaches that in the re-engineering system, it is *"application developers and maintenance personnel"* that *"modify application screens and messages"*, thus teaching away from any means that would operate *"automatically"*, and in particular that would allow *"automatically detecting changes that affect an application"* as recited in claim 2.

In conclusion, the Appellants note that Eager relates to means for automatically converting a source system into a target system, wherein:

-a re-architecting option allows translating applications in the source system *"without changing any of the existing functionality"*; and

-a re-engineering option allows *"application developers and maintenance personnel"* to *"modify application screens and messages"*, as seen above in relation to Figure 16.

Contrary to the Examiner's assertion, no part of Eager seems to disclose or suggest any such thing as means *"for automatically detecting changes that affect an application"* or *"a change management layer for automatically detecting changes that affect an application"* as recited in claim 2.

The Appellants note that when converting a source application into a target application, the converter of Eager parses (with parser 243) the language of the source application to convert it in a target application. If the source application has changed, one can assume that such change will be introduced in the target application. However, the Appellants note that there is no suggestion in Eager that the parsing of a source application having non-changed instruction as well as changed instructions would distinguish in any way the changed instructions from the non-changed instructions. Accordingly, parsing the source applications cannot be deemed to disclose or suggest "detecting" changes that affect an application. For this reason also, Eager cannot be argued to disclose or suggest *"a change management layer for automatically detecting changes that affect an application"* as recited in claim 2.

The Appellants respectfully submit that at least in view of the above, claim 2 is patentable over Eager, and respectfully request that the Examiner's rejection of claim 2 be properly overturned.

Rejection of claims 24 and 46

The Appellants respectfully submit that the arguments used above for showing that claim 2 is patentable over Eager can also be used to show that Eager does not disclose or suggest a method as recited in claim 24, and in particular comprising: *"automatically detecting changes that affect a particular application"* or a server as recited in claim 46, and in particular comprising *"a change management layer for automatically detecting changes that affect an application"*.

The Appellants respectfully submit that at least in view of the above, claims 24 and 46 are patentable over Eager, and respectfully request that the Examiner's rejection of claims 24 and 46 be properly overturned.

Rejection of claims 4-9, 11-23, 26-31, 33-45, 48-52 and 54-66

Claims 4-9 and 11-23 depend directly or indirectly on claim 2; claims 26-31 and 33-45 depend directly or indirectly on claim 2; and claims 48-52 and 54-66 depend directly or indirectly on claim 46.

Appellants note that "if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The Appellants respectfully submit that at least in light of the above discussion, dependent claims 4-9, 11-23, 26-31, 33-45, 48-52 and 54-66 are also allowable.

Further, as developed hereafter, the Appellants disagree with the specific rationale developed by the Examiner for rejecting the dependent claims.

Rejection of claim 4

In section 4 of the Final action of February 28, 2007, the Examiner opines that "as to claim 4, Eager teaches the third layer further comprises a Java data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second

layers (column 8, lines 3-22 and column 10, lines 7-26)". The Appellants respectfully disagree with the Examiner.

Column 8, lines 3-22 of Eager recites that "*an Open Systems Integration (OSI) process 469 is a manual implementation process that focuses on integrating applications that are purchased, newly custom developed, re-architected, or re-engineered to share data and screens. This process includes the definition of business goals and objectives, the definition of applicable business processes, the study of application interactions and data relationships, and the planning of hardware and software infrastructures. The OSI process 469 also includes the implementation of the integration, including detailed implementation plan and schedule and detailed requirements and design documentation, user acceptance testing, comprehensive technical documentation, and empowerment of support staff for the maintenance phase. One powerful example of integration at the user interface layer using the OSI process 469 is the creation of a corporate intranet using internet Hyper-Text Manipulation Language (HTML) or a highly-level language generating HTML, such as Java from Sun Microsystems to provide a user-friendly, platform independent, common user interface to corporate application*".

The Appellants note that the above excerpt does not recite the words "JAVA applet", and that the Examiner has failed to explain where the above excerpt would suggest using JAVA applets. It follows that the Examiner has also failed to explain where the above excerpt would suggest JAVA applets that "*dynamically generate and present*" "*user interface and functionality*" to a user" based on first and second layers.

Column 10, lines 7-26 of Eager recites that "*FIG. 5 is a schematic diagram of a sample mapping between application user interface representation structures 116 and display platform user interface representation structures 118. In the figure, the user interface display platform 115 is exemplified as Microsoft Windows 3.x and the display*

platform user interface representation structures 117 are thus the internal Windows 3.x management structures. However, other user interface display platforms 115 using similar internal structures to manage windows are supported by the exact same user interface engine 117. Notably, the Internet's world-wide web, based on the HTML or Java user interface languages, is another example of user interface display platform 115. Indeed, in a preferred embodiment of the present invention, the user interface engine 117 is written using Microsoft Visual C++ and based on the industry-standard Microsoft Foundations Classes (MFC) class library, which allows cross-platform development for Windows 3.x, Windows 95, Windows NT, MacOS, and UNIX-based user interface display platforms 115, including internet web servers".

The Appellants note that the above excerpt does not recite the words "JAVA applet", and that the Examiner has failed to explain where the above excerpt would suggest using JAVA applets. It follows that the Examiner has also failed to explain where the above excerpt would suggest JAVA applets that "*dynamically generate and present*" "*user interface and functionality*" to a user" based on first and second layers.

At least in view of the above, the Appellants respectfully submit that the Examiner has failed to show that Eager discloses or suggest the features recited in claim 4, and in particular "data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers".

The Appellants respectfully submit that, for this reason also, claim 4 is patentable over Eager.

Rejection of claims 26 and 48

Claim 26 depends on claim 24 and recites features corresponding to the features of claim 4. Claim 48 depends on claim 46 and recites features corresponding to the features of claim 4.

The Appellants note that the arguments used above to show that claim4 is patentable over Eager at least because Eager does not disclose or suggest "JAVA applets" as recited in claim 4 can also be used to show that claims 26 and 48 are patentable over Eager.

Rejection of claim 11

In section 4 of the Final action of February 28, 2007, the Examiner opines that "as to claims 11-12, Eager teaches the server computer further comprises the change management layer further comprises one or more intelligent agents that detects changes that affect an application (column 2, lines 34-57 and column 4, lines 42-51 and Figs. 1, 16, 17, 24; specifically, 'change management layer' corresponding to re-architecting system in Eager's teaching)". The Appellants respectfully disagree.

As detailed above, column 2, lines 34-57 of Eager recites that "*For each source application, there is a range of available transition choices, including the option of translating the source application to the new target architecture without changing any of the existing functionality and the option of re-engineering the source application by changing the existing functionality. The source application may also be replaceable by a commercial product or a custom application written in-house. The source applications are then transitioned in order of priority to the new architecture*".

This passage teaches that Eager allows translating sources application to the new target architecture without changing the existing functionality. It also teaches that Eager allows re-engineering the source application by changing the existing functionality.

However, this passage does not relate to detecting changes in the applications, and relates even less to detecting automatically such changes.

Column 2, lines 34-57 of Eager further recites, "*Specifically, a preferred system in accordance with the present invention includes the automated capability to translate existing source applications into new target applications on a multi-tiered client/server architecture. The translation of source applications to target applications includes the conversion of user interfaces, procedural languages, and data definitions. These conversions use a two-phase process where source program components written in the source languages are first translated to components in a common intermediate language. The intermediate language components are then translated to target program components in the target languages. By using a common intermediate language, only one translation module is required for each source and target language*".

This passage teaches that Eager allows automatically translating sources application.

Column 2, lines 34-57 of Eager does not disclose or suggest detecting changes in the applications. It follows that contrary to the assertion of the Examiner, column 2, lines 34-57 of Eager does not disclose or suggest means for detecting changes, and in particular such as "*one or more intelligent agents that detect changes that affect an application*" as recited in claim 11.

Similarly, column 4, lines 42-51 of Eager recites that "*a preferred re-architecting system 20 includes a user interface conversion utility 210, a procedural*

language conversion utility 220, and a data definition language conversion utility 230. The procedural language conversion utility 220 is in communication with the functionality layer 130 and the data access layer 140 of the multi-tier architecture 10. The user interface conversion utility 210 is in communication with the user interface repository 152 and the data definition language conversion utility 230 is in communication with the data record repository 158".

Further, as detailed above, Eager discloses in column 6, lines 50-52, that "re-architecting" "*translates the existing application to the new architecture without changing any of the existing functionality*", thus teaching away from the idea of implementing or detecting changes.

It follows that column 4, lines 42-51 of Eager discloses a preferred structure of a re-architecting system of Eager, but does not disclose or suggest detecting changes in the applications. Contrary to the assertion of the Examiner, column 4, lines 42-51 of Eager does therefore not disclose or suggest means for detecting changes, and in particular such as "*one or more intelligent agents that detect changes that affect an application*" as recited in claim 11.

Similarly, Figure 1 of Eager shows a re-architecting system 20 comprising "*a user interface conversion utility 210, a procedural language conversion utility 220, and a data definition language conversion utility 230*".

As detailed above, the "re-architecting" of Eager is not related to handling changes in an application. The Appellants further note that the Examiner has failed to point out which of the above utilities/features would disclose or suggest means for detecting changes, and in particular such as "*one or more intelligent agents that detect changes that affect an application*" as recited in claim 11.

Figure 16 of Eager shows a block diagram of the user interface conversion utility 210 of Fig. 1, which *"converts the user interface of an existing application represented by the source user interface definitions 211 into target user interface definitions 213 using the user interface converter 212"* (col. 23, lines 4-8).

As detailed above, Fig. 1 of Eager relates to a re-architecting system, wherein such re-architecting is done *"without changing any of the existing functionality"*. The Appellants note that the Examiner has failed to explain how a portion of a system provided for implementing an operation devoid of change would disclose or suggest means for detecting changes, and in particular *"intelligent agents"* such as *"one or more intelligent agents that detect changes that affect an application"* as recited in claim 11.

Figure 17 of Eager shows a flow diagram wherein *"the procedural language conversion utility 220 converts the functionality and data access programs of an existing application into the programming language targeted for the implementation of the functionality layer 130 (Fig. 1). This conversion process consists of two main phases. A first phase (Phase A) converts the source language 221 into an intermediary language 225. A second phase (Phase B) then transforms the intermediary language 225 into the final target language 227"* (col. 24, lines 45-53).

The Appellants note that Figure 17 only relates to converting a source application in a source language into a target application in a target language, and note that the Examiner has failed to show which part of the feature of figure 17 would disclose or suggest means for detecting changes, and in particular *"intelligent agents"* such as *"one or more intelligent agents that detect changes that affect an application"* as recited in claim 11.

Figure 24 of Eager is a block diagram of the data definition language conversion utility 230 of Fig. 1 that is *"used to convert a source database language 231 into a target database language 237 using a database converter 234"* (col. 28, lines 11-14).

The Appellants note that Figure 24 only relates to converting a source language into a target language, and note that the Examiner has failed to show which part of the feature of figure 24 would disclose or suggest means for detecting changes, and in particular *"intelligent agents"* such as *"one or more intelligent agents that detect changes that affect an application"* as recited in claim 11.

In conclusion, contrary to the Examiner's assertion, Eager does not disclose or suggest means for detecting changes, and in particular *"intelligent agents"* such as *"one or more intelligent agents that detect changes that affect an application"* as recited in claim 11.

In view of the above also, claim 11 is patentable over Eager.

Rejection of claim 12

In section 4 of the Final action of February 28, 2007, the Examiner opines that "as to claims 11-12, Eager teaches the server computer further comprises the change management layer further comprises one or more intelligent agents that detects changes that affect an application (column 2, lines 34-57 and column 4, lines 42-51 and Figs. 1, 16, 17, 24; specifically, 'change management layer' corresponding to re-architecting system in Eager's teaching)". The Appellants respectfully disagree.

As detailed above in relation to claim 11, none of the above excerpts or

figures disclose or even remotely suggest means for detecting changes, and in particular *"intelligent agents"* such as *"one or more intelligent agents that detect changes that affect an application"* as recited in claim 11.

Claim 12 depends on claim 11 and recites *"means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents"*.

The Appellants note that since as seen above, Eager and in particular "column 2, lines 34-57 and column 4, lines 42-51 and Figs. 1, 16, 17, 24; specifically, 'change management layer' corresponding to re-architecting system in Eager's teaching" does not disclose or suggest *"intelligent agents that detect changes that affect an application"*.

It follows that Eager and in particular "column 2, lines 34-57 and column 4, lines 42-51 and Figs. 1, 16, 17, 24; specifically, 'change management layer' corresponding to re-architecting system in Eager's teaching" can also not be deemed to disclose or suggest means for operating in response to such intelligent agent, such as the *"means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents"* recited in claim 12.

In view of the above also, claim 12 is patentable over Eager.

Rejection of claims 13-21

In section 4 of the Final action of February 28, 2007, the Examiner opines that "as to claims 13-21, Eager teaches a builder module for permitting a user to

build a user interface for a particular application using the second layer (see facilitation tools 360 in Figs. 2 and 33). The Appellants respectfully disagree.

Claim 21 recites a builder module that "*comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application*".

The Appellants note that the arguments used above to show that Eager does not disclose or suggest "intelligent agents" as recited in claim 11 can also be used to show that Eager does not disclose or suggest an "*intelligent agent builder*" as recited in claim 21.

In view of the above also, claim 21 is patentable over Eager.

Rejection of claims 33, 34, 43, 54, 55, 64

Claims 33, 34 and 43 depend on claim 24 and recite features corresponding to the features of claims 11, 12 and 21. Claims 54, 55 and 64 depend on claim 46 and recite features corresponding to the features of claims 11, 12 and 21.

The Appellants note that the arguments used above to show that claims 11, 12 and 21 are patentable over Eager at least because Eager does not disclose or suggest "intelligent agents" as recited in claims 11, 12 and 21 can also be used to show that claims 33, 34 and 43 as well as claims 54, 55 and 64 are patentable over Eager.

* * *

CONCLUSION

For the extensive reasons advanced above, Appellants respectfully contend that each claim is patentable. Therefore, reversal of the above-addressed rejections and objections and re-opening of the prosecution is respectfully solicited.

The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being electronically filed by EFS-Web in the United States Patent and Trademark Office on August 28, 2007 (Date of Transmission) Joanna Sosa (Name of Person Transmitting) Joanna Sosa (Signature)	Respectfully submitted, Alessandro Steinfl Attorney for the Appellants Reg. No. 28,145 LADAS & PARRY 5670 Wilshire Boulevard, Suite 2100 Los Angeles, California 90036 (323) 934-2300 voice (323) 934-0202 facsimile

8-28-07 (Date)		

Attachments: Claims 4-9, 11-23, 26-31, 33-45, 48-52 and 54-66

CLAIMS APPENDIX

1. (canceled)

2. A system for providing a dynamically generated application having one or more functions and one or more user interface elements; comprising:

a server computer;

one or more client computers connected to the server computer over a computer network;

a first layer associated with the server computer containing information about the unique aspects of a particular application ;

a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers;

a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application; and

a change management layer for automatically detecting changes that affect an application,

each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and

dynamically generated when the client computer connects to the server computer.

3. (canceled)

4. The system of Claim 2, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

5. The system of Claim 2, wherein the second layer comprises a business content database having data about one or more different predetermined business applications.

6. The system of Claim 5, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

7. The system of Claim 5, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

8. The system of Claim 7, wherein the metadata database further comprises data about the user interface and functionality including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

9. The system of Claim 2, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access.

10. (canceled)

11. The system of Claim 2, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

12. The system of Claim 11, wherein the server further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

13. The system of Claim 2, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.

14. The system of Claim 13, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.

15. The system of Claim 13, wherein the builder module further comprises an event builder for generating triggering events for a form.

16. The system of Claim 13, wherein the builder module further comprises a report builder for building a report for a particular application.

17. The system of Claim 13, wherein the builder module further comprises a document builder for mapping a document onto the first layer.

18. The system of Claim 13, wherein the builder module further comprises a formula builder for generating formulas.

19. The system of Claim 16, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.

20. The system of Claim 13, wherein the builder module further comprises a worklist builder for generating a worklist.

21. The system of Claim 13, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.

22. The system of Claim 2, wherein the first and second layers are stored on the server computer.

23. The system of Claim 2, wherein the first and second layers are distributed across one or more server computers.

24. A method for dynamically generating an application using a server computer and one or more client computers connected to the server computer over a computer network, the method comprising:

providing a first layer containing information about the unique aspects of a particular application;

providing a second layer containing information about the user interface and functions common to a variety of applications, wherein a particular application is generated based on the data in the first and second layers;

establishing a connection between a client computer and the server computer;

providing a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface for a particular application for the client computer as the client computer connects to the server computer;

automatically detecting changes that affect a particular application; and

distributing the user interface and functionality of the particular application to the client computer wherein the particular application and its user interface are dynamically re-generated each time a client establishes a connection with the server computer.

25. (canceled)

26. The method of Claim 24, wherein the third layer further comprises a JAVA data management layer that distributes one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

27. The method of Claim 24, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.

28. The method of Claim 27, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

29. The method of Claim 27, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

30. The method of Claim 29, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

31. The method of Claim 24, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access.

32. (canceled)

33. The method of Claim 24, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

34. The method of Claim 33, wherein automatically detecting changes further comprises automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

35. The method of Claim 24 further comprising permitting a user to build a user interface for a particular application using the second layer.

36. The method of Claim 35, wherein the building further comprises one or more of editing an existing form and generating a new form that contains the data for a particular application.

37. The method of Claim 35, wherein the building further comprises generating triggering events for a form.

38. The method of Claim 35, wherein the building further comprises building a report for a particular application.

39. The method of Claim 35, wherein the building further comprises mapping a document onto the first layer.

40. The method of Claim 35, wherein the building further comprises generating formulas associated with the application.

41. The method of Claim 38, wherein the building further comprises generating one or more views/queries used in the reports.

42. The method of Claim 35, wherein the building further comprises generating a worklist.

43. The method of Claim 35, wherein the building further comprises generating the intelligent agents that detect changes associated with the particular business application.

44. The method of Claim 24 further comprising distributing the first and the second layers on the server computer.

45. The method of Claim 24 further comprising distributing the first and second layers across one or more server computers.

46. A server for dynamically generating an application for one or more client computers connected to the server computer by a computer network, comprising:

a first layer associated with the server containing information about the unique aspects of a particular application;

a second layer associated with the server containing information about the user interface and functions common to a variety of applications;

a third layer that retrieves the data in the first and second layers in order to generate functionality and user interface elements of the application;

a change management layer for automatically detecting changes that affect an application;

means for dynamically generating a particular application based on the first and second layers each time a client computer connects to the server computer; and

means for distributing the user interface and functionality of the particular application to a client computer.

47. (canceled)

48. The server of Claim 46, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

49. The server of Claim 46, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.

50. The server of Claim 49, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

51. The server of Claim 49, wherein the second layer comprises a metadata

database comprising data about the structures and functions associated with any application.

52. The server of Claim 51, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

53. (canceled)

54. The server of Claim 46, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

55. The server of Claim 54, wherein the change management layer further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

56. The server of Claim 46, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.

57. The server of Claim 56, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.

58. The server of Claim 56, wherein the builder module further comprises an event builder for generating triggering events for a form.

59. The server of Claim 56, wherein the builder module further comprises a report builder for building a report for a particular application.

60. The server of Claim 56, wherein the builder module further comprises a document builder for mapping a document onto the first layer.

61. The server of Claim 56, wherein the builder module further comprises a formula builder for generating formulas.

62. The server of Claim 59, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.

63. The server of Claim 56, wherein the builder module further comprises a worklist builder for generating a worklist.

64. The server of Claim 56, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.

65. The server of Claim 46, wherein the first and second layers are distributed on the server computer.

66. The server of Claim 46, wherein the first and second layers are distributed across one or more server computers.

67. – 155. (canceled)

EVIDENCE APPENDIX

There is no evidence submitted with the present Appeal Brief.

RELATED PROCEEDINGS APPENDIX

There are no other appeals or interferences related to the present application.

PTO/SB/22 (06-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) B-5746CONT 952776-6
Application Number 09/797,488	Filed March 1, 2001
For INTEGRATED CHANGE MANAGEMENT SYSTEM	
Art Unit 3694	Examiner Cheung, Mary Da Zhi Wang

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☑ One month (37 CFR 1.17(a)(1))	$120	$60	$ 120.00
☐ Two months (37 CFR 1.17(a)(2))	$450	$225	$
☐ Three months (37 CFR 1.17(a)(3))	$1020	$510	$
☐ Four months (37 CFR 1.17(a)(4))	$1590	$795	$
☐ Five months (37 CFR 1.17(a)(5))	$2160	$1080	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 12-0415. I have enclosed a duplicate copy of this sheet.

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.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☐ attorney or agent of record. Registration Number _____

☑ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 56,448

Signature — August 28, 2007 (Date)

Alessandro Steinfl — (323) 934-2300

Typed or printed name — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

Electronic Patent Application Fee Transmittal

Application Number:	09797488
Filing Date:	01-Mar-2001
Title of Invention:	Integrated change management unit
First Named Inventor/Applicant Name:	Richard Frankland
Filer:	Robert Popa/Joanna Sosa
Attorney Docket Number:	104632-991101

Filed as Large Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Filing a brief in support of an appeal	1402	1	500	500
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	1251	1	120	120
Miscellaneous:				
			Total in USD ($)	**620**

Electronic Acknowledgement Receipt

EFS ID:	2132603
Application Number:	09797488
International Application Number:	
Confirmation Number:	4851
Title of Invention:	Integrated change management unit
First Named Inventor/Applicant Name:	Richard Frankland
Customer Number:	36716
Filer:	Robert Popa/Joanna Sosa
Filer Authorized By:	Robert Popa
Attorney Docket Number:	104632-991101
Receipt Date:	28-AUG-2007
Filing Date:	01-MAR-2001
Time Stamp:	15:39:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	$620
RAM confirmation Number	848
Deposit Account	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)

1	Appeal Brief Filed	952776Brief-on-Appeal.pdf	1463359 004981a1d506861ae7c0ed597862f43c020e403b	no	41
Warnings:					
Information:					
2	Extension of Time	952776Ext-of-Time.pdf	53804 733db323ab54c15758df6c02f758ee74d447dea4	no	1
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8301 dc18921bbd7783844b90ee8c8b62b214ef0e50a1	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	1525464	

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.

ORIGINAL

PTO/SB/31 (04-07)
Approved for use through 09/30/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

AF $ DW

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket Number (Optional)
952776-6 /B-5746 / AS
104632-991101

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on 24, May 2007

Signature: Diane Osollo

Typed or printed name: Diane Osollo

In re Application of: Richard Frankland, et al.

Application Number	Filed
09/797,488	3/01/2001

For "Integrated Change Management System"

Art Unit	Examiner
3694	CHEUNG, Mary D. Z. W.

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 500.00

- ☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ _____
- ☒ A check in the amount of the fee is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.

05/30/2007 CNEGA1 00000039 09797488
01 FC:1401 500.00 OP

- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 12-0415. I have enclosed a duplicate copy of this sheet.
- ☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☐ attorney or agent of record. Registration number _____
- ☒ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. 56,448

Signature: Al Steinfl

Alessandro Steinfl, Esq.
Typed or printed name

(323) 934-2300
Telephone number

May 24, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

UNITED STATES PATENT AND TRADEMARK OFFICE

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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

36716 7590 02/28/2007

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	**PAPER NUMBER**
3694	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3694	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *22 November 2006*.

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

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

Disposition of Claims

4)☒ Claim(s) *2,4-9,11-24,26-31,33-46,48-52 and 54-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4-9,11-24,26-31,33-46,48-52 and 54-66* is/are rejected.

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

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

Application Papers

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

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

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

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

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. This action is in response to the response filed on November 22, 2006. Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are pending.

Response to Arguments

2. Applicant's arguments filed November 22, 2006 have been fully considered but they are not persuasive.

In response to the applicant's arguments that Eager (US 5,960,200) fails to teach the first layer containing information about the unique aspects of particular application, Eager teaches a business process layer that corresponds to the first layer as claimed by the applicant (column 10 lines 33-41 and Fig. 1), and the business layer provides initial application menu or screen and initial objects to the interface engine (column 10 lines 38-41), in which the initial application menu or screen and initial objects correspond to the information contained in the first layer. Although Eager does not explicitly disclose how long the information is contained in the business layer, the information could either be stored in the business layer in short period of time or in a long period of time; and in either case, Eager's teaching reads on the claimed language.

In response to the applicant's arguments that Eager fails to teach the second layer contains information about the user interface and functions common to a variety of applications, Eager teaches a functionality layer that corresponds to the second layer (column 12 lines 12-42 and Figs. 1, 8), and the information contained by the second layer is taught by Eager as the result information is generated by the functionality layer

and later is transferred to the business layer or the state router (column 12 lines 18-21). Although Eager does not explicitly disclose how long the result information is contained in the functionality layer, the result information could either be stored in the functionality layer in short period of time or in a long period of time; and in either case, Eager's teaching reads on the claimed language.

The applicant further argues that none of the data is generated in the second layer as addressed in claim 5. Examiner believes that such concept is not clearly stated in the claim.

Claim Rejections - 35 USC § 102

3. 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.

4. Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Eager et al., U. S. Patent 5,960,200.

As to claims 2 and 22-23, Eager teaches a system for providing a dynamic generated application having one or more functions and one or more user interface elements, comprising (abstract and Figs. 4, 7):

a) A server computer (Fig. 7);

b) One or more client computers connected to the server computer over a computer network (Fig. 7);

c) A first layer associated with the server computer containing information about the unique aspects of a particular application (column 10 lines 33-41 and Fig. 1; *specifically, "first layer" corresponds to the business process layer in Eager's teaching*);

d) a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers (column 12 lines 12-42 and Figs. 1, 8; *specifically, "second layer" corresponds to the functionality layer in Eager's teaching*);

e) a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application (column 12 lines 38-43 and Figs. 1, 8; *specifically, "third layer" corresponds to the presentation layer in Eager's teaching*);

f) a change management layer for automatically detecting changes that affect an application (column 2 lines 34-57 and column 4 lines 42-51 and Figs. 1, 16-17, 24; *specifically, "change management layer" corresponds to re-architecting system in Eager's teaching*).

g) Each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically

generated when the client computer connects to the server computer (column 10 line 33 – column 11 line 57 and column 12 lines 12-42 and Figs. 1, 4, 8).

As to claim 4, Eager teaches the third layer further comprises a Java data management layer having means for distributing one or more Java applets to the client computer wherein the Java applets dynamically generate and present the user interface and functionality to the user based on the first and the second layers (column 8 lines 3-22 and column 10 lines 7-26 and Fig. 1).

As to claims 5-8, Eager teaches the second layer comprises a business content database having data about one or more different predetermined business applications (column 12 lines 12-42 and Figs. 1, 8, 11, 30).

As to claim 9, Eager teaches each client computer further comprises a Java enabled web browser to permit remote user access (column 8 lines 3-22 and column 10 lines 7-26 and Figs. 1, 7).

As to claims 11-12, Eager teaches the server computer further comprises the change management layer further comprises one or more intelligent agents that detects changes that affect an application (column 2 lines 34-57 and column 4 lines 42-51 and Figs. 1, 16-17, 24).

As to claims 13-21, Eager teaches a builder module for permitting a user to build a user interface for a particular application using the second layer (see facilitation tools 360 in Figs. 1 and 33).

As to claims 24, 26-31, 33-46, 48-52 and 54-66, the limitations are parallel with claims 2, 4-9 and 11-23; thus, they are rejected on same basis.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (571)-272-6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final Communications labeled "BOX AF")

(571) 273-6705 (Draft Communications)

Mary Cheung
February 16, 2007

MARY D. CHEUNG
PRIMARY EXAMINER

Index of Claims

Application No.	Applicant(s)	
09/797,488	FRANKLAND ET AL.	
Examiner	**Art Unit**	
Mary Cheung	3621	

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	3/29/05	8/24/05	1/13/06	8/4/06	2/16/07				
	1	-								
	2	√	√	√	√	√				
	3	√	√	√	-					
	4	√	√	√	√	√				
	5	√	√	√	√	√				
	6	√	√	√	√	√				
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	46	√	√	√	√	√				
	47	√	√	√	-					
	48	√	√	√	√	√				
	49	√	√	√	√	√				
	50	√	√	√	√	√				

Claim		Date								
Final	Original	3/29/05	8/24/05	1/13/06	8/4/06	2/16/07				
	51	√	√	√	√	√				
	52	√	√	√	√	√				
	53	√	√	√	-					
	54	√	√	√	√	√				
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	56	√	√	√	√	√				
	57	√	√	√	√	√				
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Claim		Date								
Final	Original	3/29/05	8/24/05							
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LADAS & PARRY

FACSIMILE TRANSMITTAL

570 Wilshire Boulevard, Suite 2100
Los Angeles, California 90036-5679
Telephone: (323) 934-2300
Facsimile: (323) 934-0202

DELIVER TO: Examiner Cheung, Mary Da Zhi Wang Art Unit 3621

COMPANY: United States Patent and Trademark Office

FAX NUMBER: (571) 273-8300

FROM: Alessandro Steinfl

DATE: November 22, 2006

TOTAL NO. OF PAGES (INCLUDING THIS PAGE): 6

SUBJECT : **Response**
U.S. Application No. 09/797,488
Richard Frankland et al.
"Integrated Change Management Unit"
Our Ref: B-5746CONT 952776-6/AS

REMARKS:

Examiner Cheung:

Enclosed is a response to the Office Action mailed on September 5, 2006 consisting of:

Response – 5 pages

If transmission incomplete, please call (323) 934-2300 and ask for the operator named above.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Richard Frankland et al.	Group Art No.: 3621
Application No: 09/797,488	Examiner: Cheung, Mary Da Zhi Wang
Filed: March 1, 2001	Re: **RESPONSE**
For: "INTEGRATED CHANGE MANAGEMENT UNIT"	Our Ref: B-5746CONT 952776-6/AS
	Date: November 22, 2006

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

Dear Sir:

This paper is filed in response to the no-final Action dated September 5, 2006. Please enter the following remarks into the prosecution history of the subject application.

Remarks begin on page 2 of this paper.

* * *

REMARKS

1. Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are pending in the present application. The Applicants thanks the Examiner for the Examiner's comments in section 2 of the Action of September 5, 2006 concerning the amendments to the office action to bettwe match the claim language.

2. In section 4 of the Action the Examiner rejects all pending claims under 35 USC § 102(e) as being anticipated by U.S. Pat. No. 5,960,200 to Eager. The Applicants respectfully disagree.

The Examiner is of the opinion that the first layer of Applicants' claimed invention is anticipated by Eager's business process layer 120, the second layer is anticipated by Eager's functionality layer 130, and the third layer of your invention is anticipated by Eager's presentation layer 110. Further, the change management layer of Applicants' invention is, in the Examiner's opinion, the re-architecting system 20. Applicants note that reference can also be made to Figures 8 and 9 of Eager, which show in better detail the interactions between layers 110, 120 and 130 in Eager. In particular, the rationale of the Examiner can be found in section 4 of the Action with reference, in particular, to pages 3 and 4, paragraphs a) through g).

However, Applicants note that the "*first layer*" recited in claim 2 of the present application "*contain[s] information about the unique aspects of a particular application*," the "second layer" "*contain[s] information about the user interface and functions common to a variety of applications*" and the "*third layer . . . retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.*"

To the contrary, from what described in Eager, it appears that business process layer 120 and functionality layer 130 do not contain information (or data). If the Examiner looks at Eager's Figure 1, she will note the presence of a data storage layer 150 which is separate from layers 120

and 130, which layer 150 interacts with layers 120, 130 through a data access layer 140. Also Figure 8 shows objects such as data records 129 which are actions taken by layer 120 on data coming from elsewhere and not data/information contained in layer 120. This is also clear from the diagram of Figure 9, where the database servers 140, although interacting with layers 110, 120 and 130, are separated therefrom.

In paragraph c) of section 4) of the Action the Examiner makes reference to column 10, lines 33-41 of Eager when addressing the rejection about the first layer. However, that passage does not recite that business process layer 120 "*contain[s] information about [an] application*" as recited in claim 2 of the present application.

In paragraph d) of section 4) of the action the Examiner makes reference to column 12, lines 12-42 of Eager when addressing the rejection about the second layer. That passage makes reference to Fig. 8 of Eager, which shows functionality layer 130. However, that passage does not recite that functionality layer 130 "*contain[s] information about the user interface and functions common to a variety of applications*". Lines 18-19 of that passage state that information is passed, not contained. In other words, functionality layer 130 (and, similarly, business process layer 120) does process information but does not contain that information. The information processed by layer 130 (and by layer 120) comes from data storage layer 150. Layers 120 and 130 act on data originated by other sources, instead of containing data themselves.

In paragraph e) of section 4) of the action the Examiner makes reference to column 12, lines 38-43 of Eager when addressing the rejection about the third layer. That paragraph states that information is carried between layers 110 and 120. However, this does not appear to imply that either layer 110 or layer 120 store data. Such information is carried from layer 150.

The Examiner should also note that the concept that the second layer according to the Applicant's invention contains data is also addressed by claim 5 which recites that "*the second layer comprises a business content database.*" The Examiner rejects that claim at page 4 of the

Action (third paragraph from the bottom) by stating that it is anticipated by column 12, lines 12-42 and Figs. 1, 8, 11 and 30 of Eager. However, none of the data shown in those figures appears to be generated in the functionality layer 130. Similar considerations apply to claim 7.

Therefore, the Applicants submit that claim 2 is not anticipated by Eager. Similar considerations apply to independent claims 24 and 46. The remaining claims are also deemed to be patentable at least by virtue of their dependency on independent claims 1, 24 and 46.

* * *

The Applicants submit that all claims of the application as currently pending are in condition for allowance. Prompt issuance of a Notice of Allowance is earnestly solicited.

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The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, fax no. (571)-273-8300 on

November 22, 2006
(Date of Deposit)

Alessandro Steinfl
(Name of Person Depositing)

Signature

11/22/06
Date

Respectfully submitted,

Alessandro Steinfl
Attorney for Applicants
Reg. No. 56,448
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

36716 7590 09/05/2006

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	PAPER NUMBER
3621	

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3621	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *08 May 2006*.

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

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

Disposition of Claims

4)☒ Claim(s) *2,4-9,11-24,26-31,33-46,48-52 and 54-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4-9,11-24,26-31,33-46,48-52 and 54-66* is/are rejected.

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

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

Application Papers

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

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

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

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

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/19/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. This action is in response to the RCE filed on May 18, 2006. Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are pending. Claims 1, 3, 10, 25, 32, 47, 53 and 67-155 are canceled. Claims 2, 4, 9, 11, 24, 26, 31, 33, 46, 48 and 54 are currently amended.

Response to Arguments

2. Applicant's arguments filed May 18, 2006 have been fully considered but they are not persuasive.

In response to the applicant's arguments, examiner has amended the office action for better match the claim language. As discussed in claim 2 below, Eager (US 5,960,200) teaches: a business process layer that corresponds to the first layer as claimed by the applicant (column 10 lines 33-41 and Fig. 1); a functionality layer that corresponds to the second layer (column 12 lines 12-42 and Figs. 1, 8); a presentation layer that corresponds to the third layer (column 12 lines 38-43 and Figs. 1, 8); and re-architecting system that corresponds to the change management layer (column 2 lines 34-57 and column 4 lines 42-51 and Figs. 1, 16-17, 24).

Claim Rejections - 35 USC § 102

3. 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.

4. Claims 2, 4-9, 11-24, 26-31, 33-46, 48-52 and 54-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Eager et al., U. S. Patent 5,960,200.

As to claims 2 and 22-23, Eager teaches a system for providing a dynamic generated application having one or more functions and one or more user interface elements, comprising (abstract and Figs. 4, 7):

a) A server computer (Fig. 7);

b) One or more client computers connected to the server computer over a computer network (Fig. 7);

c) A first layer associated with the server computer containing information about the unique aspects of a particular application (column 10 lines 33-41 and Fig. 1; *specifically, "first layer" corresponds to the business process layer in Eager's teaching*);

d) a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers (column 12 lines 12-42 and Figs. 1, 8; *specifically, "second layer" corresponds to the functionality layer in Eager's teaching*);

e) a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application (column 12 lines 38-43 and Figs. 1, 8; *specifically, "third layer" corresponds to the presentation layer in Eager's teaching*);

f) a change management layer for automatically detecting changes that affect an application (column 2 lines 34-57 and column 4 lines 42-51 and Figs. 1, 16-17, 24; *specifically, "change management layer" corresponds to re-architecting system in Eager's teaching*).

g) Each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer (column 10 line 33 – column 11 line 57 and column 12 lines 12-42 and Figs. 1, 4, 8).

As to claim 4, Eager teaches the third layer further comprises a Java data management layer having means for distributing one or more Java applets to the client computer wherein the Java applets dynamically generate and present the user interface and functionality to the user based on the first and the second layers (column 8 lines 3-22 and column 10 lines 7-26 and Fig. 1).

As to claims 5-8, Eager teaches the second layer comprises a business content database having data about one or more different predetermined business applications (column 12 lines 12-42 and Figs. 1, 8, 11, 30).

As to claim 9, Eager teaches each client computer further comprises a Java enabled web browser to permit remote user access (column 8 lines 3-22 and column 10 lines 7-26 and Figs. 1, 7).

As to claims 11-12, Eager teaches the server computer further comprises the change management layer further comprises one or more intelligent agents that detects

changes that affect an application (column 2 lines 34-57 and column 4 lines 42-51 and Figs. 1, 16-17, 24).

As to claims 13-21, Eager teaches a builder module for permitting a user to build a user interface for a particular application using the second layer (see facilitation tools 360 in Figs. 1 and 33).

As to claims 24, 26-31, 33-46, 48-52 and 54-66, the limitations are parallel with claims 2, 4-9 and 11-23; thus, they are rejected on same basis.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (571)-272-6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final Communications labeled "BOX AF")

(571) 273-6705 (Draft Communications)

Mary Cheung
Primary Examiner
Art Unit 3621
August 4, 2006

MARY D. CHEUNG
PRIMARY EXAMINER

Form PTO-1449 (Modified)	ATTY DOCKET NO. B-5746CONT 952776-6	U.S. SERIAL NO. 09/797,488
LIST OF PATENTS AND PUBLICATIONS STATEMENT	APPLICANTS Frankland, et al.	
	FILING DATE March 1, 2001	GROUP 3621

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	ISSUE DATE	NAME	CLASS	SUB-CLASS	FILING DATE or 102(e) DATE IF APPROPRIATE
MC	4,803,039 A	2/1989	Impink Jr., et al.	376	216	
	5,185,699 A	2/1993	Reiner, et al.	707	531	
	5,532,928 A	7/1996	Stanczyk, et al.	705	7	
	5,664,112 A	9/1997	Sturgeon, et al.	705	28	
	5,712,990 A	1/1998	Henderson	705	28	
	5,726,884 A	3/1998	Sturgeon, et al.	705	9	
	5,965,858 A	10/1999	Suzuki, et al.	235	375	
	6,067,549 A	5/2000	Smalley, et al.	707	104	
	6,097,995 A	8/2000	Tipton, et al.	700	266	
	6,122,622 A	9/2000	Wiitala, et al.	705	28	
	6,163,732 A	12/2000	Petke, et al.	700	106	
	6,341,287 B1	1/2002	Sziklai, et al.	707	102	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED
/Mary Cheung/ (08/03/2006)	08/03/2006

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.

Index of Claims

Application No.	Applicant(s)
09/797,488	FRANKLAND ET AL.
Examiner	**Art Unit**
Mary Cheung	3621

√	**Rejected**	–	**(Through numeral) Cancelled**	N	**Non-Elected**	A	**Appeal**
=	**Allowed**	÷	**Restricted**	I	**Interference**	O	**Objected**

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	140	√	-
	141	√	-
	142	√	-
	143	√	-
	144	√	-
	145	√	-
	146	√	-
	147	√	-
	148	√	-
	149	√	-
	150	√	-

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number 09/797,488

5-19-06

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))							
SEARCH FEE (37 CFR 1.16(k), (i), or (m))							
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))							
TOTAL CLAIMS (37 CFR 1.16(i))	59 minus 54 =	0	x =		OR	x =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	0	x =			x =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	-0-		TOTAL	-0-

APPLICATION AS AMENDED – PART II

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

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

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

AF

TFW 3621

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Richard Frankland, et al.	) Re: Information Disclosure Statement
Serial No.: 09/797,488	)
	) Group: 3621
Filed: March 1, 2001	)
	) Examiner: Mary Cheung
For: "INTEGRATED CHANGE MANAGEMENT UNIT"	)
	) Our Ref: B-5746CONT 952776-6
	)
	) Date: May 16, 2006

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

Sir:

In accordance with the Applicants' duty to disclose information which may be material to the examination of this application, the undersigned respectfully requests that the Examiner consider on the merits the documents listed on the enclosed Form PTO-1449 (modified) before issuing the first Office Action on the merits. Copies of the U.S. patent documents listed on the enclosed Form PTO-1449 (modified) are not enclosed in accordance with 37 C.F.R. § 1.98(a)(2)(ii).

The filing of this Information Disclosure Statement (IDS) shall not be construed as a representation that a search has been made (37 C.F.R. 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The Applicants believe that this IDS is being submitted after the submission of a Request for Continued Examination (RCE), before the issuance of a first Office Action on the merits and before the issuance of a Final Rejection or Notice of Allowance. Therefore, no official fees should be due; and this IDS should be considered on the merits. If this IDS is being submitted after the issuance of the first Office Action on the merits and before the issuance of a Final Rejection or Notice of Allowance, please contact the undersigned to authorize a payment of $180.00 (or any other required amount), which is the fee set forth in 37 C.F.R. § 1.97(c), if the Examiner believes that such a fee

is due in order for this IDS to be considered on the merits.

The filing of this Information Disclosure Statement shall not be construed as an admission against interest in any manner. (Notice of January 9, 1992, 1135 O.G. 13-25, at 25.)

The person making this statement is the practitioner who signs below on the basis of information supplied by an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c)) and on the basis of information in the practitioner's file.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first-class mail in an envelope addressed to the "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450", on May 16, 2006 by Guillermo Gonzalez.

Respectfully submitted,

Alessandro Steinfl
Attorney for Applicant
Reg. No. 56,448

LADAS & PARRY
5670 Wilshire Boulevard
Suite 2100
Los Angeles, CA 90036
(323) 934-2300

Enclosures: Form PTO-1449 (modified) (1 page)

Form PTO-1449 (Modified)	ATTY DOCKET NO. B-5746CONT 952776-6	U.S. SERIAL NO. 09/797,488
LIST OF PATENTS AND PUBLICATIONS STATEMENT	APPLICANTS Frankland, et al.	
	FILING DATE March 1, 2001	GROUP 3621

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	ISSUE DATE	NAME	CLASS	SUB-CLASS	FILING DATE or 102(e) DATE IF APPROPRIATE
	4,803,039 A	2/1989	Impink Jr., et al.	376	216	
	5,185,699 A	2/1993	Reiner, et al.	707	531	
	5,532,928 A	7/1996	Stanczyk, et al.	705	7	
	5,664,112 A	9/1997	Sturgeon, et al.	705	28	
	5,712,990 A	1/1998	Henderson	705	28	
	5,726,884 A	3/1998	Sturgeon, et al.	705	9	
	5,965,858 A	10/1999	Suzuki, et al.	235	375	
	6,067,549 A	5/2000	Smalley, et al.	707	104	
	6,097,995 A	8/2000	Tipton, et al.	700	266	
	6,122,622 A	9/2000	Wiitala, et al.	705	28	
	6,163,732 A	12/2000	Petke, et al.	700	106	
	6,341,287 B1	1/2002	Sziklai, et al.	707	102	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	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.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Richard Frankland et al.	Group Art No.: 3621
Application No: 09/797,488	Examiner: Cheung, Mary Da Zhi Wang
Filed: March 1, 2001	Re: **WRITTEN SUBMISSION**
For: "INTEGRATED CHANGE MANAGEMENT UNIT"	Our Ref: B-5746CONT 952776-6/AS
	Date: May 15, 2006

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

Dear Sir:

This paper is filed in response to the Final Action dated January 18, 2006, and concurrently with a Request for Continued Examination (RCE). Please enter the following amendments and remarks into the prosecution history of the subject application.

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

Remarks begin on page 13 of this paper.

* * *

AMENDMENTS TO THE CLAIMS

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

LISTING OF CLAIMS

1. (canceled)

2. (currently amended) A system for providing a dynamically generated application having one or more functions and one or more user interface elements; comprising:

a server computer;

one or more client computers connected to the server computer over a computer network;

a first layer associated with the server computer containing information about the unique aspects of a particular application ;

~~and~~ a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers;

a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application; and

a change management layer for automatically detecting changes that affect an application,

each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer.

3. (canceled)

4. (currently amended) The system of Claim 2 [[3]], wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

5. (previously presented) The system of Claim 2, wherein the second layer comprises a business content database having data about one or more different predetermined business applications.

6. (previously presented) The system of Claim 5, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

7. (previously presented) The system of Claim 5, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

8. (previously presented) The system of Claim 7, wherein the metadata database further comprises data about the user interface and functionality including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

9. (currently amended) The system of Claim 2 [[3]], wherein each client computer further comprises a JAVA enabled web browser to permit remote user access.

10. (canceled)

11. (currently amended) The system of Claim 2 [[10]], wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

12. (previously presented) The system of Claim 11, wherein the server further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

13. (previously presented) The system of Claim 2, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.

14. (previously presented) The system of Claim 13, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.

15. (previously presented) The system of Claim 13, wherein the builder module further comprises an event builder for generating triggering events for a form.

16. (previously presented) The system of Claim 13, wherein the builder module further comprises a report builder for building a report for a particular application.

17. (previously presented) The system of Claim 13, wherein the builder module further comprises a document builder for mapping a document onto the first layer.

18. (previously presented) The system of Claim 13, wherein the builder module further comprises a formula builder for generating formulas.

19. (previously presented) The system of Claim 16, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.

20. (previously presented) The system of Claim 13, wherein the builder module further comprises a worklist builder for generating a worklist.

21. (previously presented) The system of Claim 13, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.

22. (previously presented) The system of Claim 2, wherein the first and second layers are stored on the server computer.

23. (previously presented) The system of Claim 2, wherein the first and second layers are distributed across one or more server computers.

24. (currently amended) A method for dynamically generating an application using a server computer and one or more client computers connected to the server computer over a computer network, the method comprising:

providing a first layer containing information about the unique aspects of a particular application;

providing a second layer containing information about the user interface and

functions common to a variety of applications, wherein a particular application is generated based on the data in the first and second layers;

establishing a connection between a client computer and the server computer;

~~generating~~ providing a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface for a particular application for the client computer as the client computer connects to the server computer;

automatically detecting changes that affect a particular application; and

distributing the user interface and functionality of the particular application to the client computer wherein the particular application and its user interface are dynamically re-generated each time a client establishes a connection with the server computer.

25. (canceled)

26. (currently amended) The method of Claim 24 [[25]], wherein the third layer further comprises a JAVA data management layer that distributes one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

27. (previously presented) The method of Claim 24, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.

28. (previously presented) The method of Claim 27, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

29. (previously presented) The method of Claim 27, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

30. (previously presented) The method of Claim 29, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

31. (currently amended) The method of Claim 24 [[25]], wherein each client computer further comprises a JAVA enabled web browser to permit remote user access.

32. (canceled)

33. (currently amended) The method of Claim 24 [[32]], wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

34. (previously presented) The method of Claim 33, wherein automatically detecting changes further comprises automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

35. (previously presented) The method of Claim 24 further comprising permitting a user to build a user interface for a particular application using the second layer.

36. (previously presented) The method of Claim 35, wherein the building further comprises one or more of editing an existing form and generating a new form that contains the data for a particular application.

37. (previously presented) The method of Claim 35, wherein the building further comprises generating triggering events for a form.

38. (previously presented) The method of Claim 35, wherein the building further comprises building a report for a particular application.

39. (previously presented) The method of Claim 35, wherein the building further comprises mapping a document onto the first layer.

40. (previously presented) The method of Claim 35, wherein the building further comprises generating formulas associated with the application.

41. (previously presented) The method of Claim 38, wherein the building further comprises generating one or more views/queries used in the reports.

42. (previously presented) The method of Claim 35, wherein the building further comprises generating a worklist.

43. (previously presented) The method of Claim 35, wherein the building further comprises generating the intelligent agents that detect changes associated with the particular business application.

44. (previously presented) The method of Claim 24 further comprising distributing the

first and the second layers on the server computer.

45. (previously presented) The method of Claim 24 further comprising distributing the first and second layers across one or more server computers.

46. (currently amended) A server for dynamically generating an application for one or more client computers connected to the server computer by a computer network, comprising:

a first layer associated with the server containing information about the unique aspects of a particular application;

a second layer associated with the server containing information about the user interface and functions common to a variety of applications;

a third layer that retrieves the data in the first and second layers in order to generate functionality and user interface elements of the application;

a change management layer for automatically detecting changes that affect an application;

means for dynamically generating a particular application based on the first and second layers each time a client computer connects to the server computer; and

means for distributing the user interface and functionality of the particular application to a client computer.

47. (canceled)

48. (currently amended) The server of Claim 46 [[47]], wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second

layers.

49. (previously presented) The server of Claim 46, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.

50. (previously presented) The server of Claim 49, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

51. (previously presented) The server of Claim 49, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

52. (previously presented) The server of Claim 51, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

53. (canceled)

54. (currently amended) The server of Claim 46 [[53]], wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

55. (previously presented) The server of Claim 54, wherein the change management layer further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality

and user interface elements of the application based on the changes detected by the intelligent agents.

56. (previously presented) The server of Claim 46, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.

57. (previously presented) The server of Claim 56, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.

58. (previously presented) The server of Claim 56, wherein the builder module further comprises an event builder for generating triggering events for a form.

59. (previously presented) The server of Claim 56, wherein the builder module further comprises a report builder for building a report for a particular application.

60. (previously presented) The server of Claim 56, wherein the builder module further comprises a document builder for mapping a document onto the first layer.

61. (previously presented) The server of Claim 56, wherein the builder module further comprises a formula builder for generating formulas.

62. (previously presented) The server of Claim 59, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.

63. (previously presented) The server of Claim 56, wherein the builder module further comprises a worklist builder for generating a worklist.

64. (previously presented) The server of Claim 56, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.

65. (previously presented) The server of Claim 46, wherein the first and second layers are distributed on the server computer.

66. (previously presented) The server of Claim 46, wherein the first and second layers are distributed across one or more server computers.

67. – 155. (canceled)

* * * * *

REMARKS

1. This written submission is filed in conjunction with a Request for Continued Examination (RCE). A check in the amount of $ 120 for a one-month extension also accompanies the RCE.

2. Claims 2-66 are currently pending in the present application. With this amendment, claims 2, 4, 9, 11, 24, 26, 31, 33, 48, and 54 have been amended, and claims 3, 10, 25, 32, 47 and 52 have been canceled without prejudice. Claim 2 has been amended to incorporate the subject matter of claims 3 and 10. Claim 24 has been amended to incorporate the subject matter of claims 25 and 32. Claim 46 has been amended to incorporate the subject matter of claims 48 and 54.

3. Claim 2 as amended recites *"a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application; and a change management layer for automatically detecting changes that affect an application."* Such features have been taken from (now canceled) claims 3 and 10.

In the Final Action of January 18, 2006, the Examiner states that the *"third layer"* feature can be found between column 12, line 43 and column 13, line 10 and Figures 1 and 9 of Eager. The Examiner also states that the *"change management layer"* feature can be found at column 2, lines 21-29, between column 16, line 35 and column 17, line 60 and Figures 1 and 11 of Eager. The Applicants respectfully disagree.

Figure 1 of Eager shows a presentation layer 110, a business process layer 120, and a

functionality layer 130. The Examiner appears to state, in the Final Action, that Eager's layers 110 and 120 correspond to Applicants' first and second layers, respectively. Therefore, Applicants presume that the Examiner is of the opinion that Eager's functionality layer 130 corresponds to Applicants' third layer. This is also apparently confirmed by the fact that the Examiner makes reference to Figure 9 (which shows, on its bottom, the functionality layer 130) and to a passage of the specification referring to Figure 9. Should the understanding of the Applicant be wrong, the Examiner is respectfully urged to provide additional clarification.

As to the *"change management layer for automatically detecting changes that affect an application,"* the Examiner is of the opinion, in the Final Action (see page 3 of the Final Action, second paragraph), that such *"chan ge management layer"* is the functionality layer as disclosed, according to the Examiner, at column 14, lines 12-58 and between column 16, line 20 and column 17, line 60. However, the Examiner already took the position (see above) that Eager's functionality layer 130 is Applicants' third layer. How can Eager's functionality layer 130 be <u>both</u> *"a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application"* <u>and</u> *"a change management layer for automatically detecting changes that affect an application"*? At most, it can be one of those layers, not both of them together. Moreover, Applicants take issue with the Examiner's use of the passage at column 14, lines 12-58 of Eager. That passage deals with Eager's user interface engine 117 and state router 122. However, the interface engine 117 is part of the presentation layer 110 (see, e.g. Figs. 4 and 9), while the state router 122 is part of the business process layer 120 (see, e.g., Figs. 8 and 9). Therefore, use of the passage at column 14, lines 12-58 makes the Examiner's arguments and comments even more unclear to Applicants. In summary, the Examiner is incorrectly stating i) that Eager's functionality layer 130 is both Applicants' *" third layer"* and

Applicants' *"change management layer"*, which is an obviously unclear statement and ii) that Applicants' *" change management layer"* is sometimes the functionality layer 130 and sometimes either the presentation layer 110 or the business process layer 120!

In view of the above, it appears to Applicants that the Examiner is simply using the claims of Applicants as a roadmap instead of trying to understand and show where, in Eager, the features of the Applicants' claims are taught. The Examiner is respectfully reminded that parrotting the language used by Applicants is not enough to establish a valid rejection. Column 14, line 44 of Eager, for instance, shows the term "changed" but this does not mean that *"a change management layer for automatically detecting changes that affect an application"* is disclosed!

The Examiner is also respectfully reminded of the requirements posited by 37 C.F.R. §1.104(c)(2):

> "In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes invention other than that claimed by Applicant, the particular part relied on must be designated as nearly as practicable. The pertinence, if not apparent, must be clearly explained and each rejected claim specified" (emphasis added).

In particular, the Applicants are puzzled as to why the Examiner is making reference to long paragraphs of Eager instead of explicitly stating a one-to-one correspondence between Applicants' claimed layers and Eager layers. Those layers are clearly defined and numbered by Eager, so that compliance with Rule 104(c)(2) should not be too burdensome for the Examiner.

Therefore, Applicants submit that claim 2 is patentable over Eager, together with claims 4-9 and 11-23, at least by virtue of their dependency on claim 2. Incidentally, claims 11 and 12 expand on the "*change management layer*" feature, reciting "*one or more intelligent agents*" (claim 11) and that means are provided "*for automatically modifying the first and second layers in response to the intelligent agents.*" No recitation of those features is present in Eager.

4. Similar considerations apply to claims 24 and 46, which have been modified by Applicants analogously to what done with claim 2. Also those claims are submitted to be patentable over Eager, together with their dependent claims.

* * *

The Applicants submit that all claims of the application as amended herein are in condition for allowance. Prompt issuance of a Notice of Allowance is earnestly solicited.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE - Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 on

May 15, 2006
(Date of Deposit)

Susan Papp
(Name of Person Depositing)

Susan Papp
Signature

05/15/06
Date

Respectfully submitted,

A. Steinfl

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Enclosures:
- Request for Continuing Examination (RCE)
- Check # 21523 for $ 790
- Check for # 21524 for $ 120
- Postcard

RCE JFW

PTO/SB/30 (04-05)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Request for Continued Examination (RCE) Transmittal

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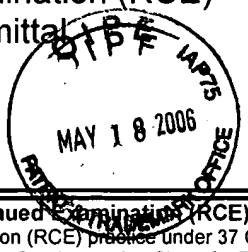

Application Number	09/797,488
Filing Date	March 1, 2001
First Named Inventor	Richard Frankland, et al.
Art Unit	3621
Examiner Name	Cheung, Mary Da Zhi
Attorney Docket Number	952776-6/AS B-5746CONT

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☑ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 12-0415. I have enclosed a duplicate copy of this sheet.

      i. ☑ RCE fee required under 37 CFR 1.17(e)

      ii. ☑ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☐ Other _____

   05/19/2006 CNGUYEN2 00000053 09797488
   01 FC:1801 790.00 OP

   b. ☑ Check in the amount of $ 790 and 120 enclosed

   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	AC Steinfl	Date	05/15/06
Name (Print/Type)	Alessandro Steinfl	Registration No.	US 56,448

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature	Susan Papp		
Name (Print/Type)	Susan Papp	Date	05/15/06

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Richard Frank et al., | Art Unit: 3621

Serial No.: 09/797,488 | Examiner: Cheung, Mary Da Zhi

Filed: March 1, 1001 | Our Ref.: 952776-6/AS B-5746CONT

For: "Integrated Change Management Unit" | Date of this paper: May 15, 2006

OIPE IAP75 MAY 18 2006 PATENT & TRADEMARK OFFICE

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

Sir:

PETITION AND FEE FOR EXTENSION OF TIME (37 CFR 1.136(a))

1. This is a petition for an extension of time for a period of one month.

2. Applicant is

__ a small entity __ verified statement attached
_x_ other than small entity __ verified statement filed

3.

Extension (months)	Fee for other than small entity	Fee for small entity
_x_ one month	$ 120.00	$ 60.00
__ two months	$ 450.00	$ 225.00
__ three months	$1,020.00	$ 510.00
__ four months	$1,590.00	$ 795.00
__ five months	$2,160.00	$ 1,080.00

Fee **$ 120.00**

4. Fee payment:

_X_ Attached is a check in the sum of $120.00

__ Charge to Deposit Account No. 12-0415 the above extension fee

_X_ Charge to Deposit Account No. 12-0415 any additional extension fee required or credit for any excess fee paid.

c/o LADAS & PARRY
5670 Wilshire Boulevard, # 2100
Los Angeles, CA 90036
(323) 934-2300

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed tC: Mail Stop RCE, commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

May 15, 2006
(Date of Deposit)

Susan Papp
Name of person transmitting

Susan Papp
(Signature)

05/15/06
(Date)

Respectfully submitted,

A. Steinfl

Alessandro Steinfl
Reg. No. 56,448
LADAS & PARRY
5670 Wilshire Boulevard
Suite 2100
Los Angeles, California 90036
(323) 934-2300

05/19/2006 CNGUYEN2 00000053 09797488

02 FC:1251 120.00 OP

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.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

36716 7590 01/18/2006

LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	**PAPER NUMBER**
3621	

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3621	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

1)☒ Responsive to communication(s) filed on *14 November 2005*.

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

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

Disposition of Claims

4)☒ Claim(s) *2-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-66* is/are rejected.

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

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

Application Papers

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

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

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

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

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. This action is in response to the amendment filed on November 14, 2005. Claims 2-66 are pending.

Response to Arguments

2. Applicant's arguments filed November 14, 2005 have been fully considered but they are not persuasive.

The applicant argues that Eager (U. S. Patent 5,960,200) fails to teach the limitations in claim 1. Examiner would like to point out the claim 1 was canceled and it is believed that the applicant is meant "claim 2" instead of "claim 1".

In response to the applicant arguments that Eager fails to teach "a first layer...containing information about the unique aspects of a particular application and a second layer...containing information about the user interface and functions common to a variety of applications", examiner respectfully disagrees. First, "information about the unique aspects of a particular application" corresponds to Eager's teaching of receiving a client identification number or request identifier at the presentation layer, and the request will be processed base on the identifier (column 10 lines 33-47 and column 12 lines 22-28). Second, "functions commons to a variety of applications" corresponds to Eager's teaching of transaction codes and input/output buffers (column 12 lines 22-42). The transaction codes and input/output buffer are common to a variety of applications, and the system will process the request based on the common transaction codes and input/output buffers and the unique request identifier.

In response to the applicant's arguments that Eager fails to teach the browser application and distribution and dynamical generation of user interface and functionality for particular application, this matter is taught by Eager as the information is generated based on the user request and is displayed at end user station (column 9 lines57-65 and column 10 lines 33-47 and column 12 lines 21-42).

The applicant further argues that Eager fails to teach "a change manager layer for automatically detecting changes that affect an application" as claimed in claim 10. Examiner respectfully disagrees because Eager teaches functionality layers manages changing state of the application (column 16 line 20 – column 17 line 60); in particular, Eager gives example detecting and changing application (column 14 lines 12-58).

Claim Rejections - 35 USC § 102

3. 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.

4. Claims 2-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Eager et al., U. S. Patent 5,960,200.

As to claims 2 and 22-23, Eager teaches a system for providing a dynamic generated application having one or more functions and one or more user interface elements, comprising (abstract and Figs. 4, 7):

a) A server computer (Fig. 7);

b) One or more client computers connected to the server computer over a computer network (Fig. 7);

c) A first layer associated with the server computer containing information about the unique aspects of a particular application and a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers (column 10 line 33 – column 11 line 3 and column 12 lines 12-42 and Figs. 1, 4, 8);

d) Each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer (column 10 line 33 – column 11 line 57 and column 12 lines 12-42 and Figs. 1, 4, 8).

As to claim 3, Eager teaches a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application (column 12 line 43 – column 13 line 10 and Figs. 1, 9).

As to claim 4, Eager teaches the third layer further comprises a Java data management layer having means for distributing one or more Java applets to the client computer wherein the Java applets dynamically generate and present the user interface

and functionality to the user based on the first and the second layers (column 8 lines 3-22 and column 10 lines 7-26 and Fig. 1).

As to claims 5-8, Eager teaches the second layer comprises a business content database having data about one or more different predetermined business applications (Figs. 1-2, 8, 11, 30).

As to claim 9, Eager teaches each client computer further comprises a Java enabled web browser to permit remote user access (column 8 lines 3-22 and column 10 lines 7-26 and Figs. 1, 7).

As to claims 10-12, Eager teaches the server computer further comprises a change management layer for automatically detecting changes that affect an application (column 2 lines 21-29 and column 16 line 35 – column 17 line 60 and Figs. 1, 11).

As to claims 13-21, Eager teaches a builder module for permitting a user to build a user interface for a particular application using the second layer (see facilitation tools 360 in Figs. 1 and 33).

As to claims 24-66, the limitations are parallel with claims 1-23; thus, claims 24-66 are rejected on same basis as claims 1-23.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (571)-272-6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final Communications labeled "BOX AF")

(571) 273-6705 (Draft Communications)

Mary Cheung
Primary Examiner
Art Unit 3621
January 13, 2006

MARY D. CHEUNG
PRIMARY EXAMINER

Index of Claims

Application No.	Applicant(s)	
09/797,488	FRANKLAND ET AL.	
Examiner	**Art Unit**	
Mary Cheung	3621	

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date									
Final	Original	3/29/05	8/24/05	1/13/06							
	1	-									
	2	√	√	√							
	3	√	√	√							
	4	√	√	√							
	5	√	√	√							
	6	√	√	√							
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Claim		Date									
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09/257488

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2000

Application or Docket Number: ~~184632-99H00~~ 09/257,488

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	154	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	154 minus 20=	* 134
INDEPENDENT CLAIMS	9 minus 3 =	* 6
MULTIPLE DEPENDENT CLAIM PRESENT	☐	

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

SMALL ENTITY TYPE ☐ OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	355.00	OR	BASIC FEE	710.00
X$ 9=	1206.00	OR	X$18=	
X40=	240.00	OR	X80=	
+135=		OR	+270=	
TOTAL	1801.00	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 154	Minus	** 154	= —
Independent	* 9	Minus	*** 9	= —
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	☐			

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=	—	OR	X$18=	—
X40=	—	OR	X80=	—
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	—

6-15-05

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 65	Minus	** 154	=
Independent	* 8	Minus	*** 9	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	☐			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

11-14-05.

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 65	Minus	** 154	=
Independent	* 8	Minus	*** 9	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	☐			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

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

CENTRAL FAX CENTER

NOV 14 2005

LADAS & PARRY

FACSIMILE TRANSMITTAL

5670 Wilshire Boulevard, Suite 2100
Los Angeles, California 90036-5679
Telephone: (323) 934-2300
Facsimile: (323) 934-0202

DELIVER TO:	Examiner Mary Da Zhi Cheung Art Unit 3621
COMPANY:	United States Patent and Trademark Office
FAX NUMBER:	(571) 273-8300
FROM:	Alessandro Steinfl
DATE:	November 14, 2005
TOTAL NO. OF PAGES (INCLUDING THIS PAGE):	8
SUBJECT :	**Response** U.S. Patent Application No. 09/797,488 Applicant: Richard Frankland, et al. "Integrated Change Management Unit" Our Ref: B-5746CONT 952776-6/AS

REMARKS:

Dear Examiner Cheung:

Enclosed is a response to the Office Action mailed on August 31, 2005 consisting of:

Response – 7 pages

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Richard Frankland et al.	Group Art No.: 3621
Application No: 09/797,488	Examiner: Cheung, Mary Da Zhi Wang
Filed: March 1, 2001	Re: **RESPONSE**
For: "INTEGRATED CHANGE MANAGEMENT UNIT"	Our Ref: B-5746CONT 952776-6/AS
	Date: November 14, 2005

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

Dear Sir:

This paper is filed in response to the Official Action dated August 31, 2005, a reply to which is initially due by November 30, 2005. Please consider the following remarks with respect to the subject application. All remarks herein are made without prejudice.

Remarks begin on page 2 of this paper.

* * *

REMARKS

1. Claims 2-66 are pending in the present application.

2. In the Action dated August 31, 2005, the Examiner rejects claims 2-66 under 35 USC 102(e) as being anticipated by U.S. Pat. No. 5,960,200 to Eager. The Applicants respectfully disagree.

2A. Claim 1 recites *"a first layer . . . containing information about the unique aspects of a particular application and a second layer . . . containing information about [a] user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers."*

According to the Examiner, such feature can be found in Eager, column 10 line 33 through column 11 line 3, column 12 lines 12-42, and Figures 1, 4 and 8. The Applicants respectfully disagree.

The Applicants note that the passage between column 10 line 33 and column 11 line 3 describes in detail the user interface engine 117 and Figure 6 of Eager. Such user interface engine 117 is part of a presentation layer 110, as shown in Figure 4 of Eager and discussed, for example, at column 8, line 66 through column 9 line 8 of Eager. Incidentally, Eager's presentation layer 110 also contains a graphic user interface (GUI) 115 (column 9, lines 2-5). Therefore, it appears that the Examiner is of the opinion that Eager's presentation layer 110 is the *"second layer"* of claim 1.

The Applicants also note that the passage at column 12 lines 12-42 describes in detail a business process layer 120, as also shown in Figure 8. Therefore, it appears that the Examiner is of the opinion that Eager's business process layer 120 is the *"first layer"* of claim 1. In this respect, the Applicants note that Figure 1 of Eager shows both presentation layer 110 and business process layer 120, Figure 4 of Eager shows a detail of presentation layer 110, and Figure 8 of Eager shows a detail of business process layer 120.

However, claim 1 recites that the first layer contains *"information about the unique aspects of a particular application."* Where is this feature taught in the passage at column 12 lines 12-42 cited by the Examiner? The Applicants have read that passage and have not been able to find any hint that information about *"unique aspects"* of a particular application is contained in Eager's business process layer 120.

Further, claim 1 recites that the second layer contains *"functions common to a variety of applications."* Where is this feature taught in the passage at column 10 line 33 through column 11 line 3 cited by the Examiner? The Applicants have read that passage and have noted that, although user interface representation structures 116 created by user interface engine 117 are described and shown (see, e.g., Figure 4 of Eager), there is no mention about *"functions common to a variety of applications."*

Applicants respectfully note that 37 C.F.R. §1.104(c)(2) states:

> "In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes invention other than that claimed by Applicant, **the particular part relied on must be designated as nearly as practicable**. The pertinence, if not apparent, must be clearly explained and each rejected claim specified"

Applicants submit that the Examiner has failed to "designate as nearly as practicable" the particular part of Eager relied upon in making the assertion that Eager discloses *"a first layer containing information about the unique aspects of a particular application"* and *"a second layer containing functions common to a variety of applications."* Applicants request that the Examiner comply with 37 C.F.R. §1.104(c)(2) and "designate as nearly as practicable" the particular part of Eager that allegedly teaches the above features. Otherwise, Applicants respectfully request that the assertion be withdrawn and Claim 1 be allowed.

2B. Claim 1 also recites *"each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer."*

According to the Examiner, such feature can be found in Eager, column 10 line 33 through column 11 line 57, column 12 lines 12-42, and Figures 1, 4 and 8. The Applicants respectfully disagree.

The passage at column 10 line 33 through column 11 line 57 discusses components of a presentation layer 110 in Eager, as also shown in Figures 1 and 4 of Eager. The passage at column 12 lines 12-42 discusses components of a business process layer 120 in Eager, as also shown in Figures 1 and 8 of Eager.

Where are client computers discussed in those passages? Where is execution of a browser application discussed in those passages? Where is distribution and dynamical

generation of user interface and functionality for a particular application discussed in those passages?

As already pointed out above, Applicants request that the Examiner comply with 37 C.F.R. §1.104(c)(2) and "designate as nearly as practicable" the particular part of Eager that allegedly teaches the above features. Otherwise, Applicants respectfully request that the assertion be withdrawn and Claim 1 be allowed.

2C. Claims 2-23 all depend, directly or indirectly, on claim 1. Therefore, those claims are deemed to be allowable at least by virtue of their dependency on claim 1. Incidentally, with reference to claim 10 ("*the server further comprises a change management layer for automatically detecting changes that affect an application*") the Applicants note that the Examiner is of the opinion that such feature is disclosed at column 2 lines 21-29, column 16 line 35 through column 17 line 60, and Figures 1, 11. The Applicants respectfully disagree.

Column 2 lines 21-29 talks about a functionality layer including modules. Column 16 line 35 through column 17 line 60 discloses in detail the functionality layer 130, also with reference to Figure 11. The Applicant have read in detail the passage cited by the Examiner and have not been able to find where, in that passage, "*change management . . . for automatically detecting changes*" is described. The functionality layer 130 of Eager manages business objects (column 16 lines 36-37), handles IMS/VS COBOL functionality code (column 16 lines 60-61), performs functions such as file processing, server initialization, transaction call resolution, transaction entry point processing, and server wrap-up (column 16 line 66 through column 17 line 1). In none of those functions, "*change management . . . for automatically detecting changes*" is described.

2D. Independent method claim 24 recites the same distinguishing features of claim 1. Therefore, the Applicants submit that claim 24 and claims 25-45 depending thereon are patentable for substantially the same reasons expressed with reference to claim 1 above.

2E. Independent server claim 46 recites the same distinguishing features of claim 1. Therefore, the Applicants submit that claim 46 and claims 47-66 depending thereon are patentable for substantially the same reasons expressed with reference to claim 1 above.

* * *

The Applicants submit that all claims of the application as amended herein are in condition for allowance. Prompt issuance of a Notice of Allowance is earnestly solicited.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being facsimile transmitted to tel. no. (571)273-8300 on

November 14, 2005
(Date of Deposit)

Susan Papp
(Name of Person Depositing)

Susan Papp
Signature

11/14/05
Date

Respectfully submitted,

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
09/797,488		3621	36M1

Correspondence Address / Fee Address Change

The following fields have been set to Customer Number 36716 on 09/14/2005

- Correspondence Address

The address of record for Customer Number 36716 is:
LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES,CA 90036-5679

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
09/797,488		3621	36M1

Correspondence Address / Fee Address Change

The following fields have been set to Customer Number 36716 on 08/31/2005

- Correspondence Address

The address of record for Customer Number 36716 is:
LADAS & PARRY
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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

36716 7590 08/31/2005

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EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	**PAPER NUMBER**
3621	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3621	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2005*.

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

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

Disposition of Claims

4)☒ Claim(s) *2-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-66* is/are rejected.

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

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

Application Papers

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

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

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

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

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. This action is in response to the amendment filed on June 15, 2005. Claims 2-66 are pending. Claims 1 and 67-155 are canceled.

Claim Rejections - 35 USC § 102

2. 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.

3. Claims 2-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Eager et al., U. S. Patent 5,960,200.

As to claims 2 and 22-23, Eager teaches a system for providing a dynamic generated application having one or more functions and one or more user interface elements, comprising (abstract and Figs. 4, 7):

a) A server computer (Fig. 7);

b) One or more client computers connected to the server computer over a computer network (Fig. 7);

c) A first layer associated with the server computer containing information about the unique aspects of a particular application and a second layer associated with the server computer containing information about the user interface and functions

common to a variety of applications, a particular application being generated based on the data in both the first and second layers (column 10 line 33 – column 11 line 3 and column 12 lines 12-42 and Figs. 1, 4, 8);

d) Each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer (column 10 line 33 – column 11 line 57 and column 12 lines 12-42 and Figs. 1, 4, 8).

As to claim 3, Eager teaches a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application (column 12 line 43 – column 13 line 10 and Figs. 1, 9).

As to claim 4, Eager teaches the third layer further comprises a Java data management layer having means for distributing one or more Java applets to the client computer wherein the Java applets dynamically generate and present the user interface and functionality to the user based on the first and the second layers (column 8 lines 3-22 and column 10 lines 7-26 and Fig. 1).

As to claims 5-8, Eager teaches the second layer comprises a business content database having data about one or more different predetermined business applications (Figs. 1-2, 8, 11, 30).

As to claim 9, Eager teaches each client computer further comprises a Java enabled web browser to permit remote user access (column 8 lines 3-22 and column 10 lines 7-26 and Figs. 1, 7).

As to claims 10-12, Eager teaches the server computer further comprises a change management layer for automatically detecting changes that affect an application (column 2 lines 21-29 and column 16 line 35 – column 17 line 60 and Figs. 1, 11).

As to claims 13-21, Eager teaches a builder module for permitting a user to build a user interface for a particular application using the second layer (see facilitation tools 360 in Figs. 1 and 33).

As to claims 24-66, the limitations are parallel with claims 1-23; thus, claims 24-66 are rejected on same basis as claims 1-23.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Durflinger et al. (U. S. Patent 5,611,076) discloses multi-model database management system engine for database having complex data models.

Lavey, Jr. et al. (U. S. Patent 6,023,698) discloses transparently registering and updating information over the Internet.

Brandt et al. (U. S. Patent 6,377,993) discloses integrated proxy interface for web based data management reports.

Levine et al. (EP 0 874 306 A2) discloses network printing system.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (571)-272-6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final Communications labeled "BOX AF")

(571) 273-6705 (Draft Communications)

MARY D. CHEUNG
PRIMARY EXAMINER

Mary Cheung
Primary Examiner
Art Unit 3621
August 24, 2005

Notice of References Cited	Application/Control No. 09/797,488	Applicant(s)/Patent Under Reexamination FRANKLAND ET AL.	
	Examiner Mary Cheung	Art Unit 3621	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,611,076	03-1997	Durflinger et al.	707/102
	B	US-5,960,200	09-1999	Eager et al.	717/147
	C	US-6,023,698	02-2000	Lavey et al.	707/10
	D	US-6,377,993	04-2002	Brandt et al.	709/227
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	EP 874306 A2	10-1998	European Patent	LEVINE et al.	G06F 03/12
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

(19) Europäisches Patentamt
European Patent Office
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(11) EP 0 874 306 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
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(54) Network printing system

(57) A printing system in which one or more clients communicate with a plurality of printers by way of a print server, whose architecture is characterized by a plurality of layers, is provided. In practice, one of the plurality of layers receives a request from one of the one or more clients and the request designates an operation to be performed with respect to one of the plurality of printers. The printing system includes an application layer, communicating with the one of the plurality of layers, for developing a command expression based on the request received by the one or the plurality of layers, and a communications interface including a first connectivity module and a second connectivity module, with the first connectivity module communicating with a first one of the plurality of printers and the second connectivity module communicating with a second one of the plurality of printers. The printing system further includes a routing interface, communicating with both the application layer and the communications interface, for directing the command expression to a selected one of the first connectivity module and the second connectivity module. Accordingly, the selected one of the first and second connectivity modules uses the command expression to perform at least a part of the designated operation with respect to the one or the plurality of printers.

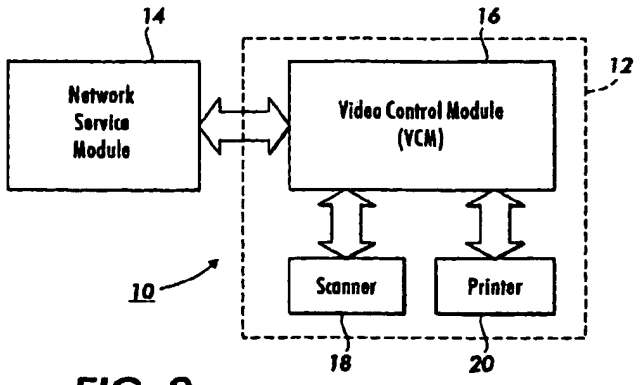


FIG. 2

EP 0 874 306 A2

Description

This invention relates generally to a printer interface for use in a network printing context and, more particularly, to an HTTP based print server adapted particularly for use with a network printing system, the HTTP based print server permitting a plurality of Internet clients to achieve Internet communication with one or more document processing devices. The architecture of the print server is such that the Internet communication can be achieved whether the one or more document processing devices has an embedded HTTP server or not.

US-A-5,220,674 discloses a local area print server which functions in cooperation with a plurality of clients and a plurality of printers to facilitate communication between the clients and the printers. The server includes various subsystems, such as a status collection subsystem that maintains a wide range of state information regarding virtually every subsystem with which the server communicates. The status collection subsystem includes a notification facility which sends reports of printing system status changes or events to appropriate network components internal and external to the local area print server that would have an interest in knowing them.

On the increasingly popular world-wide-web (www), hypertext markup language (html) specifies the display of information on a "client" computer, and hypertext transfer protocol (http) provides a neutral mechanism for the transfer of information from a "served" computer to a "client" computer over the TCP/IP network protocol. Of particular interest is the neutral aspect, in which the transfer and display of information does not depend on the client computers operating system or processor configuration, but only on the capabilities of a protocol-compliant "browser". Such software is widely available for most computers at this time. Information transferred and displayed to the client includes both static information defined in advance and dynamic information computed time. Information transferred and displayed to the client includes both static information defined in advance and dynamic information computed at the time that a client makes a request to the server. Publicly available server software often includes the common gateway interface (CGI) which allows the server to invoke a software program which may be passed user specified parameters, and whose output will be transferred to, and displayed on the client computer.

Print and document processing machines can use html and http as interfaces for control and status. These machines benefit greatly from such use for several reasons: First, development costs are lower and deployment schedules shorter since the mechanism can be used by many clients without the necessity of writing the client display software (often referred to as "user interface" or UI) for each operating system and processor that clients use. Second, it is straightforward to define multi-lingual interfaces by storing the information in multiple languages on the server, permitting the server to be accessed in multiple languages by different clients concurrently. Third, upgrades or changes can be made to the print or document processing machine's capabilities without the inconvenience of the vendor developing new client display software and of the client having to install new software on every client computer for each such upgrade.

In a network printing system, such as that disclosed by U.S. Patent No. 5,220,674, a significant number of operation requests (e.g. queries) are passed between a given client and one or more printing subsystems to determine selected information regarding a given printing subsystem, such as machine settings for or status of the given printing subsystem. These queries are best handled in an HTTP context since such context tends to be neutral across document processing platforms of varying specifications. It is believed, however, that this advantage of neutrality has not been fully exploited in the art. For instance, Hewlett-Packard ("HP") is believed to provide an arrangement in which a plurality of clients communicates with a plurality of document processing devices by way of a server. In order to use the server with the devices, however, it is necessary that the devices include a special card which is proprietary to HP. It would be desirable to provide a proxy server which is capable of performing a host of Internet operations among document processing devices some of which include embedded HTTP servers and others of which do not include embedded HTTP servers.

Additionally, in a typical proxy server an application layer communicates with a connectivity layer which permits the operation requests to be transferred between the clients and the document processing devices. Some client/server based software accommodates for the connectivity layer through an interface referred to as Middleware. In operation, Middleware includes a plurality of modules, each of which modules facilitates the transfer of operation requests between the clients and one or more target devices. For example, one module may facilitate the transfer of a query between a Microsoft based client and a Document Centre based printer ("Document Centre" is a trademark of Xerox Corp.). In one prior art scheme, a request for an operation is received from the client, via the application layer, and a set of parameters corresponding with the request is created by the application layer. In one instance, the request may seek to ascertain the values associated with selected machine settings of the target document processing device. Accordingly, the requested settings are communicated to the connectivity layer and it, in turn, obtains the values designated by the application layer.

This approach of using the application layer to set the parameter creates difficulties for the drafter of application code in that s/he may not be the one most familiar with the current parameters with which the corresponding target is associated. On the other hand, typically, those writing code for the connectivity layer are quite familiar with the current parameters with which target document processing devices are associated. Thus, it would be desirable to provide a

system in which the responsibility of obtaining values associated with a given document processing device is shifted from the application layer to the connectivity or Middleware layer.

In accordance with the disclosed invention, there is provided a printing system in which one or more clients communicate with a plurality of printers by way of a print server whose architecture is characterized by a plurality of layers. In practice, one of the plurality of layers receives a request from one of the one or more clients and the request designates an operation to be performed with respect to one of the plurality of printers. The printing system includes an application layer, communicating with the one of the plurality of layers, for developing a command expression based on the request received by the one or the plurality of layers; a communications interface including a first connectivity module and a second connectivity module, the first connectivity module communicating with a first one of the plurality of printers and the second connectivity module communicating with a second one of the plurality of printers; and a routing interface, communicating with both said application layer and said communications interface, for directing the command expression to a selected one of the first connectivity module and the second connectivity module, wherein the selected one of the first and second connectivity modules uses the command expression to perform at least a part of the designated operation with respect to the one or the plurality of printers.

Figure 1 is a perspective view of a networked digital copier suitable for responding to information requests;
Figure 2 is a block diagram depicting a multifunctional, network adaptive printing machine;
Figure 3 is a block diagram of a network controller for the printing machine of Figure 2;
Figure 4 is a block diagram showing the network controller of Figure 3 in greater detail;
Figure 5 is a block diagram in which a plurality of clients are communicatively coupled with a plurality of document processing devices (e.g. printers) by way of an HTTP proxy server;
Figure 6A is a block diagram showing a nonpreferred relationship between the routing and communications interfaces of Figure 5;
Figure 6B is a block diagram showing a preferred relationship between the routing and communications interfaces of Figure 5; and
Figure 7 is a flow diagram showing how various function calls are employed to perform operations relative to one or more document processing devices.

Referring to Figure 1 of the drawings, a digital copier system of the type suitable for use with the preferred embodiment is shown. As shown, the system includes a document feeder 1 and an operation (and display) panel 2. After desired conditions have been entered on the operation panel 2, the document feeder 1 conveys a document to a predetermined reading position on an image reading device 3 and, after the document has been read, drives it away from the reading position. The image reading device 3 illuminates the document brought to the reading position thereof. The resulting reflection from the document is transformed to a corresponding electric signal, or image signal, by a solid state imaging device, e.g., a CCD (Charge Coupled Device) image sensor. An image forming device 4 forms an image represented by the image signal on a plain paper or a thermosensitive paper by an electrophotographic, thermosensitive, heat transfer, ink jet or similar conventional system.

As a paper is fed from any one of paper cassettes 7 to the image on forming device 4, the device 4 forms an image on one side of the paper. A duplex copy unit 5 is constructed to turn over the paper carrying the image on one side thereof and again feed it to the image forming device 4. As a result, an image is formed on the other side of the paper to complete a duplex copy. The duplex copy unit 5 has customarily been designed to refeed the paper immediately or to sequentially refeed a plurality of papers stacked one upon the other, from the bottom paper to the top paper. The papers, or duplex copies, driven out of the image forming device 4 are sequentially sorted by a output device 6 in order of page or page by page.

Applications, generally 8, share the document feeder 1, operation panel 2, image reading device 3, image forming device 4, duplex unit 5, output device 6, and paper cassettes 7 which are the resources built in the copier system. As will appear, the applications include a copier application, a printer (IOT) application, a facsimile (Fax) application and other applications. Additionally, the digital copier system is coupled with a network by way of a conventional network connection 9.

Referring to Figure 2, a multifunctional, network adaptive printing system is designated by the numeral 10. The printing system 10 includes a printing machine 12 operatively coupled with a network service module 14. The printing machine 12 includes an electronic subsystem 16, referred to as a video control module (VCM), communicating with a scanner 18 and a printer 20. In one example, the VCM 16, which is described in detail in U.S. Patent No. 5,579,447 to Salgado, the disclosure of which is incorporated herein by reference, coordinates the operation of the scanner and printer in a digital copying arrangement. In a digital copying arrangement, the scanner 18 (also referred to as image input terminal (IIT)) reads an image on an original document by using a CCD full width array and converts analog video signals, as gathered, into digital signals. In turn, an image processing system (not shown), associated with the scanner 18, executes signal correction and the like, converts the corrected signals into multi-level signals (e.g. binary signals),

compresses the multi-level signals and preferably stores the same in electronic precollation (not shown).

Referring to Figure 2, the printer 20 (also referred to as image output terminal (IOT)) preferably includes a xerographic print engine. In one example, the print engine has a multi-pitch belt (not shown) which is written on with an imaging source, such as a synchronous source (e.g. laser raster output scanning device) or an asynchronous source (e.g. LED print bar). In a printing context, the multi-level image data is read out of the EPC memory, while the imaging source is turned on and off, in accordance with the image data, forming a latent image on the photoreceptor. In turn, the latent image is developed with, for example, a hybrid jumping development technique and transferred to a print media sheet. Upon fusing the resulting print, it may be inverted for duplexing or simply outputted. It will be appreciated by those skilled in the art that the printer can assume other forms besides a xerographic print engine without altering the concept upon which the disclosed embodiment is based. For example, the printing system 10 could be implemented with a thermal ink jet or ionographic printer.

Referring to Figure 3, the network service module 14 is discussed in further detail. As will be recognized by those skilled in the art, the architecture of the network service module is similar to that of a known "PC clone". More particularly, in one example, a controller 44 assumes the form of a SPARC processor, manufactured by Sun Microsystems, Inc., is coupled with a standard SBus 72. In the illustrated embodiment of Figure 3, a host memory 74, which preferably assumes the form of DRAM, and a SCSI disk drive device 76 are coupled operatively to the SBus 72. While not shown in Figure 3, a storage or I/O device could be coupled with the SBus with a suitable interface chip. As further shown in Figure 3, the SBus is coupled with a network 78 by way of an appropriate network interface 80. In one example, the network interface includes all of the hardware and software necessary to relate the hardware/software components of the controller 44 with the hardware/software components of the network 78. For instance, to interface various protocols between the network service module 14 and the network 78, the network interface could be provided with, among other software, Netware® from Novell Corp.

In one example, the network 78 includes a client, such as a workstation 82 with an emitter or driver 84. In operation, a user may generate a job including a plurality of electronic pages and a set of processing instructions. In turn, the job is converted, with the emitter, into a representation written in a page description language, such as PostScript. The job is then transmitted to the controller 44 where it is interpreted with a decomposer, such as one provided by Adobe Corporation.

Referring to Figure 4, a block diagram which further elaborates on the network controller schematic of Figure 3 is shown. In the illustrated embodiment of Figure 4, the clients 100 (each client, in Figure 3, being shown with a workstation 82 and an emitter 84) are configured with a variety of protocols, such as LPD (a protocol for UNIX), Novel network protocol, AppleTalk and DCS (a protocol for Xerox digital copiers known as the "Document Centre Systems"). Additionally, each of the clients is preferably provided with "browsing" capability which allows for communication with, for example an HTTP server for access to, among other locations, the World Wide Web. In one example, a given client employs a browser from either Netscape (2.01 or higher) or Microsoft (e.g. "nashville" (a trademark of Microsoft)). The clients communicate with the network server or electronic subsystem ("ESS") 14 by way of Connectivity Services (CS) 102. As shown in Figure 4, the ESS comprises two parts, namely a Microkernal 104 (more particularly, a partial abstract model of a Microkernal mapped into a model based on DPA ISO 10175/POSIX IEEE 1003.7) and an application specific subsystem 106.

In general, a network or point-to-point print submission originates at the Protocol Service level of the (CS) subsystem. Each Protocol Service listens on a well-known socket for a connection indication. When a Protocol Service receives the connection indication it submits a job request to the Connectivity Core. The Connectivity Core will translate this request into a DPA-compatible format and forward it to a DM subsystem 108. When the job submission is granted, the Protocol Service can submit one or more documents. Document submission is achieved by sending a document request and an I/O descriptor to the Connectivity Core. This will also be translated and forwarded to the DM subsystem.

After the document has been accepted, the Protocol Service starts to receive data from the underlying protocol stack and writes it into the I/O descriptor. This data will read on the other side of the I/O descriptor by a consumer or will be spooled somewhere in the system. When the remote client indicates that there is no more data, the I/O descriptor is closed signaling the end of this specific document. After all documents have been received, a job termination request is sent from the Protocol Service to the Connectivity Core, which then forwards it to the DM. Eventually, this request will be completed by the system, and the Protocol Service will release all resources associated with the job.

Queries normally directed from a client (Figure 4) to the printing machine 12 are, in one embodiment, processed by use of an HTTP server 107 operating in conjunction with the DM subsystem 108. In the preferred embodiment, the structure and functionality of the HTTP server resides in a proxy server 107A (Figure 5), the details of which proxy server are discussed in further detail below. It will be appreciated by those skilled in the art that while the illustrated embodiments of Figures 4 and 5 include an HTTP server, embodiments employing other server types is contemplated. That is, either server 107 or 107A could assume the form of any server that facilitates browsing on a network (as the term "browsing" is contemplated in the art) between clients and document processing devices without altering the purpose for which the preferred embodiment is intended.

The Microkernel has a Document Management (DM) subsystem that performs most of the DPA/POSIX Server functionality. The DM subsystem validates user requests, queues requests, spools document data, schedules the job for the device, and collects and maintains status information. The DM subsystem extends the DPA/POSIX Server in some aspects, since it can be configured to handle scan jobs (for filing or faxing) and copying jobs. DM provides for document sniffing, spooling, and scheduling services. Service providers, such as Document Processing 110 can register their services with DM.

Document Processing (DP), which includes the Image Frame Store (IFS) and the instantiation of at least one producer, is provided with the Microkernel. DP processes documents into images (full frame buffers or raster-scan bands, depending on the configuration of the Microkernel). The Image Frame Store assigns producers to consumers.

Essentially, the Microkernal 104 can be thought of as a generic ESS while the subsystem 106 can be thought of as an application specific ESS. That is, the Microkernal 104 contains the fundamental building blocks of a print server, while the subsystem 106 contains all of the software components necessary to, in conjunction with the Microkernal 104, provide the VCM 16 with a desired level of operability. More particularly, an Agent, which filters out all commands/requests emanating from the Microkernal 104, is designated with the numeral 114. Basically, the Agent serves as a "hook" into the generic ESS to facilitate the handling of all remote requests. The Agent works in conjunction with other services, such as Print Services 116 and Diagnostics 118, to support the operation of the VCM.

The Agent 114 also communicates with an ESS Query Utility 120 to maintain, among other things, a composite queue. While the functions of the Agent and the ESS Query Utility could be combined, they are shown as separate here in a modularized model. The ESS Query Utility also communicates with a Scan-to-File process 122, which process facilitates the filing of previously scanned documents to the network, as well as an Accounting/ Authorization/Authentication service ("AAA") 124. The AAA is used, among other things to authorize the performance of certain acts sought to be performed by a remote client. In one example, the AAA is implemented with software of the type found in Xerox' DocuSP 1.0 print server. As will appear, the AAA facilitates the preferred embodiment in that it prevents the undesirable tampering of one or more queued jobs by unauthorized system users. Additionally, as will appear, ESS Query Utility 120 can be used to obtain a host of information other than queue information. For example, the Utility 120 can be employed to obtain both machine configuration information (such as machine settings) as well as status information relating to subsystems/processes other than the queue(s).

Referring to the printing machine 12 aspect of Figure 4, a Copy Service 128 communicates with the ESS Query Utility 120 and a VCM Queue Utility 130. The Copy Service, which resides, in one example, on the controller 44 (Figure 6) performs a function, on the copy side, comparable to the DM 108. Among other things, the Copy Service, supervises the development of copy and Fax jobs as well as the management of the VCM Queue. The VCM Queue Utility communicates with and gathers queue related data from a Mark Service 132 and a suitable User Interface 134. While the functions of the User Interface and the VCM Queue Utility could be combined, they are shown as separate here in a modularized model.

The Mark Service is associated with the printer 20 (Figures 2 and 3) and a VCM Queue is associated with the User Interface, as on, for example, the Xerox Document Centre 35 digital copier. As will be appreciated by those skilled in the art, both of the Mark Service and the User Interface are key components in developing and maintaining the VCM Queue. For example, the complexion of the VCM Queue is constantly being altered as a result of activity in the Mark Service, while a significant amount of control is asserted on the VCM Queue as a function of communication with the User Interface.

Referring still to Figure 4, the HTTP server 107 further includes a common gateway interface ("CGI") designated with the numeral 140. As discussed above, the CGI, through use of suitable software, permits output responsive to user provided parameters, to be communicated to the client 100. More particularly, in practice a client user develops a query (including a set of parameters) which requests an output from a remote network system, such as the printing system 12. In one example, a request may be made with respect to information regarding the order of jobs in a queue or the current settings of the printing system. As will be appreciated by those skilled in the art, a query may be directed toward a wide range of information associated with the printing system and the remote network system being queried could include a system other than a printing system - for instance, the remote network system could include a stand-alone scanning device.

Referring to Figure 5, the proxy server, which communicatively couples the clients 100 with document processing devices 200-1 (e.g. printing system 12), 200-2, . . . 200-N, includes the following primary components:

HTTP Server 201;

Application Layer 202;

Device Data Cache & Device/User Database 204;

Routing Interface 206; and

Communications Interface 208.

In an exemplary implementation, the HTTP server 201 includes Microsoft's Internet Information Server ("Internet Information Server" ("IIS") is a trademark used by Microsoft in conjuction with web services), while the application layer 202 includes Microsoft's Internet Server applications ("Internet Server Applications" ("ISAs") is a trademark used by Microsoft in conjuction with web services), and filters (e.g. printing handlers, request for information handlers, and data update handlers). An ISA is a Dynamic Linked Library ("DLL") that gets loaded into the IIS's address space in response to a client request. The operation that takes place in response to the request happens in the ISA.

In the exemplary implementation, the device data cache & device/user database 204 (referred to below simply as "database") stores all relevant information that the proxy server has acquired from the devices 200. The stored information includes, among other things:

- a list of the devices 200,
- a current job queue for each device,
- each device's current job status,
- the current site settable for each device,
- the driver(s) for each device,
- references to appropriate strings and bitmaps to be displayed at the client for each device.

The routing interface 206, which preferably comprises a suitable application programmable interface, includes, in one example, three subsystems, namely a data supply application, a data acquisition daemon, and a device installation tool. Preferably, the data supply application (1) makes changes in site settable values in a particular device, and (2) issues job management commands to a particular device. Additionally, data acquisition daemons act as applications that initialize the communications interface 208 and gather, for instance, device, job status, and site settable information from the communications interface 208 about each registered device. In turn, the daemons populate the database with such information. Finally, the device installation tool is, as explained in further detail below, responsible for adding or deleting devices in response to client request.

The communications interface is a set of software programs intended to provide primary connectivity between the clients and the devices. In other words, a key objective of the communications interface is to provide communications between a document processing device and the proxy server's database. In practice, the communications interface acts as a liaison between the Data Acquisition Daemons and the supported devices on the customer's network. It knows how to gather and report various device status, job status, and site settable data via C++ objects and their member functions. In one instance, the communications interface includes a software module to control the communication between the database and a device type. Accordingly, a given module may be adapted to serve a single device or a whole family of devices.

As should be appreciated, while the concept underlying the disclosed server of Figure 4 can be used to implement the communications interface of Figure 5, another mode of the communications interface resides in the Document Centre System 35, a printing system provided by Xerox Corporation ("Document Centre System") is a trademark of Xerox. The following is an overview of the communications interface components, which includes information regarding middleware layer components, network abstraction layer components, infrastructure layer components and other protocols:

Middleware Layer Components

This layer implements a basic abstraction of a physical network, and provides an object representation of all supported network entities, including a network neighborhood, queues, file servers and printers and/or multi-function devices. Additionally, this layer translates the abstraction into a number of different network operating systems and protocols, including Novell, SNMP, and RPC.

Network Abstraction Layer Objects

This service, which provides an interface to a network abstraction library, is implemented as a set of C++ objects.

Infrastructure Layer Components

This layer provides low level network connectivity for one or more families of document processing platforms.

Other Protocol Support

Protocols used to facilitate operability of the above-mentioned components include, among others, TCP/IP, Netware ("Netware" is a trademark used by Novell, Inc. in conjunction with network operating systems), and LAN Manager.

The following are selected data flow scenarios contemplated for the system of Figure 5 (numbers in parentheses are keyed to this drawing):

In general:

- The database acts as a cache for all relevant device information.
- The clients receive information through/from the database.
- The database gets populated by the data supply and acquisition daemons via the communications interface, and by the device installation tool.

Client Requests for Information from server

For Device Status, Job Status, and Current Site Set:able Values:

- In each case, the client requests a URL (web page) for a particular device of a particular type (1).
- The HTTP server calls the appropriate function in Application Layer (2).
- That function requests a home page (for the type of device) and its associated data (for the particular device) from the database (3) which returns the data (10).
- The application layer retrieves the appropriate web page, plugs in the data and returns the page to the client (11, 12).
- The ISA retrieves the appropriate web page, plugs in the data and returns the page to the client (11, 12).

Client Upload of Information to Proxy Server (Device / Job Management Commands)

For Altered Site Settable Values and Job Management Command:

- In each case, the client sends the data and its purpose to the HTTP server (1).
- The HTTP server calls the appropriate function in the application layer (2).
- The function of the application layer changes the appropriate cell(s) in the database (3).
- Attempting to change a value in the database triggers a data supply function call (4) that changes the values on the appropriate device via the communications interface (5, 6).
- After the data is updated on the device, the database completes the change in data.

Proxy Requests for Information from Device

For Device Status Changes, Job Status Changes, and Current Site Settable Values, Device Addition and Removal

- The data acquisition daemon registers a device with the communications interface (13). (A new device appears as a System Administrator adds a print queue on the proxy server.)
- The Middleware proceeds to acquire current device status/job status for that device (7) and return it to the data acquisition daemon (8).
- The data acquisition daemon stores the updated data in the database (9).
- When the data in the database is about to change, the database invokes functions in the application layer which sends the data updates to appropriate clients.

Device Installation

The user defines a new device by specifying an arbitrary name, a device IP address, and a device type. An LPR port and queue associated with that device is automatically set up on the HTTP server.

- The new device is then listed in the data base (16) for display at the clients.
- The new device is also registered with the communications interface (15) for access to device data.

Referring to Figures 6A and 6B, an advantageous aspect of the preferred embodiment is discussed. In a less preferred approach, as shown in Figure 6A, the application layer is responsible for making detailed requests, with respect

to, for example, obtaining device related information. That is, for those situations in which the client desires information regarding the machine settings of one of the devices 200 (Figure 5), the application, in the illustrated embodiment of Figure 6A, provides the communications interface 208 with a detailed list regarding the machine value settings that it seeks. In turn, the detailed list is communicated to a suitable module ("CIS_") in the communications interface, the module causing queries or commands of the list to be communicated to a corresponding device at which client requested values are provided. With respect to the module, each device in the disclosed system is represented as an instance of a C++ class, where each class represents a type of device. That is, one class corresponds with one type of device (e.g. a printing system), another class corresponds with another type of device (e.g. a stand-alone image capture device), and so on. As should be appreciated, this less preferred approach requires one writing code for the application layer to have relatively significant knowledge regarding the various machine settings associated with the particular device for which information is sought.

By contrast, in the preferred approach of Figure 6B, the application receives a request from a client and translates that request into a function call with an argument. In practice, as will appear from the discussion below, the information call permits the routing interface 206 to communicate to the communications interface, in a shorthand manner, what information the client desires. More particularly, the substance of the function and its argument is made available to an appropriate module in the communications interface and that module decides which values are to be provided to or which actions are to be taken with respect to a particular device. As should be appreciated, this greatly reduces the amount of commands to be provided by the application layer.

Using the underlying structure/function of the communications layer, the interface to each device looks the same to the application layer, regardless of which type of device it is and regardless of the underlying structure/function required to access the device. An exemplary list of function calls used by the proxy server is provided below:

Job Management Commands: Hold Job(DeviceName, JobID)
Promote Job(DeviceName, JobID)
Cancel Job(DeviceName, JobID)
Release Job(DeviceName, JobID)

Status Commands:

Job Status	GetJobStatus(DeviceName)
Device Status	GetDeviceStatus(DeviceName)

Configuration Commands:

Configuration Display	GetDeviceSettings(DeviceName)
Configuration Change	SetDeviceSettings(DeviceName, VariablesToSet)

Installation Commands:

Device Addition	AddDevice(DeviceName, IP Address, DeviceType))
Device Deletion	DeleteDevice(DeviceName)

Referring to Figure 7, an overview of the manner in which the above calls or commands are used is provided. Initially, a request is made from a client 100 (Figure 5) to the proxy server 107A and, at step 214, the request is read at the application layer 202. Pursuant to making a function call, the application layer checks the database 204 (step 216) to determine what information about the devices exist and when that information populated the database. Preferably, the information in the database is "date stamped" so that, under certain circumstances, a client request for information can be addressed without invoking the communications interface 208 with respect to such request. For example, in one contemplated situation, relatively current machine setting information is provided from the database to the client without invoking the communications interface in direct response to such request. For ease of discussion, it will be assumed below that information or operations with respect to devices 200 are performed by invoking the communications interface with the routing interface 206 in direct response to a client's request.

At step 218, a determination as to whether the request seeks to have a device installed, i.e. added, is made. Assuming an addition is requested, a check is performed at step 220 to determine if the device to be added is already listed in the database. If the device is listed in the database, i.e. the device has already been installed, then an error

message issues (i.e. the error message is reported back to the client seeking installment), at step 222; otherwise, an Add function call is, at step 224, filled out with the name of the device to be added. In turn, the routing interface 206 (preferably an API) causes the communications interface 208 to add the new device (step 226) in accordance with the procedure described below.

Provided a request for the addition of a new device has not been made, a determination is made, at step 230, as to whether a device is to be removed. Assuming a device is to be removed or deleted, a determination, at step 232, as to whether the device is listed in the database 204 is made. If the device to be removed is not in the database, then an error message issues (i.e. the error message is reported back to the client seeking installment), at step 234; otherwise, a Remove function call is, at step 236, filled out with the name of the device to be removed. In turn, the routing interface or API 206 causes the communications interface 208 to remove the designated device (step 238) in accordance with the procedure described below.

Assuming that an installation is not required, a determination is made, at step 242, to determine whether a Get operation is requested. In order to provide a Get operation, a Get function is provided by the application layer (step 244) and its corresponding argument is filled out in accordance with the procedure below. In turn, the API 206 causes the communications interface, by way of step 246, to implement the requested Get operation. On the other hand, if a Set operation is requested (see step 248), then a Set function is provided by the application layer (step 250) and its corresponding argument is filled out in accordance with the procedure below. In turn, the API 206 causes the communications interface, by way of step 252, to implement the requested Set operation. In any event the status of an action initiated via the implementation of Figure 7 is reported back to the client requesting the action via the "STATUS" block.

The following commands/calls are implemented with selected components of the server 107A, with the components being referred to below as the "interface".

Job Management Commands enable a user to issue commands to jobs the interface knows about in the Window NT queue or on the destination device's hard disk if any. To the calling program, it doesn't make any difference whether the job is in a server queue or at the device. The call is the same.

Status Commands enable the user to get current status about a particular device or about jobs destined for a particular device:

Configuration Commands are used to get and set various values in the device's non-volatile memory that define the current device's configuration:

Discovery or Installation Commands

Numerous features of the disclosed embodiments will be appreciated by those skilled in the art:

First, a proxy server which optimizes code development is provided. More particularly, by disposing an application programming interface (API) downstream of an application layer and upstream of a communications interface, the burden of developing code at the application layer is minimized without substantially increasing the burden of code development at the communications layer. Essentially, through judicious use of the API, code development is distributed between the application layer and the communications interface in an intelligent manner.

It follows from the use of the API that requests or "calls" from the application layer to the communications layer are made exceedingly simple. Preferably, to obtain information from or perform an operation with respect to a given device, the application layer need only provide the API with a function call having a suitable argument. In turn, the API routes the function call to a subsystem in the communications interface for appropriate processing.

Second, the proxy server is usable, in an Internet context, with all sorts of document processing devices, none of which devices need be adapted specially for Internet use. Accordingly, all of the devices are usable with the server, notwithstanding their possession of a special adapter card and/or an HTTP server. Thus, the proxy server is capable of easily accommodating devices from different manufacturers with quite different designs.

Finally, the proxy server uses a database in a manner that minimizes the amount of time required to obtain device related information requested by one or more clients. In particular, time stamped information is stored periodically in the database by the API and communications interface. If the information is requested by the client and is sufficiently current when the application accesses the database, then the information is provided to the requesting client without any need to invoke the API or communications interface.

Preferably, said communications interface obtains information from a selected one of the plurality of printers, a pertinent portion of the information stored in the database is updated with the obtained information when a preselected condition is met.

Preferably, the pertinent portion of the information is characterized by an age, wherein updating of the pertinent portion occurs when the age exceeds a preselected threshold age.

Preferably, the pertinent portion of the information is updated on a periodic basis.

Claims

1. A printing system in which one or more clients communicate with a plurality of printers by way of a print server whose architecture is characterized by a plurality of layers, wherein one of the plurality of layers receives a request from one of the one or more clients and the request designates an operation to be performed with respect to one of the plurality of printers, comprising:

   an application layer, communicating with the one of the plurality of layers, for developing a command expression based on the request received by the one or the plurality of layers;
   a communications interface including a first connectivity module and a second connectivity module, the first connectivity module communicating with a first one of the plurality of printers and the second connectivity module communicating with a second one of the plurality of printers; and
   a routing interface, communicating with both said application layer and said communications interface, for directing the command expression to a selected one of the first connectivity module and the second connectivity module, wherein the selected one of the first and second connectivity modules uses the command expression to perform at least a part of the designated operation with respect to the one or the plurality of printers.

2. The printing system of claim 1, wherein said routing interface comprises an application programmable interface for interpreting the command expression to determine which of the first and second connectivity modules is to receive the command expression.

3. The printing system of claim 1, in which the one of the plurality of printers includes a queue for storing one or more print jobs with each job in the queue being characterized by state information, wherein the command expression indicates, to the selected one of the first and second connectivity modules, that selected state information regarding one or more jobs in the queue is to be retrieved.

4. The printing system of claim 1, in which the one of the plurality of printers is characterized by a set of machine settings, wherein the command expression indicates, to the selected one of the first and second connectivity modules, that selected information regarding the set of machine settings is to be retrieved.

5. The printing system of claim 1, in which the one of plurality of printers is deletable from or addable to the printing system, wherein the command expression indicates, to the selected one of the first and second connectivity modules that the one of the plurality of printers is to be added to or deleted from the printing system.

6. The printing system of claim 1, wherein the one of the plurality of layers comprises an HTTP server responsive to hypertext transfer protocol (HTTP) requests received from any one of the one or more clients.

7. The printing system of claim 6, wherein at least one, but not all, of the plurality of printers includes an HTTP server other than the HTTP server of the one of the plurality of layers.

8. The printing system of claim 1, further comprising a database, communicating with both said application layer and said routing interface, for storing information regarding each of the plurality of printers.

9. A printing system for use in an Internet or Intranet based system where one or more clients communicate with document processing devices by way of a server whose architecture is characterized by a plurality of layers, comprising:

   an HTTP server layer for receiving a request from one of the one or more clients with the request seeking a set of information relating to one of the plurality of document processing devices;
   an application layer, communicating with said HTTP server layer, for developing a command set based on the request received at said HTTP server layer;
   a set of first interfaces communicating with the plurality of document processing devices, wherein each of the first interfaces is corresponded with at least one of the plurality of document processing devices; and
   a second interface, communicating with both said application layer and each of the first interfaces of said set of first interfaces, for directing the command set to a selected one of the first interfaces, wherein the selected

one of the first interfaces uses the command set to obtain the set of information sought by the one of the one or more clients.

10. The printing system of claim 12, further comprising a database, communicating with both said application layer and said second interface, for storing information regarding each of the plurality of document processing devices.

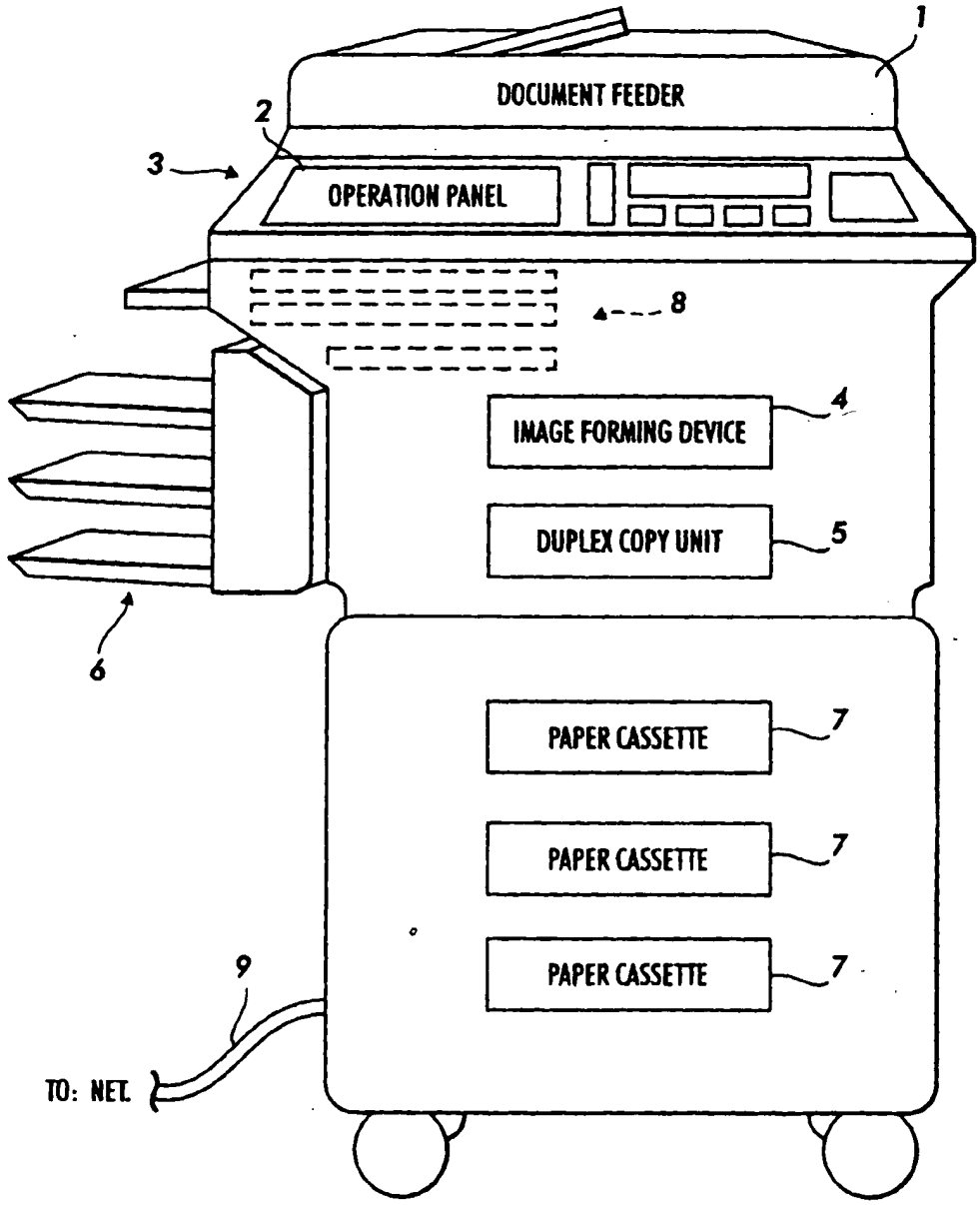


FIG. 1
PRIOR ART

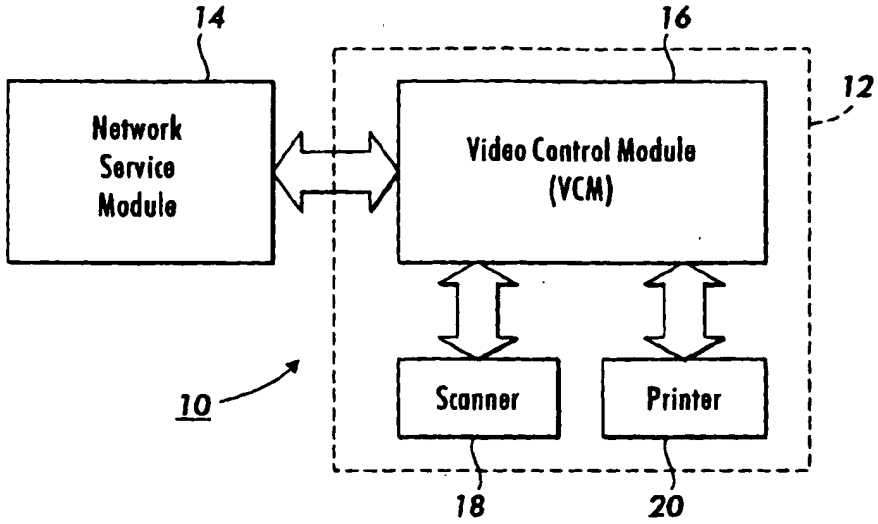

14
16
12
Network Service Module
Video Control Module (VCM)
10
Scanner
Printer
18
20

FIG. 2

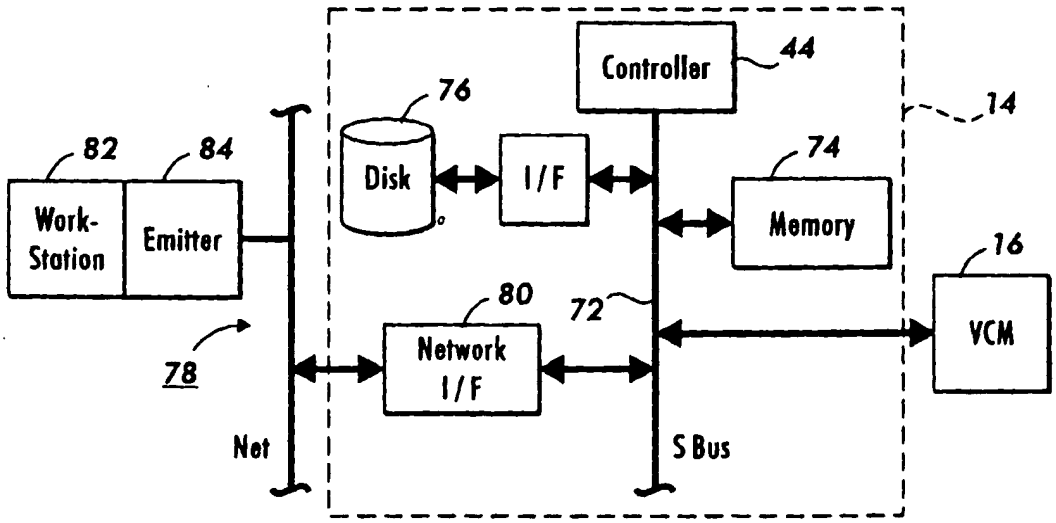

Controller
44
76
14
82
84
Disk
I/F
74
Work-Station
Emitter
Memory
16
80
72
VCM
78
Network I/F
Net
S Bus

FIG. 3

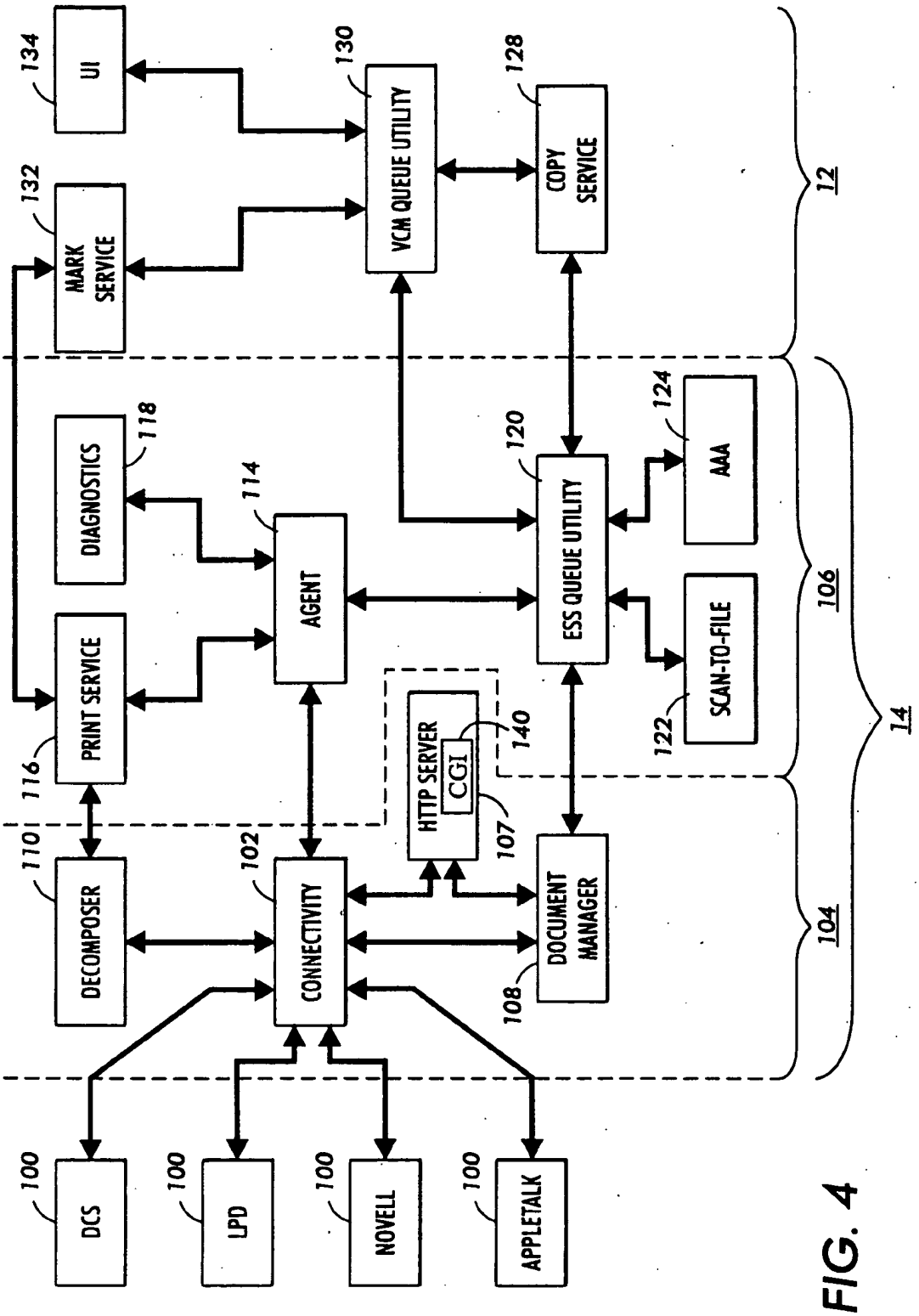

UI
134
VCM QUEUE UTILITY
130
COPY SERVICE
128
MARK SERVICE
132
12
DIAGNOSTICS
118
AGENT
114
ESS QUEUE UTILITY
120
AAA
124
PRINT SERVICE
116
SCAN-TO-FILE
122
106
HTTP SERVER
CGI
140
107
DECOMPOSER
110
CONNECTIVITY
102
DOCUMENT MANAGER
108
104
14
DCS
100
LPD
100
NOVELL
100
APPLETALK
100

FIG. 4

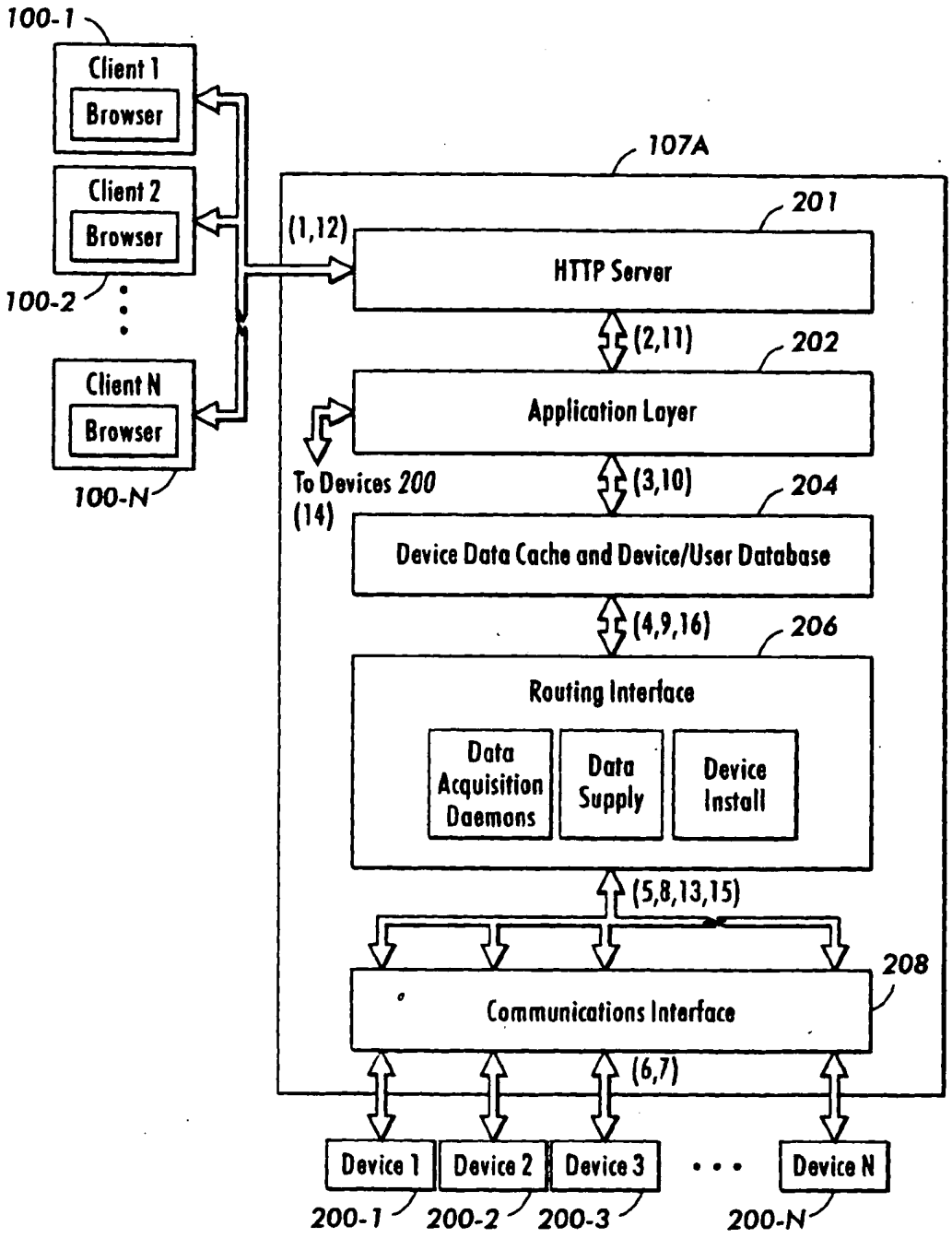

100-1
Client 1
Browser
Client 2
Browser
100-2
Client N
Browser
100-N
107A
201
(1,12)
HTTP Server
(2,11)
202
Application Layer
To Devices 200
(14)
(3,10)
204
Device Data Cache and Device/User Database
(4,9,16)
206
Routing Interface
Data Acquisition Daemons
Data Supply
Device Install
(5,8,13,15)
208
Communications Interface
(6,7)
Device 1
Device 2
Device 3
Device N
200-1
200-2
200-3
200-N

FIG. 5

FIG. 6A

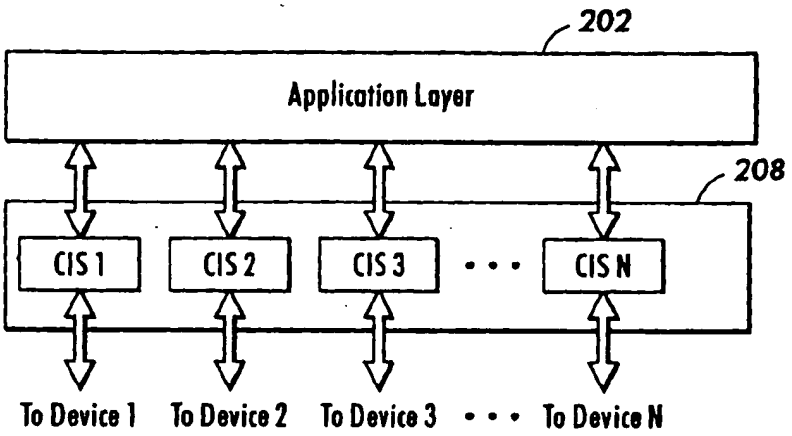
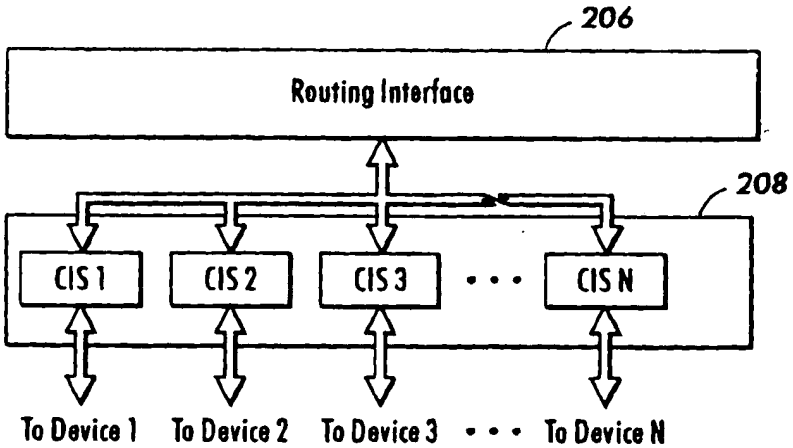

202
Application Layer
208
CIS 1
CIS 2
CIS 3
CIS N
To Device 1
To Device 2
To Device 3
To Device N

FIG. 6B


206
Routing Interface
208
CIS 1
CIS 2
CIS 3
CIS N
To Device 1
To Device 2
To Device 3
To Device N

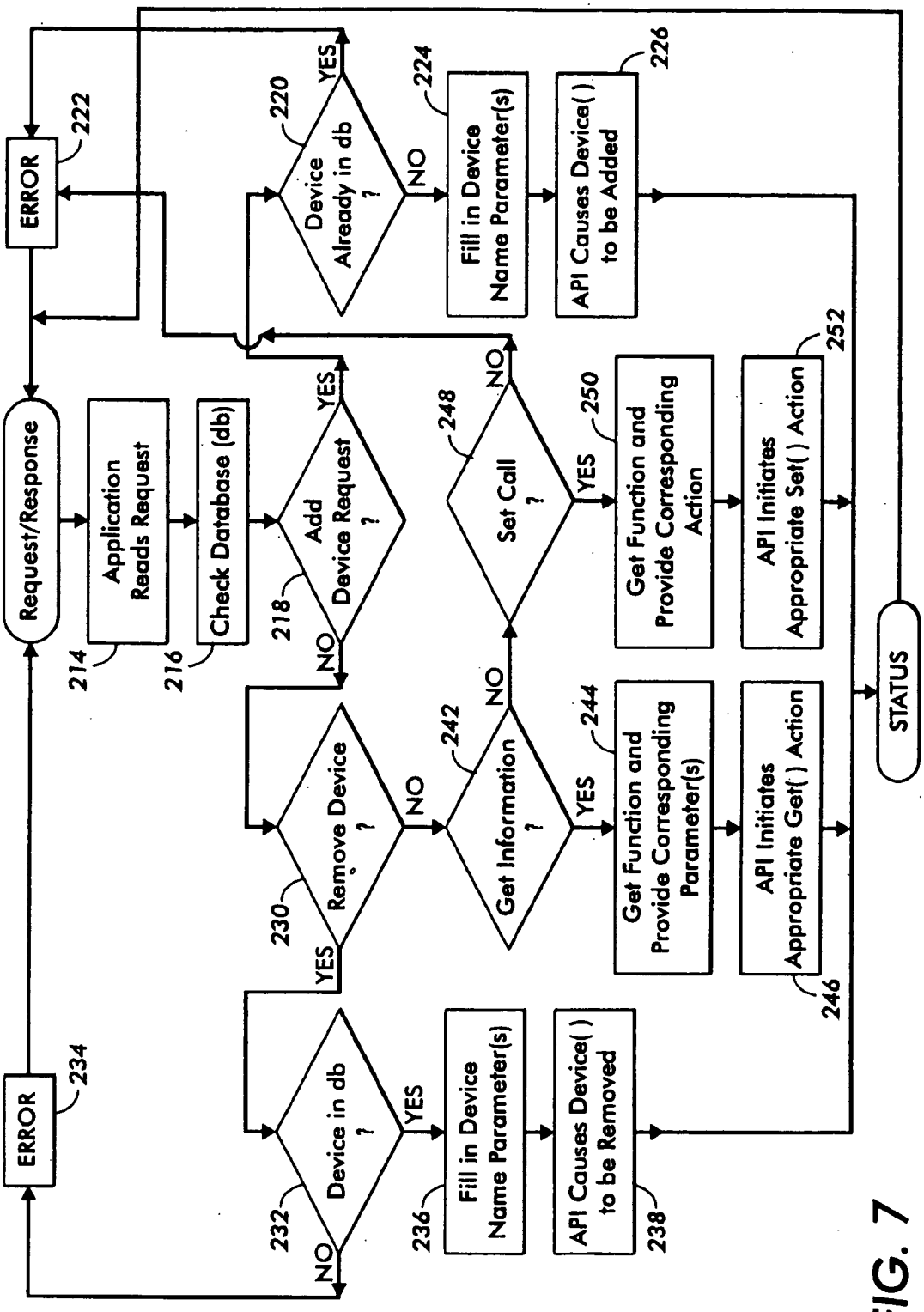

Request/Response
Application Reads Request
214
Check Database (db)
216
Add Device Request ?
218
YES
NO
Device Already in db ?
220
YES
NO
ERROR
222
Fill in Device Name Parameter(s)
224
API Causes Device( ) to be Added
226
Set Call ?
248
YES
NO
Get Function and Provide Corresponding Action
250
API Initiates Appropriate Set( ) Action
252
Remove Device ?
230
YES
NO
Get Information ?
242
YES
NO
Get Function and Provide Corresponding Parameter(s)
244
API Initiates Appropriate Get( ) Action
246
Device in db ?
232
YES
NO
Fill in Device Name Parameter(s)
236
API Causes Device( ) to be Removed
238
ERROR
234
STATUS

FIG. 7

Index of Claims

Application No.	Applicant(s)
09/797,488	FRANKLAND ET AL.
Examiner	**Art Unit**
Mary Cheung	3621

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	3/29/05	8/24/05							
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	3	√	√							
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	149	√	-							
	150	√	-							

Index of Claims (continued)

Application No.	Applicant(s)	
09/797,488	FRANKLAND ET AL.	
Examiner	**Art Unit**	
Mary Cheung	3621	

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	3/29/05	8/24/05							
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Claim		Date								
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Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3621	

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Consulted Kambiz Abdi	8/23/2005	MC
EAST	8/23/2005	MC

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	270365	first adj2 layer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:07
L2	263765	second adj2 layer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:07
L3	217126	1 and 2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:08
L4	8267	report and 3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:08
L5	2	broswer near5 application	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:08
L6	17412	browser near5 application	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:08
L7	66	4 and 6	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:08
L8	4	7 and @ad<"19981218"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:13
L9	111214	layer and report	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:12

L10	45147	(data or metadta or database) near3 layer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:13
L11	22298	(rule or restrict$5 or regulation) near5 layer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:13
L12	1532	10 and 11	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:13
L13	403	12 and report	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:13
L14	123	13 and java	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:13
L15	18	14 and @ad<"19981218"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:25
L16	18	15 not 8	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:14
L17	88	13 and @ad<"19981218"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:27
L18	87	17 and application	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:26
L19	21	18 and brows$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:26

read

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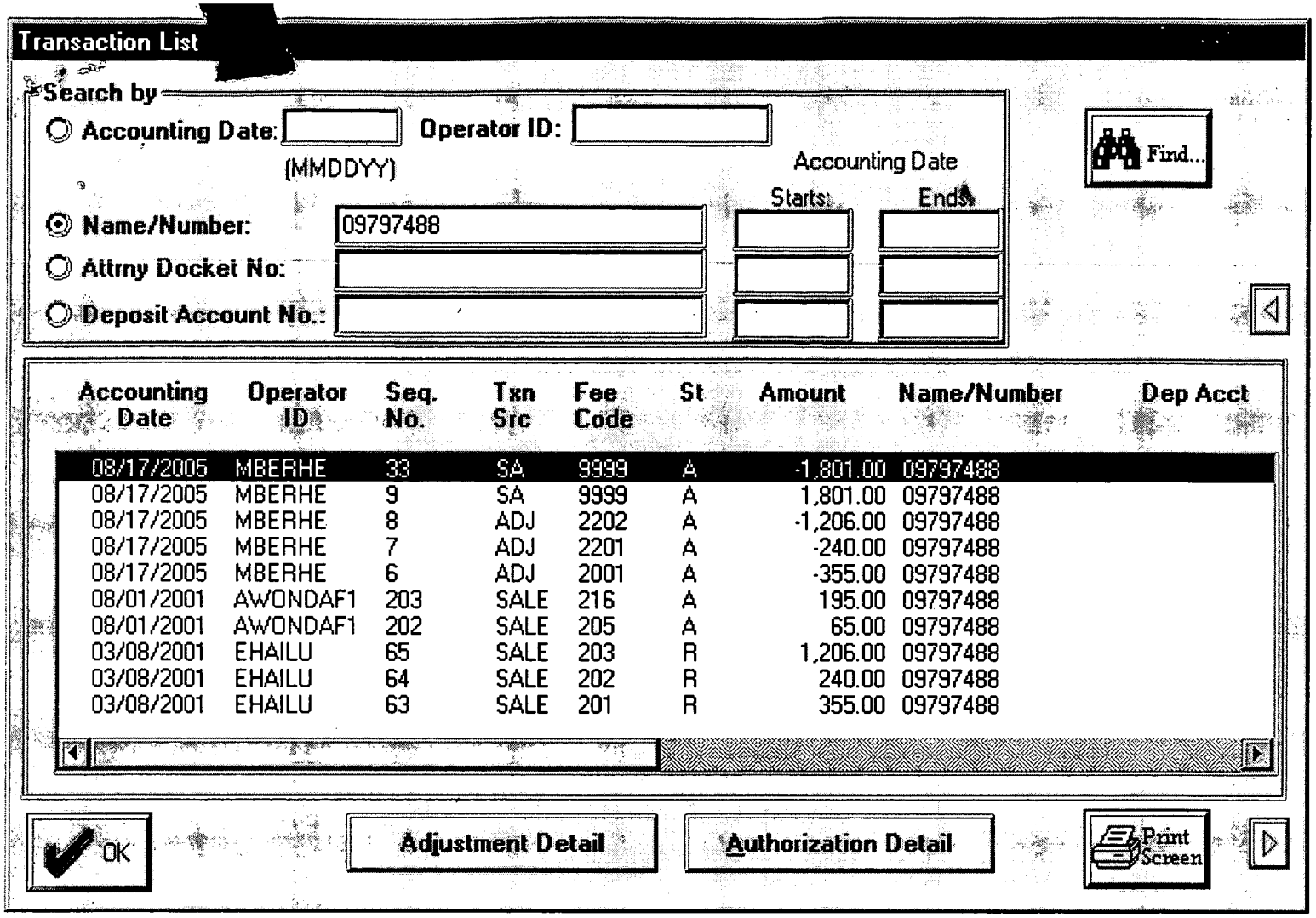
L21	0	crytal adj report	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:27
L22	299	crystal adj report	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:27
read L23	39	22 and @ad<"19981218"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/08/23 17:27



Adjustment date: 08/17/2005 MBERHE
08/01/2001 AWONDAF1 00000093 09797488
01 FC:205 -65.00 OP

Adjustment date: 08/17/2005 MBERHE
08/01/2001 AWONDAF1 00000093 09797488
02 FC:216 -195.00 OP

BEST AVAILABLE COPY

09/257 488

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2000

Application or Docket Number: ~~104632-9911-00~~

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	154	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	154 minus 20=	* 134
INDEPENDENT CLAIMS	9 minus 3 =	* 6
MULTIPLE DEPENDENT CLAIM PRESENT	☐	

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

SMALL ENTITY TYPE ☐ RATE	FEE	OR	OTHER THAN SMALL ENTITY RATE	FEE
BASIC FEE	355.00	OR	BASIC FEE	710.00
X$ 9=	1206.00	OR	X$18=	
X40=	240.00	OR	X80=	
+135=		OR	+270=	
TOTAL	1801.00	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 154	Minus	** 154	= —
Independent	* 9	Minus	*** 9	= —
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

SMALL ENTITY RATE	ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	ADDITIONAL FEE
X$ 9=	—	OR	X$18=	—
X40=	—	OR	X80=	—
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	—

6-15-05

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 65	Minus	** 154	= /
Independent	* 8	Minus	*** 9	= /
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

SMALL ENTITY RATE	ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	ADDITIONAL FEE
X$ 9=	/	OR	X$18=	/
X40=	/	OR	X80=	/
+135=	/	OR	+270=	/
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

SMALL ENTITY RATE	ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/797,488	03/01/2001	Richard Frankland	104632-991101

CONFIRMATION NO. 4851

36716
LADAS & PARRY
5670 WILSHIRE BOULEVARD, SUITE 2100
LOS ANGELES, CA 90036-5679

OC000000016342660
OC000000016342660

Date Mailed: 06/22/2005

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/15/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

GYZELL P JOHNSON
3600 (571) 272-6599

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/797,488	03/01/2001	Richard Frankland	104632-991101

CONFIRMATION NO. 4851

Gary Cary Ware & Freidenrich
1755 EMBARCADERO
Palo, CA 94303-3340

OC000000016342637

OC000000016342637

Date Mailed: 06/22/2005

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/15/2005.

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

GYZELL P JOHNSON
3600 (571) 272-6599

OFFICE COPY

TN 3621

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Richard Frankland et al.	)	Group Art No.: 3621
Application No: 09/797,488	)	Examiner: Cheung, Mary Da Zhi Wang
Filed: March 1, 2001	)	Re: **RESPONSE**
For: "INTEGRATED CHANGE MANAGEMENT UNIT"	)	Our Ref: B-5746CONT 952776-6/AS
	)	Date: June 13, 2005

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

Dear Sir:

This paper is filed in response to the Official Action dated March 31, 2005, a reply to which is initially due by June 30, 2005. Please consider the following amendments and remarks with respect to the subject application. All amendments and remarks herein are made without prejudice. Also enclosed with the present response are a 'Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address' and a 'Statement Under 37 CFR 3.73(b)' signed by the assignee for the present application (see parent application No. 09/215,898, now U.S. Pat. No. 6,341,287, on which the present continuation application is based, in conjunction with MPEP 306).

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 12 of this paper.

* * *

AMENDMENTS TO THE CLAIMS

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

LISTING OF CLAIMS

1. (canceled)

2. (previously presented) A system for providing a dynamically generated application having one or more functions and one or more user interface elements; comprising:

a server computer;

one or more client computers connected to the server computer over a computer network;

a first layer associated with the server computer containing information about the unique aspects of a particular application and a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers; and

each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer.

3. (previously presented) The system of Claim 2 further comprising a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.

4. (previously presented) The system of Claim 3, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

5. (previously presented) The system of Claim 2, wherein the second layer comprises a business content database having data about one or more different predetermined business applications.

6. (previously presented) The system of Claim 5, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

7. (previously presented) The system of Claim 5, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

8. (previously presented) The system of Claim 7, wherein the metadata database further comprises data about the user interface and functionality including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

9. (previously presented) The system of Claim 3, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access.

10. (previously presented) The system of Claim 2, wherein the server computer further comprises a change management layer for automatically detecting changes that affect an application.

11. (previously presented) The system of Claim 10, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

12. (previously presented) The system of Claim 11, wherein the server further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface

elements of the application based on the changes detected by the intelligent agents.

13. (previously presented) The system of Claim 2, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.

14. (previously presented) The system of Claim 13, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.

15. (previously presented) The system of Claim 13, wherein the builder module further comprises an event builder for generating triggering events for a form.

16. (previously presented) The system of Claim 13, wherein the builder module further comprises a report builder for building a report for a particular application.

17. (previously presented) The system of Claim 13, wherein the builder module further comprises a document builder for mapping a document onto the first layer.

18. (previously presented) The system of Claim 13, wherein the builder module further comprises a formula builder for generating formulas.

19. (previously presented) The system of Claim 16, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.

20. (previously presented) The system of Claim 13, wherein the builder module further comprises a worklist builder for generating a worklist.

21. (previously presented) The system of Claim 13, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.

22. (previously presented) The system of Claim 2, wherein the first and second layers are stored on the server computer.

23. (previously presented) The system of Claim 2, wherein the first and second layers are distributed across one or more server computers.

24. (previously presented) A method for dynamically generating an application using a server computer and one or more client computers connected to the server computer over a computer network, the method comprising:

providing a first layer containing information about the unique aspects of a particular application;

providing a second layer containing information about the user interface and functions common to a variety of applications, wherein a particular application is generated based on the data in the first and second layers;

establish a connection between a client computer and the server computer;

generating the functionality and user interface for a particular application for the client computer as the client computer connects to the server computer; and

distributing the user interface and functionality of the particular application to the client computer wherein the particular application and its user interface are dynamically re-generated each time a client establishes a connection with the server computer.

25. (previously presented) The method of Claim 24 further comprising providing a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.

26. (previously presented) The method of Claim 25, wherein the third layer further

comprises a JAVA data management layer that distributes one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

27. (previously presented) The method of Claim 24, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.

28. (previously presented) The method of Claim 27, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

29. (previously presented) The method of Claim 27, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

30. (previously presented) The method of Claim 29, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

31. (previously presented) The method of Claim 25, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access.

32. (previously presented) The method of Claim 24 further comprising automatically detecting changes that affect a particular application.

33. (previously presented) The method of Claim 32, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

34. (previously presented) The method of Claim 33, wherein automatically detecting

changes further comprises automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

35. (previously presented) The method of Claim 24 further comprising permitting a user to build a user interface for a particular application using the second layer.

36. (previously presented) The method of Claim 35, wherein the building further comprises one or more of editing an existing form and generating a new form that contains the data for a particular application.

37. (previously presented) The method of Claim 35, wherein the building further comprises generating triggering events for a form.

38. (previously presented) The method of Claim 35, wherein the building further comprises building a report for a particular application.

39. (previously presented) The method of Claim 35, wherein the building further comprises mapping a document onto the first layer.

40. (previously presented) The method of Claim 35, wherein the building further comprises generating formulas associated with the application.

41. (previously presented) The method of Claim 38, wherein the building further comprises generating one or more views/queries used in the reports.

42. (previously presented) The method of Claim 35, wherein the building further comprises generating a worklist.

43. (previously presented) The method of Claim 35, wherein the building further comprises generating the intelligent agents that detect changes associated with the particular business application.

44. (previously presented) The method of Claim 24 further comprising distributing the first and the second layers on the server computer.

45. (previously presented) The method of Claim 24 further comprising distributing the first and second layers across one or more server computers.

46. (previously presented) A server for dynamically generating an application for one or more client computers connected to the server computer by a computer network, comprising:

a first layer associated with the server containing information about the unique aspects of a particular application;

a second layer associated with the server containing information about the user interface and functions common to a variety of applications;

means for dynamically generating a particular application based on the first and second layers each time a client computer connects to the server computer; and

means for distributing the user interface and functionality of the particular application to a client computer.

47. (previously presented) The server of Claim 46 further comprising a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.

48. (previously presented) The server of Claim 47, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.

49. (previously presented) The server of Claim 46, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.

50. (previously presented) The server of Claim 49, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.

51. (previously presented) The server of Claim 49, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.

52. (previously presented) The server of Claim 51, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.

53. (previously presented) The server of Claim 46 further comprising a change management layer for automatically detecting changes that affect an application.

54. (previously presented) The server of Claim 53, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.

55. (previously presented) The server of Claim 54, wherein the change management layer further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.

56. (previously presented) The server of Claim 46, wherein the server further comprises

a builder module for permitting a user to build a user interface for a particular application using the second layer.

57. (previously presented) The server of Claim 56, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.

58. (previously presented) The server of Claim 56, wherein the builder module further comprises an event builder for generating triggering events for a form.

59. (previously presented) The server of Claim 56, wherein the builder module further comprises a report builder for building a report for a particular application.

60. (previously presented) The server of Claim 56, wherein the builder module further comprises a document builder for mapping a document onto the first layer.

61. (previously presented) The server of Claim 56, wherein the builder module further comprises a formula builder for generating formulas.

62. (previously presented) The server of Claim 59, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.

63. (previously presented) The server of Claim 56, wherein the builder module further comprises a worklist builder for generating a worklist.

64. (previously presented) The server of Claim 56, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.

65. (previously presented) The server of Claim 46, wherein the first and second layers

are distributed on the server computer.

66. (previously presented) The server of Claim 46, wherein the first and second layers are distributed across one or more server computers.

67. – 155. (canceled)

* * * * *

REMARKS

Claim amendments

Claims 2-155 are currently pending in the present application. With this amendment, claims 67-155 have been canceled without prejudice. The Applicants reserve the right to file the canceled claims in continuation or divisional applications related to the present application.

Claim Rejections – 35 USC § 112

In the Action, the Examiner rejects claims 2-155 under 35 USC § 112, second paragraph because they represent an undue multiplicity of claims. According to the Examiner, twenty-five claims are sufficient to properly define Applicants' invention. The Applicants respectfully disagree, at least in part, with the judgment of the Examiner.

Claims 67-155 have been canceled from the present application reducing the total number of claims to sixty-five. The Applicants submit that sixty-five claims do not represent an undue multiplicity of claims and that a lower number of claims would unfairly limit the scope of protection the Applicants are seeking to obtain for the present invention.

In particular, the sixty-five claims only contain three independent claims (claims 2, 24 and 46). The three independent claims are not "repetitious and multiplied" (using the wording of MPEP 2173.05(n) cited by the Examiner). Claim 2 is directed to a system comprising a server computer and one or more client computers. Claim 2 is directed to a method for dynamically generating an application using a server computer and one or more client computers. Claim 46 is directed to a server for dynamically generating an application for one or more client computers. Therefore, the Applicants respectfully submit that claims 2-66 comply with the requirements of 37 CFR § 1.75 and MPEP 2173.05(n).

* * *

The Applicants submit that all claims of the application as amended herein are in condition for allowance. Prompt issuance of a Notice of Allowance is earnestly solicited.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 on

June 13, 2005
(Date of Deposit)

Suzanne Johnston
(Name of Person Depositing)

Signature

6/13/05
Date

Respectfully submitted,

Alessandro Steinfl
Attorney for Applicant
Reg. No. 56,448
LADAS & PARRY
5670 Wilshire Blvd., Suite 2100
Los Angeles, CA 90036
(323)934-2300

Enclosures:
- Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address
- Statement under 37 CFR 3.73(b)
- Postcard

PTO/SB/82 (09-03)
Approved for use through 11/30/2005. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	09/797,488
Filing Date	March 1, 2001
First Named Inventor	Richard FRANKLAND
Art Unit	3621
Examiner Name	Mary Da Zhi Wang Cheung
Attorney Docket Number	B-5746CONT 952776-6

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

☐ A Power of Attorney is submitted herewith.

OR

☑ I hereby appoint the practitioners associated with the Customer Number: 36716

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

☑ The address associated with Customer Number: 36716

OR

☐ Firm *or* Individual Name					
Address					
Address					
City		State		Zip	
Country					
Telephone		Fax			

I am the:

☐ Applicant/Inventor.

☑ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Name	Douglas H. Sturgeon for Alternative Systems, Inc.		
Signature	Douglas Sturg		
Date	11-Jan-2005	Telephone	650-339-0400

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

PTO/SB/96 (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Richard FRANKLAND, et al.

Application No./Patent No.: 09/797,488 Filed/Issue Date: March 1, 2001

Entitled: "INTEGRATED CHANGE MANAGEMENT UNIT"

ALTERNATIVE SYSTEMS, INC., a Nevada corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:
1. ☑ the assignee of the entire right, title, and interest; or

2. ☐ an assignee of less than the entire right, title and interest.
The extent (by percentage) of its ownership interest is _____ %
In the patent application/patent identified above by virtue of either:

A. [✓] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 009674, Frame 0063, or for which a copy thereof is attached. *It should be noted that the Reel/Frame number provided corresponds to the parent of the above-identified application, U.S. Appln. No. 09/215,898, now U.S. Patent No. 6,341,287.

OR

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

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

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

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

[ ] Additional documents in the chain of title are listed on a supplemental sheet.

[ ] Copies of assignments or other documents in the chain of title are attached.
[NOTE: A separate copy (*i.e.*, the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

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

11-Jun-2005
Date

650-339-0400
Telephone number

Douglas H. Sturgeon
Typed or printed name

Douglas Sturgeon
Signature

President
Title

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Richard FRANKLAND, et al.	Group: 3621
Serial No.: 09/797,488	Examiner: Mary D.Z.W. Cheung
Filing Date: March 1, 2001	
For: "INTEGRATED CHANGE MANAGEMENT UNIT"	Our Ref: B-5746CONT 952776-6

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

CERTIFICATE OF MAILING OR TRANSMISSION

Date of Deposit: **June 13, 2005**

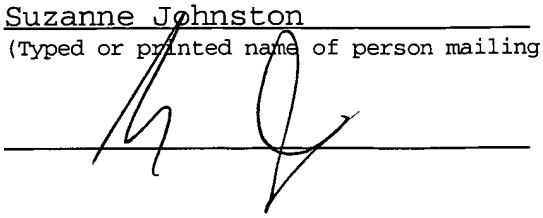
I hereby certify that the following attached papers or fees:

- postcard
- Response to Office Action Dated March 31, 2005 (14 pages)
- Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address (1 page)
- Statement Under 37 CFR 3.73(b) (1 page)

are being deposited with the United States Postal Service with sufficient postage under 37 CFR 1.8(a) on the date indicated above in an envelope addressed to

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

Suzanne Johnston
(Typed or printed name of person mailing paper or fee)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/797,488	03/01/2001	Richard Frankland	104632-991101	4851

7590 03/31/2005

GARY CARY WARE &FREIDENRICH
1755 EMBARCADERO
PALO ALTO, CA 94303-3340

EXAMINER	
CHEUNG, MARY DA ZHI WANG	
ART UNIT	**PAPER NUMBER**
3621	

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3621	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2001*.

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

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

Disposition of Claims

4)☒ Claim(s) *2-155* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-155* is/are rejected.

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

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

Application Papers

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

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

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

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

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. This action is in response to the preliminary amendment filed on March 1, 2001. Claims 2-155 are pending. Claim 1 is canceled, and claims 2-155 are newly added.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-155 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Taken as a whole the claims recite an undue multiplicity of claims by virtue of the unreasonable number of claims presented would tend to obfuscate, confuse, and becloud the claimed invention. Because the examiner believes that in his judgment that twenty-five (25) claims are sufficient to properly define applicants' invention, applicants are required to select certain claims, not to exceed twenty-five for examination on the merits, See M.P.E.P. 2173.05(n). To be complete **the non-selected claims must be cancelled** or the applicant(s) must present appropriate arguments as to why the above rejection is in error. Note most patents (80%) have less than twenty claims while patents in excess of 100 claims are less than 0.344% of all cases filed and thus rare (See Federal Register: October 5, 1998 (Volume 63, Number 192, Page 53507). Note also the new excess claim fees effective 12/8/04 as evidence of what is considered to be unreasonable.

It is further noted that it would appear that a multiplicity of inventions also appear to be involved and the applicants are requested to group their selection accordingly to read on a single invention. The applicant should group the claims according to what he believes to be distinct inventions which may be restricted in a subsequent action.

Applicant is afforded a written response due to the complexity of the case and to afford applicant sufficient time to make a judicious selection of the claims to prosecute.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Cheung whose telephone number is (703)-305-0084. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (703) 305-9768.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

The fax phone number for the organization where this application or proceedings is assigned are as follows:

(703) 872-9306 (Official Communications; including After Final Communications labeled "BOX AF")

(703) 746-5619 (Draft Communications)

Hand delivered responses should be brought to Crystal Plaza Two, Room 1B03.

Mary Cheung
Patent Examiner
Art Unit 3621
March 29, 2005

Index of Claims

Application No.	Applicant(s)
09/797,488	FRANKLAND ET AL.
Examiner	**Art Unit**
Mary Cheung	3621

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	+	Restricted	I	Interference	O	Objected

Claim		Date								
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Index of Claims (continued)

Application No.	Applicant(s)
09/797,488	FRANKLAND ET AL.
Examiner	**Art Unit**
Mary Cheung	3621

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	+	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original	3/29/05								
	151	√								
	152	√								
	153	√								
	154	√								
	155	√								
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Claim		Date								
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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

BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 4851

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/797,488	03/01/2001 RULE	705	3621	104632-991101

APPLICANTS

Richard Frankland, San Jose, CA; ✓

Chistopher M. Mitchell, El Granada, CA; ✓
Joseph D. Ferguson, Santa Clara, CA; Anthony T. Sziklai, Half Moon Bay, CA; ✓
Ashish K. Verma, Foster City, CA; ✓
Judith E. Popowski, Half Moon Bay, CA; ✓
Douglas H. Sturgeon, San Mateo, CA; ✓

** CONTINUING DATA **********

This application is a CON of 09/215,898 12/18/1998 PAT 6,341,287 verified mc

** FOREIGN APPLICATIONS ********** None mc

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 03/29/2001

Foreign Priority claimed ☐ yes ☑ no 35 USC 119 (a-d) conditions met ☐ yes ☑ no ☐ Met after Allowance Verified and Acknowledged Examiner's Signature ____ Initials	STATE OR COUNTRY CA	SHEETS DRAWING 13	TOTAL CLAIMS 154	INDEPENDENT CLAIMS 9

ADDRESS
GARY CARY WARE &FREIDENRICH
1755 EMBARCADERO
PALO ALTO , CA
94303-3340

TITLE
Integrated change management unit

FILING FEE RECEIVED 1866	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)

Search Notes	Application No.	Applicant(s)	
	09/797,488	FRANKLAND ET AL.	
	Examiner	Art Unit	
	Mary Cheung	3621	

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Consulted Primary Examiner Salvatore Cangialosi	3/29/2005	MC

BEST AVAILABLE COPY

09/297485

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2000

Application or Docket Number

~~104632-99H00~~

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	154	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	154 minus 20=	* 134
INDEPENDENT CLAIMS	9 minus 3 =	* 6
MULTIPLE DEPENDENT CLAIM PRESENT		☐

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

SMALL ENTITY TYPE ☐ RATE	FEE	OR	OTHER THAN SMALL ENTITY RATE	FEE
BASIC FEE	355.00	OR	BASIC FEE	710.00
X$ 9=	1206.00	OR	X$18=	
X40=	240.00	OR	X80=	
+135=		OR	+270=	
TOTAL	1801.00	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 154	Minus	** 154	= —
Independent	* 9	Minus	*** 9	= —
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY RATE	ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	ADDITIONAL FEE
X$ 9=	—	OR	X$18=	—
X40=	—	OR	X80=	—
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	—

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

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

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Patent and Trademark Office

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OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

#7
BJ
11-22-02

CHANGE OF ADDRESS/POWER OF ATTORNEY

FILE LOCATION 2FC1 SERIAL NUMBER 09797488 PATENT NUMBER

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 26379

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 26379

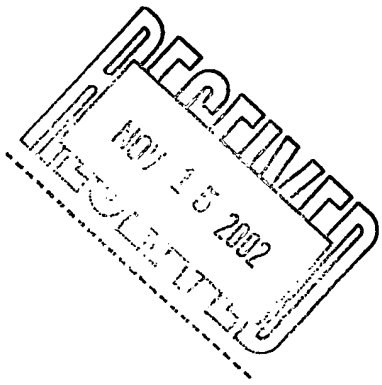
THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 26379

ON 07/01/02 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 26379 IS:

GARY CARY WARE & FREIDENRICH
1755 EMBARCADERO
PALO ALTO CA 94303-3340

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 26379 ARE:

18689 19305 24226 27607 27744 30103 35255 37355 37468 37486
39749 42590 43335 43465



RECEIVED
NOV 12 2002
GROUP 3600

PTO INSTRUCTIONS: PLEASE TAKE THE FOLLOWING ACTION WHEN THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER NUMBER: RECORD, ON THE NEXT AVAILABLE CONTENTS LINE OF THE FILE JACKET, 'ADDRESS CHANGE TO CUSTOMER NUMBER'. LINE THROUGH THE OLD ADDRESS ON THE FILE JACKET LABEL AND ENTER ONLY THE 'CUSTOMER NUMBER' AS THE NEW ADDRESS. FILE THIS LETTER IN THE FILE JACKET. WHEN ABOVE CHANGES ARE ONLY TO FEE ADDRESS AND/OR PRACTITIONERS OF RECORD, FILE LETTER IN THE FILE JACKET.
THIS FILE IS ASSIGNED TO GAU 3629.

2100 INTERNAL TRANSFER REQUEST **S.N.** 09/797,488

DATE: 11/27/01 | FROM: Susie Diaz (print name)

FORWARD TO:
A. Art Unit: 2171
B. Class: 707
C. Subclass: 1

REASON(S):
A. You had parent (check box)
B. See Title (check box)
C. See Abstract (check box)
D. See Claim(s):

FURTHER EXPLANATION IF NEEDED:
mere data storage (i.e., no processing of the data)

DATE: 8 May 02 | FROM: L Wassum (print name)

FORWARD TO:
A. Art Unit: 2161
B. Class 705
C. Subclass 1

REASON(S):
A. You had parent (check box)
B. See Title (check box)
C. See Abstract (check box)
D. See Claim(s): All

FURTHER EXPLANATION IF NEEDED: Business method – tracking hazardous waste, facility info, etc

---

DATE: | FROM: (print name)

FORWARD TO CLASSIFIER

REASON(S):
A. You had parent (check box)
B. See Title (check box)
C. See Abstract (check box)
D. See Claim(s):

FURTHER EXPLANATION IF NEEDED:

DISPOSITION BY 2100 CLASSIFICATION

DATE: 4/16/02 | CLASSIFIER: M. Fatahiya (print name)

FORWARD TO:
A. Art Unit: 2161
B. Class 705
C. Subclass 1

REASON(S):
A. You had parent (check box)
B. See Title (check box)
C. See Abstract (check box)
D. See Claim(s):

FURTHER EXPLANATION IF NEEDED:
The claimed disclosure is related to the automation of a business practice having an integrated change management system for a selected area of commercial or industrial activity by utilizing one or more databases having all relevant avaible information including knowledge of regulatory and non-regulatory information and changes etc.

3-28-02 mahmoud fatahiyan

#5

Attorney Docket No. 0104632-991101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Anthony T. Sziklai et al.		
Serial No.:	09/797,488	Group Art Unit:	2161
Filed:	March 1, 2001	Examiner:	N/A

Title: INTEGRATED CHANGE MANAGEMENT UNIT

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as FIRST CLASS MAIL in an envelope addressed to: BOX MISSING PARTS Commissioner for Patents, Washington, D.C. 20231, on July 25, 2001

Cathy Pittman

* * *

TRANSMITTAL OF FORMAL DRAWINGS

Commissioner for Patents
Washington, DC 20231

Dear Sir:

Transmitted herewith are thirteen (13) sheets of formal drawings for the above-identified application.

Please address all future communications regarding this application to:

Timothy Lohse
Patent Department
GRAY CARY WARE & FREIDENRICH LLP
1755 Embarcadero Road
Palo Alto, CA 94303

Please direct all telephone calls to Timothy W. Lohse at (650) 320-7426.

Dated July 25, 2001

GRAY CARY WARE & FREIDENRICH LLP

By [signature]
Timothy W. Lohse
Reg. No. 35,255
Attorney for Applicant

GRAY CARY WARE & FREIDENRICH LLP
ATTN: Patent Department
1755 Embarcadero Road
Palo Alto, CA 94303
(650) 320-7426

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/797,488	03/01/2001	Anthony T. Sziklai	104632.99110

CONFIRMATION NO. 4851

FORMALITIES LETTER

OC000000005916868

Gray Cary Ware & Freidenrich LLP
3340 Hillview Avenue
Palo Alto, CA 94304-1203

Date Mailed: 03/29/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is $ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below.

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

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

A copy of this notice <u>MUST</u> be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

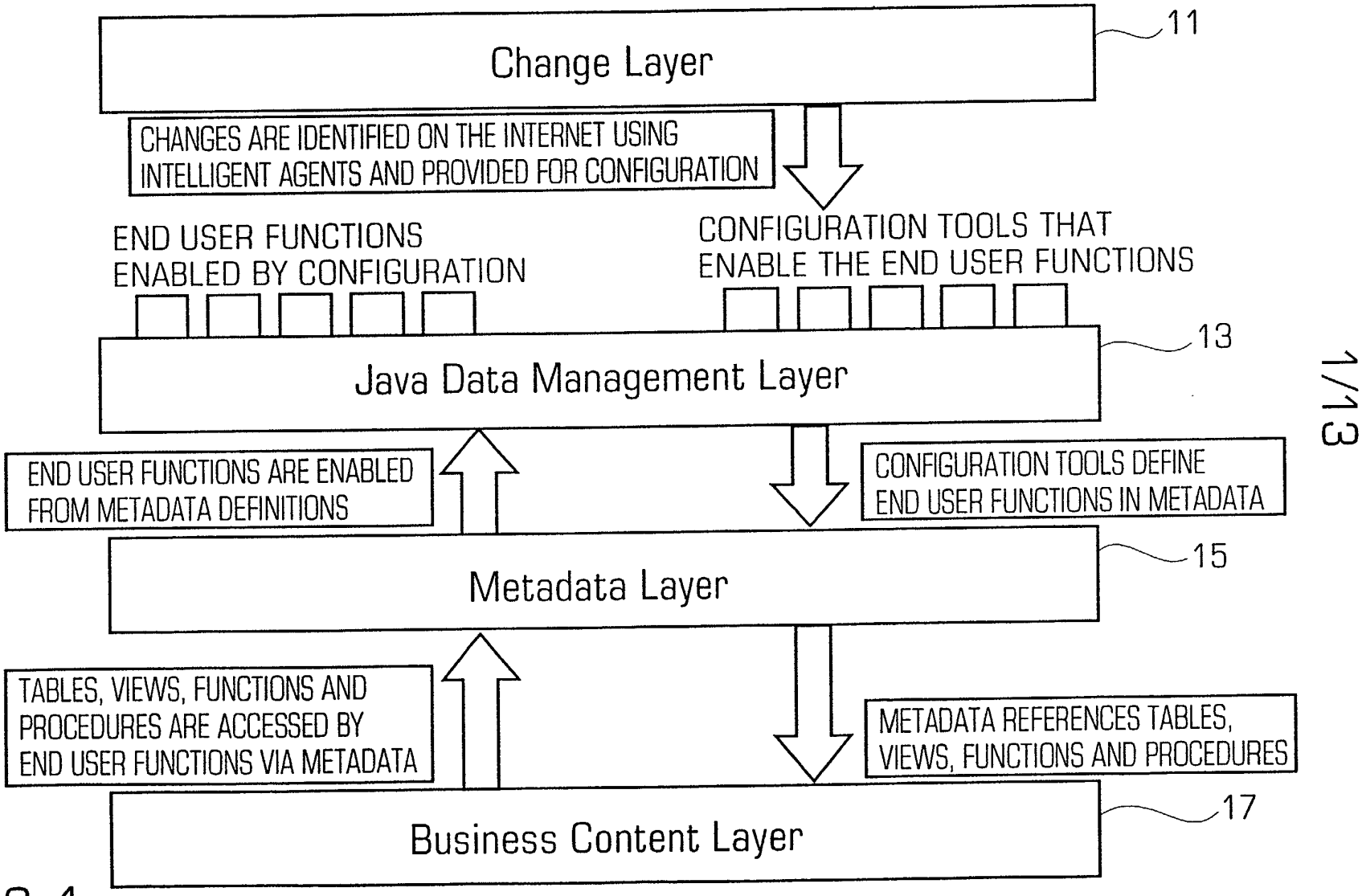

Change Layer
11
CHANGES ARE IDENTIFIED ON THE INTERNET USING INTELLIGENT AGENTS AND PROVIDED FOR CONFIGURATION
END USER FUNCTIONS ENABLED BY CONFIGURATION
CONFIGURATION TOOLS THAT ENABLE THE END USER FUNCTIONS
Java Data Management Layer
13
END USER FUNCTIONS ARE ENABLED FROM METADATA DEFINITIONS
CONFIGURATION TOOLS DEFINE END USER FUNCTIONS IN METADATA
Metadata Layer
15
TABLES, VIEWS, FUNCTIONS AND PROCEDURES ARE ACCESSED BY END USER FUNCTIONS VIA METADATA
METADATA REFERENCES TABLES, VIEWS, FUNCTIONS AND PROCEDURES
Business Content Layer
17

FIG. 1

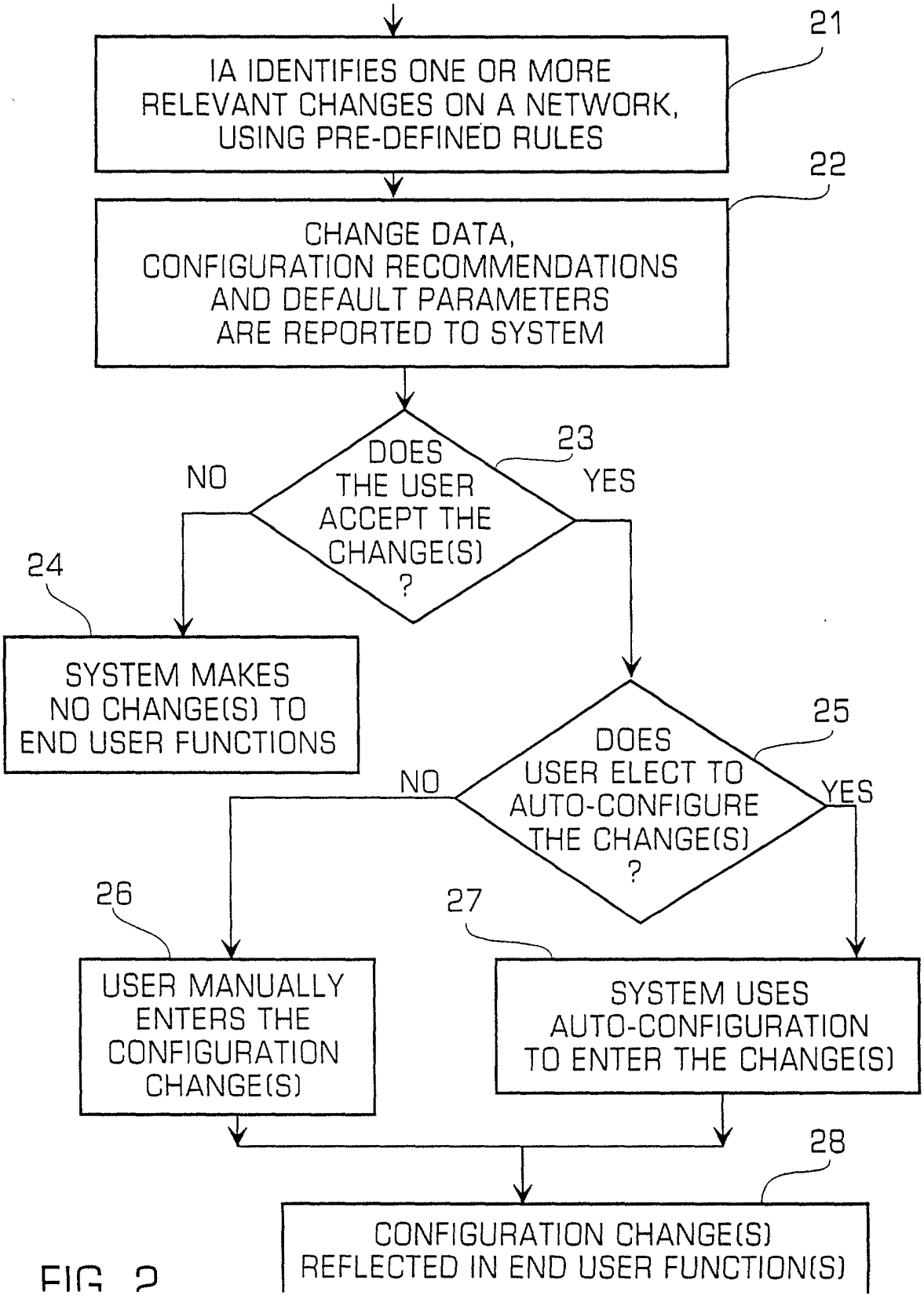

IA IDENTIFIES ONE OR MORE RELEVANT CHANGES ON A NETWORK, USING PRE-DEFINED RULES
21
CHANGE DATA, CONFIGURATION RECOMMENDATIONS AND DEFAULT PARAMETERS ARE REPORTED TO SYSTEM
22
DOES THE USER ACCEPT THE CHANGE(S) ?
23
NO
YES
SYSTEM MAKES NO CHANGE(S) TO END USER FUNCTIONS
24
DOES USER ELECT TO AUTO-CONFIGURE THE CHANGE(S) ?
25
NO
YES
USER MANUALLY ENTERS THE CONFIGURATION CHANGE(S)
26
SYSTEM USES AUTO-CONFIGURATION TO ENTER THE CHANGE(S)
27
CONFIGURATION CHANGE(S) REFLECTED IN END USER FUNCTION(S)
28

FIG. 2

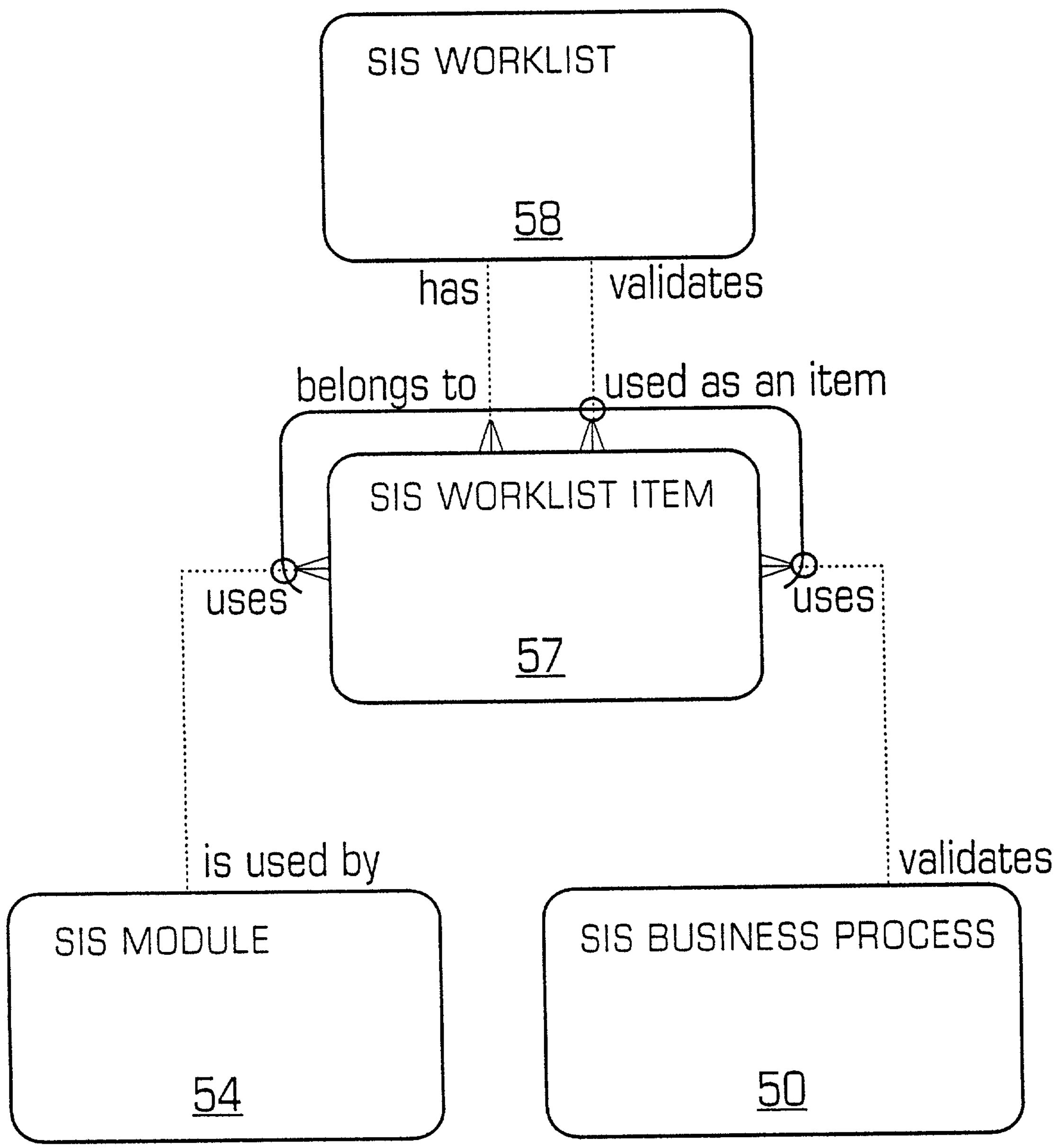
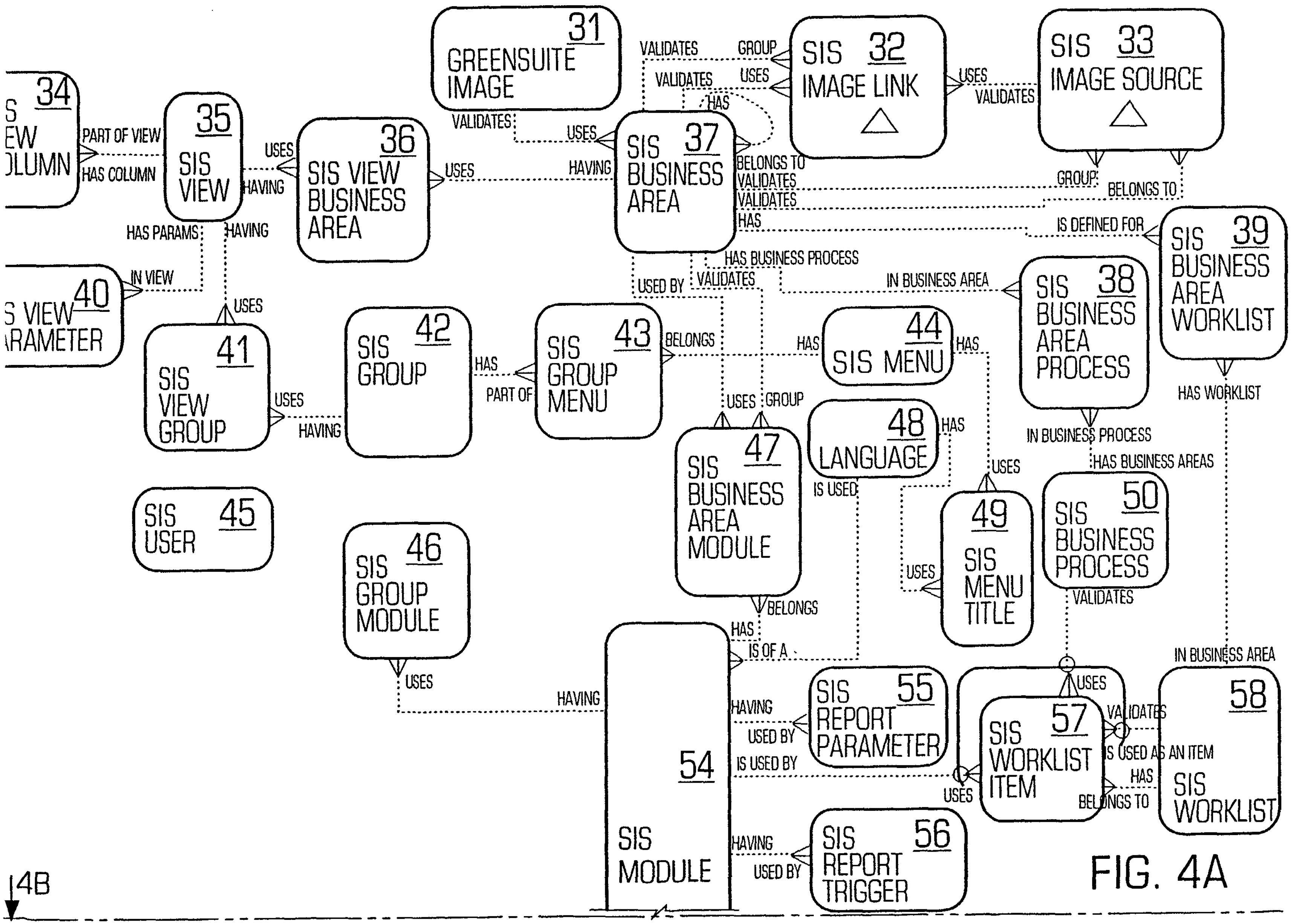


FIG. 3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S
EW
OLUMN
PART OF VIEW
HAS COLUMN
35
SIS
VIEW
HAS PARAMS
HAVING
USES
HAVING
36
SIS VIEW
BUSINESS
AREA
USES
40
S VIEW
ARAMETER
IN VIEW
USES
41
SIS
VIEW
GROUP
USES
HAVING
42
SIS
GROUP
HAS
PART OF
43
SIS
GROUP
MENU
BELONGS
45
SIS
USER
46
SIS
GROUP
MODULE
USES
31
GREENSUITE
IMAGE
VALIDATES
USES
HAVING
37
SIS
BUSINESS
AREA
VALIDATES
GROUP
VALIDATES
USES
HAS
32
SIS
IMAGE LINK
USES
VALIDATES
33
SIS
IMAGE SOURCE
GROUP
BELONGS TO
BELONGS TO
VALIDATES
VALIDATES
HAS
IS DEFINED FOR
39
SIS
BUSINESS
AREA
WORKLIST
HAS WORKLIST
HAS BUSINESS PROCESS
USED BY
VALIDATES
IN BUSINESS AREA
38
SIS
BUSINESS
AREA
PROCESS
IN BUSINESS PROCESS
HAS BUSINESS AREAS
HAS
44
SIS MENU
HAS
USES
GROUP
47
SIS
BUSINESS
AREA
MODULE
BELONGS
48
LANGUAGE
HAS
IS USED
USES
49
SIS
MENU
TITLE
USES
50
SIS
BUSINESS
PROCESS
VALIDATES
HAS
IS OF A
HAVING
54
SIS
MODULE
HAVING
USED BY
IS USED BY
55
SIS
REPORT
PARAMETER
HAVING
USED BY
56
SIS
REPORT
TRIGGER
USES
57
SIS
WORKLIST
ITEM
USES
VALIDATES
IS USED AS AN ITEM
HAS
BELONGS TO
IN BUSINESS AREA
58
SIS
WORKLIST
4B

FIG. 4A

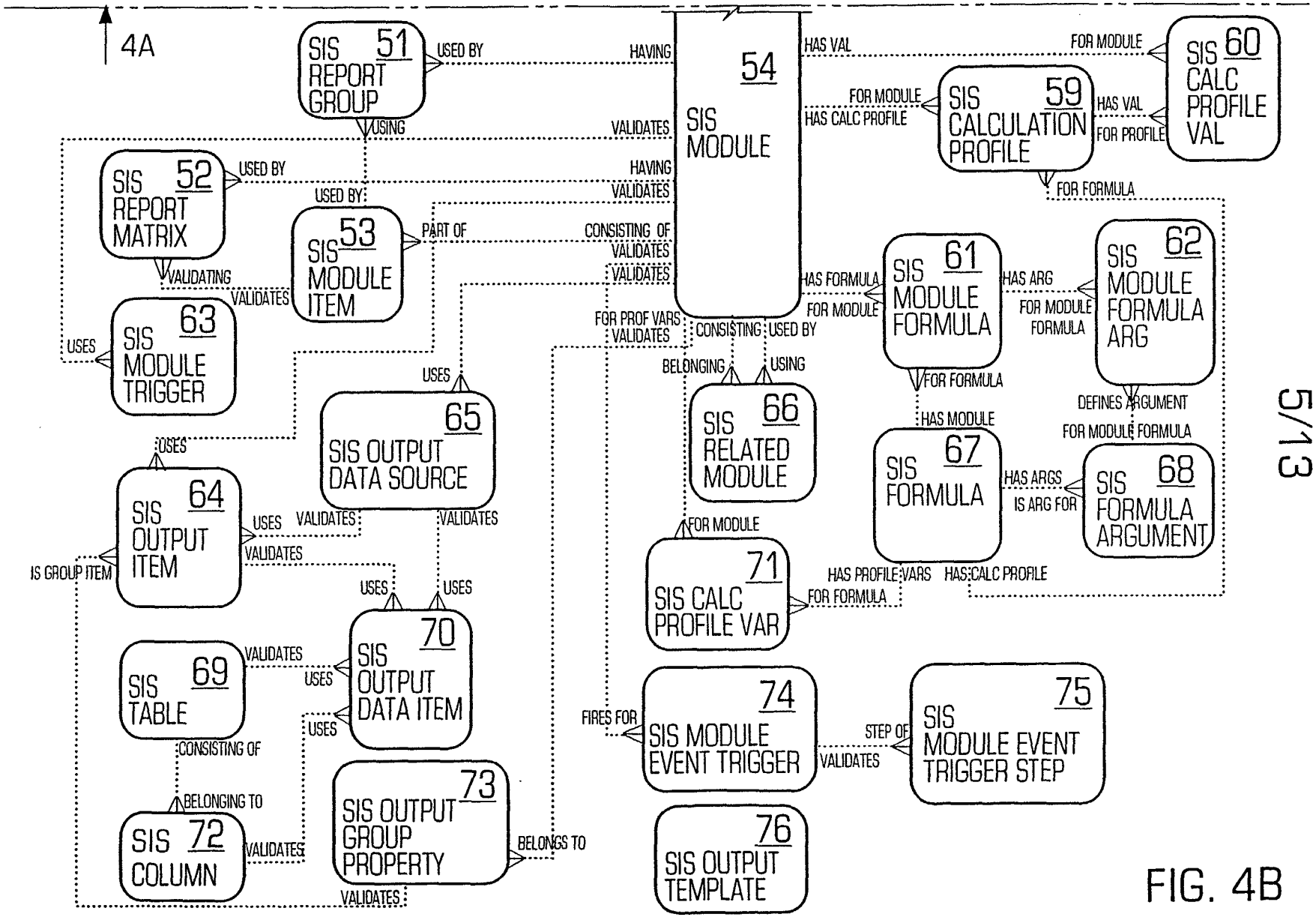

4A
SIS 51 REPORT GROUP
USED BY
USING
SIS 52 REPORT MATRIX
USED BY
VALIDATING
SIS 53 MODULE ITEM
VALIDATES
PART OF
USED BY
SIS 63 MODULE TRIGGER
USES
54 SIS MODULE
HAVING
VALIDATES
HAVING
VALIDATES
CONSISTING OF
VALIDATES
VALIDATES
FOR PROF VARS
VALIDATES
CONSISTING
USED BY
BELONGING
USING
SIS 66 RELATED MODULE
FOR MODULE
HAS VAL
FOR MODULE
HAS CALC PROFILE
SIS 59 CALCULATION PROFILE
HAS VAL
FOR PROFILE
SIS 60 CALC PROFILE VAL
FOR FORMULA
HAS FORMULA
FOR MODULE
SIS 61 MODULE FORMULA
HAS ARG
FOR MODULE FORMULA
SIS 62 MODULE FORMULA ARG
FOR FORMULA
HAS MODULE
DEFINES ARGUMENT
FOR MODULE FORMULA
SIS 67 FORMULA
HAS ARGS
IS ARG FOR
SIS 68 FORMULA ARGUMENT
HAS PROFILE VARS
HAS CALC PROFILE
FOR FORMULA
71 SIS CALC PROFILE VAR
FOR MODULE
USES
SIS 65 OUTPUT DATA SOURCE
USES
SIS 64 OUTPUT ITEM
USES
VALIDATES
VALIDATES
VALIDATES
IS GROUP ITEM
USES
USES
SIS 70 OUTPUT DATA ITEM
VALIDATES
USES
USES
SIS 69 TABLE
CONSISTING OF
BELONGING TO
SIS 72 COLUMN
VALIDATES
SIS 73 OUTPUT GROUP PROPERTY
BELONGS TO
VALIDATES
FIRES FOR
74 SIS MODULE EVENT TRIGGER
VALIDATES
STEP OF
75 SIS MODULE EVENT TRIGGER STEP
76 SIS OUTPUT TEMPLATE

FIG. 4B

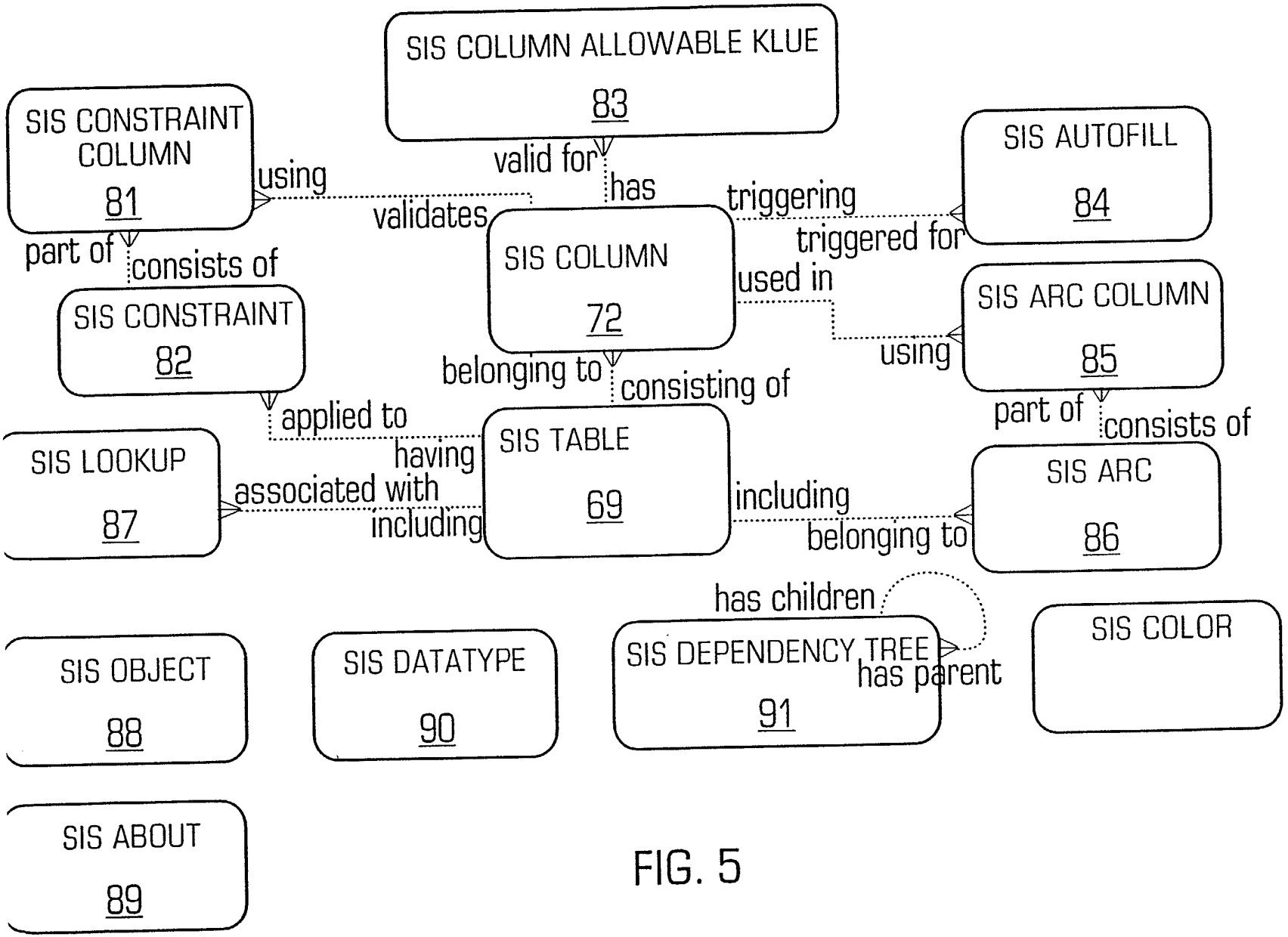

SIS COLUMN ALLOWABLE KLUE
83
SIS CONSTRAINT COLUMN
81
using
validates
valid for
has
SIS AUTOFILL
84
triggering
triggered for
part of
consists of
SIS COLUMN
72
used in
SIS ARC COLUMN
85
SIS CONSTRAINT
82
belonging to
consisting of
using
applied to
having
SIS TABLE
69
part of
consists of
SIS LOOKUP
87
associated with
including
including
belonging to
SIS ARC
86
has children
has parent
SIS DEPENDENCY TREE
91
SIS COLOR
SIS OBJECT
88
SIS DATATYPE
90
SIS ABOUT
89

FIG. 5

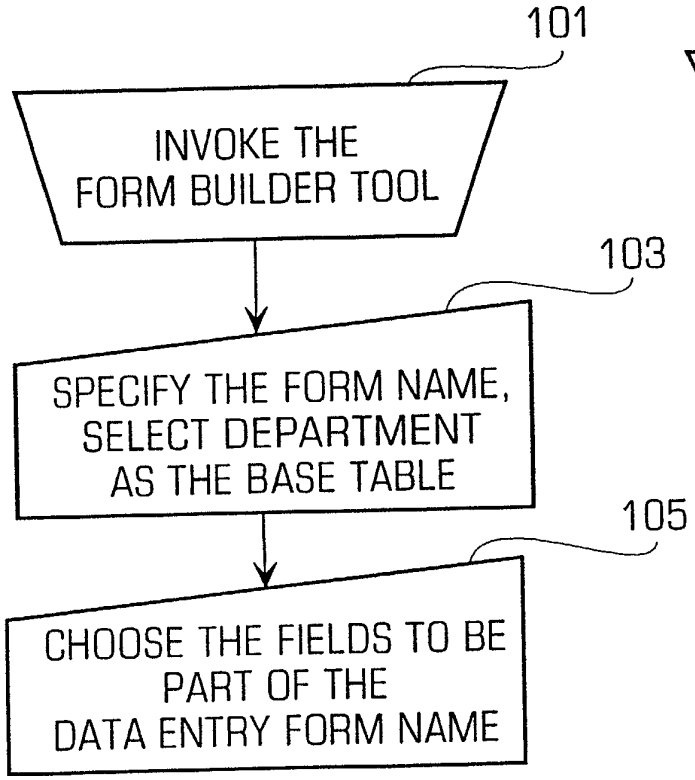


FIGURE 6

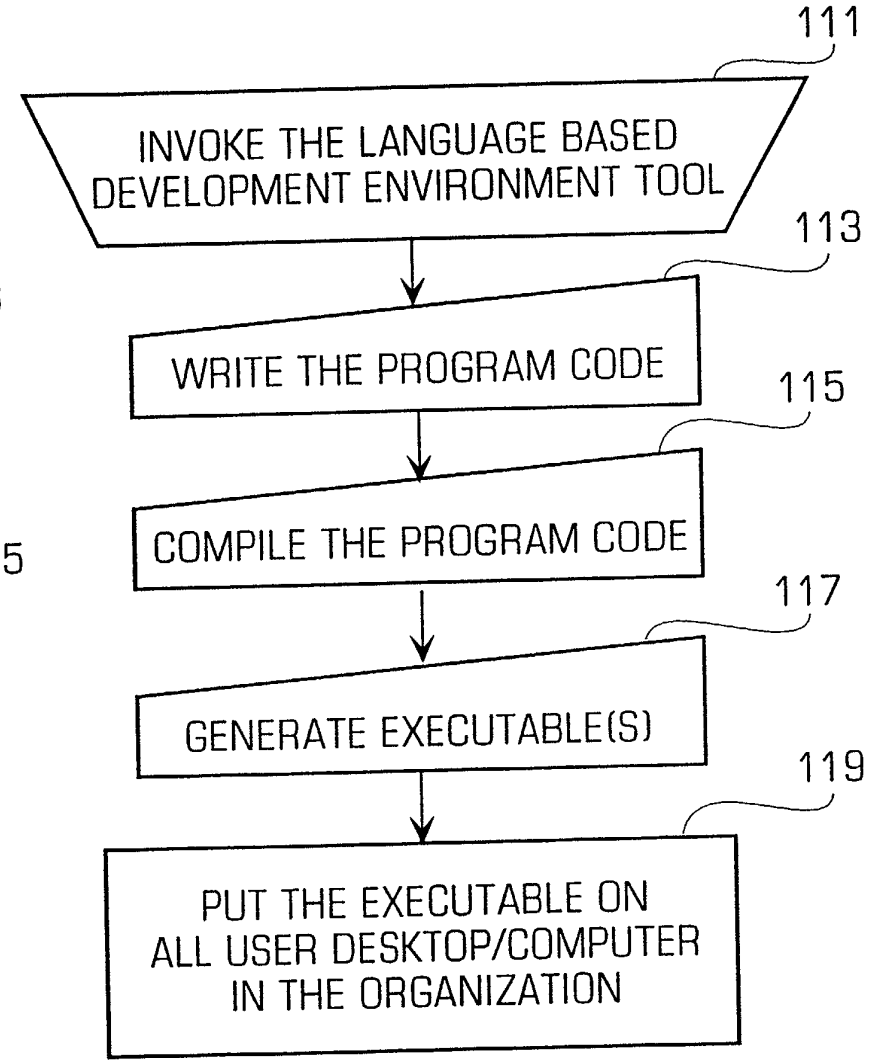


FIGURE 7

Change Agent Management Unit Main Menu

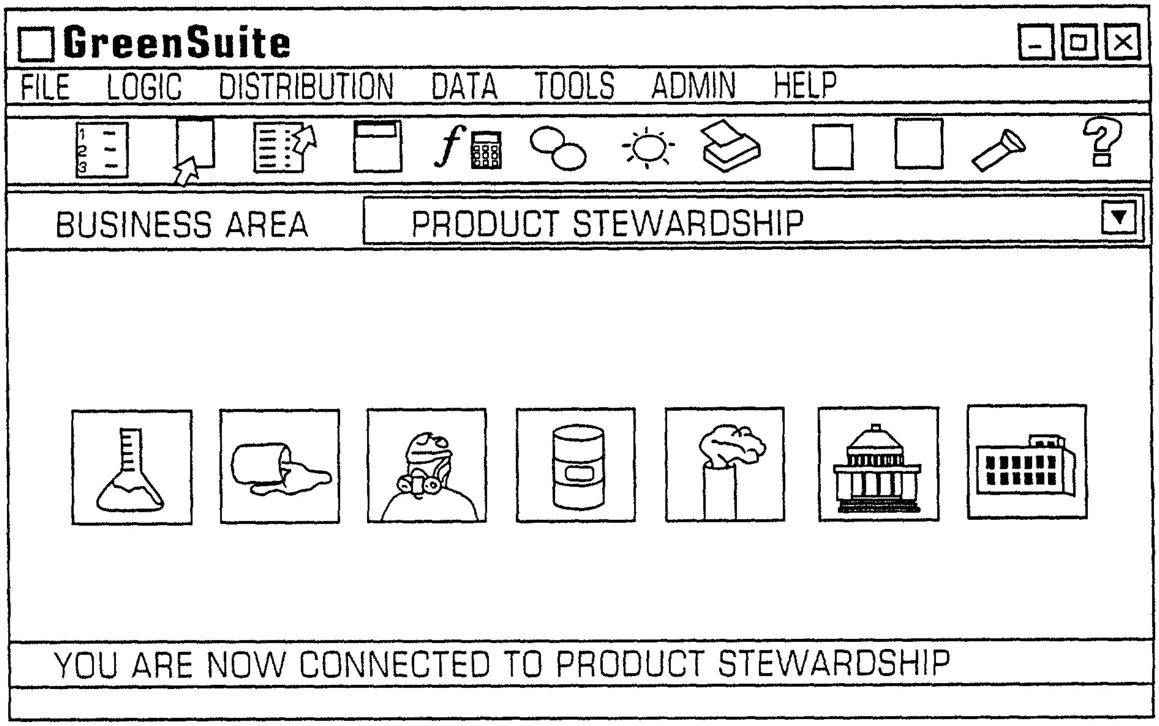


FIG. 8

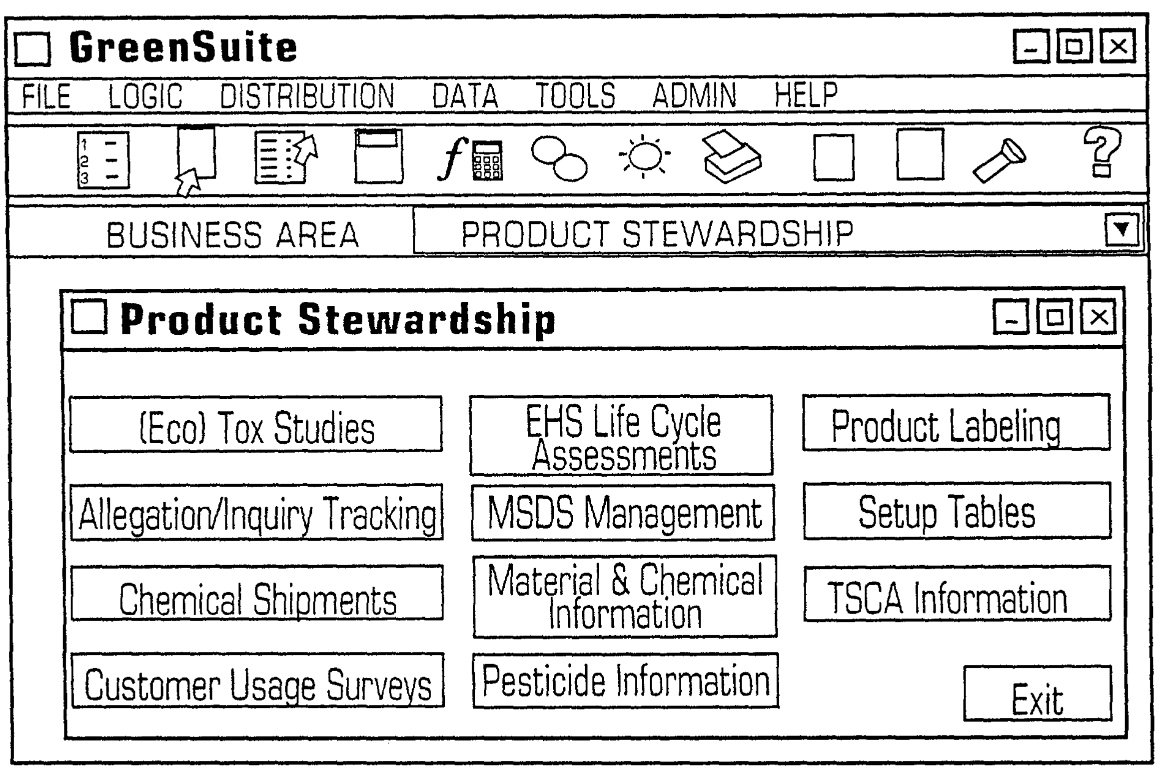


FIG. 9

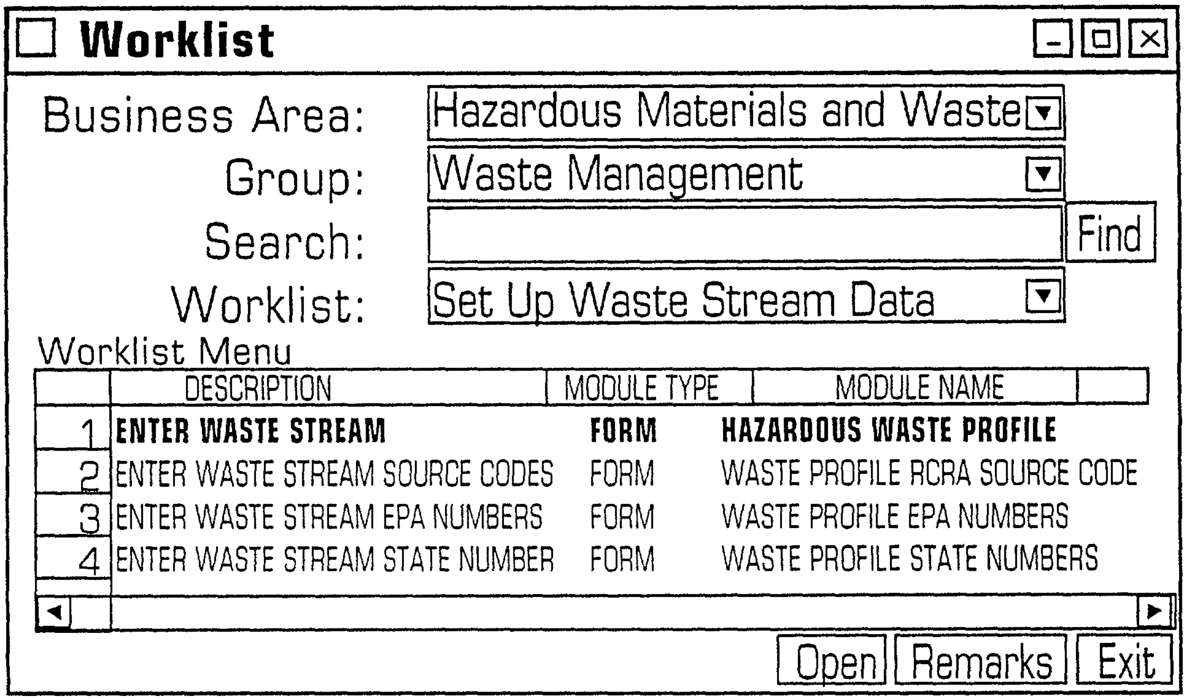

Worklist
Business Area:
Hazardous Materials and Waste
Group:
Waste Management
Search:
Find
Worklist:
Set Up Waste Stream Data
Worklist Menu
DESCRIPTION
MODULE TYPE
MODULE NAME
1 ENTER WASTE STREAM
FORM
HAZARDOUS WASTE PROFILE
2 ENTER WASTE STREAM SOURCE CODES
FORM
WASTE PROFILE RCRA SOURCE CODE
3 ENTER WASTE STREAM EPA NUMBERS
FORM
WASTE PROFILE EPA NUMBERS
4 ENTER WASTE STREAM STATE NUMBER
FORM
WASTE PROFILE STATE NUMBERS
Open
Remarks
Exit

FIG. 10

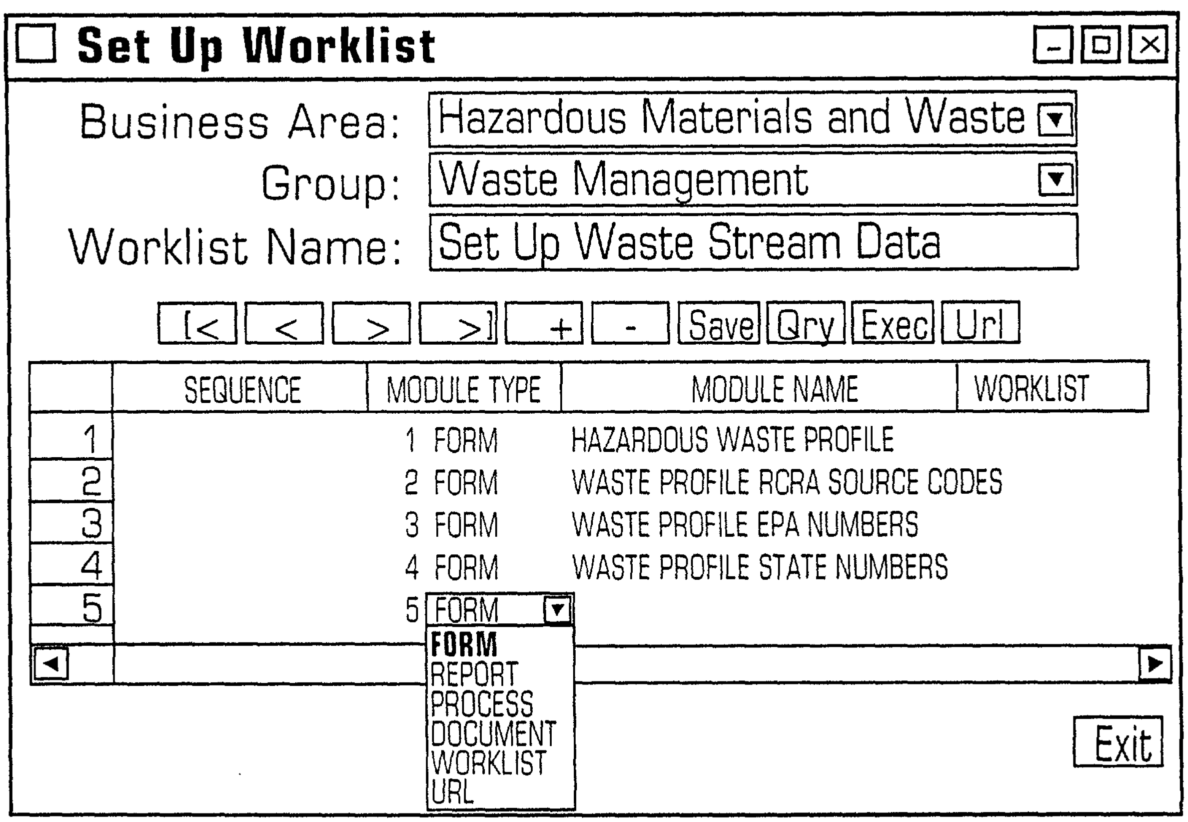

Set Up Worklist
Business Area:
Hazardous Materials and Waste
Group:
Waste Management
Worklist Name:
Set Up Waste Stream Data
Save
Qry
Exec
Url
SEQUENCE
MODULE TYPE
MODULE NAME
WORKLIST
1 FORM
HAZARDOUS WASTE PROFILE
2 FORM
WASTE PROFILE RCRA SOURCE CODES
3 FORM
WASTE PROFILE EPA NUMBERS
4 FORM
WASTE PROFILE STATE NUMBERS
5 FORM
FORM
REPORT
PROCESS
DOCUMENT
WORKLIST
URL
Exit

FIG. 11

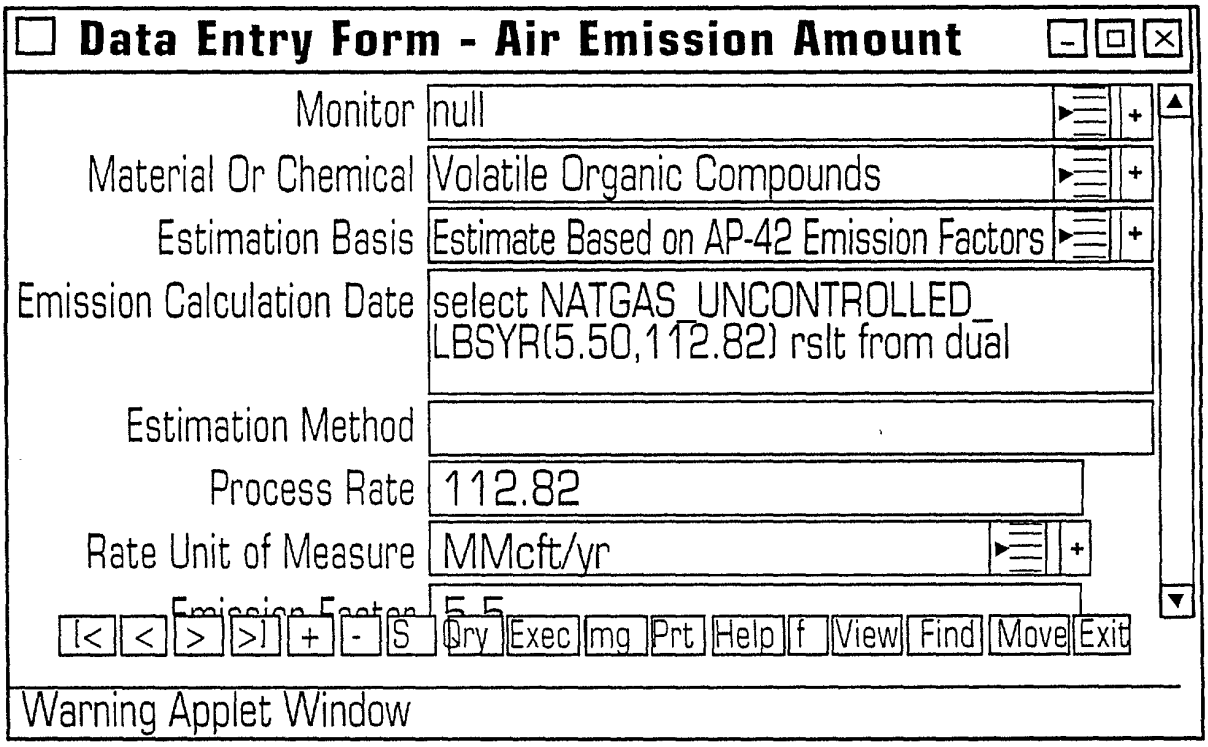
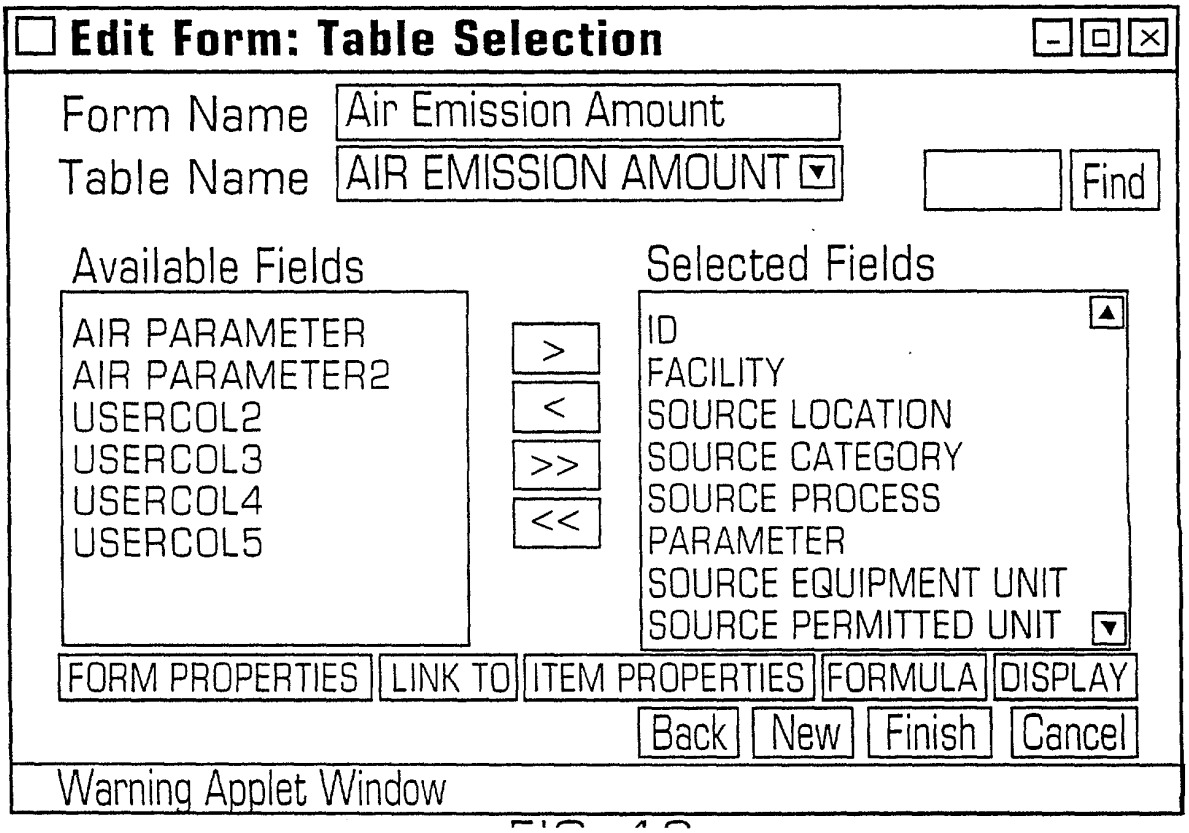

Data Entry Form - Air Emission Amount
Monitor
null
Material Or Chemical
Volatile Organic Compounds
Estimation Basis
Estimate Based on AP-42 Emission Factors
Emission Calculation Date
select NATGAS_UNCONTROLLED_
LBSYR(5.50,112.82) rslt from dual
Estimation Method
Process Rate
112.82
Rate Unit of Measure
MMcft/yr
Emission Factor
5.5
[< < > >] + - S Qry Exec mg Prt Help f View Find Move Exit
Warning Applet Window

FIG. 12


Edit Form: Table Selection
Form Name
Air Emission Amount
Table Name
AIR EMISSION AMOUNT
Find
Available Fields
AIR PARAMETER
AIR PARAMETER2
USERCOL2
USERCOL3
USERCOL4
USERCOL5
>
<
>>
<<
Selected Fields
ID
FACILITY
SOURCE LOCATION
SOURCE CATEGORY
SOURCE PROCESS
PARAMETER
SOURCE EQUIPMENT UNIT
SOURCE PERMITTED UNIT
FORM PROPERTIES
LINK TO
ITEM PROPERTIES
FORMULA
DISPLAY
Back
New
Finish
Cancel
Warning Applet Window

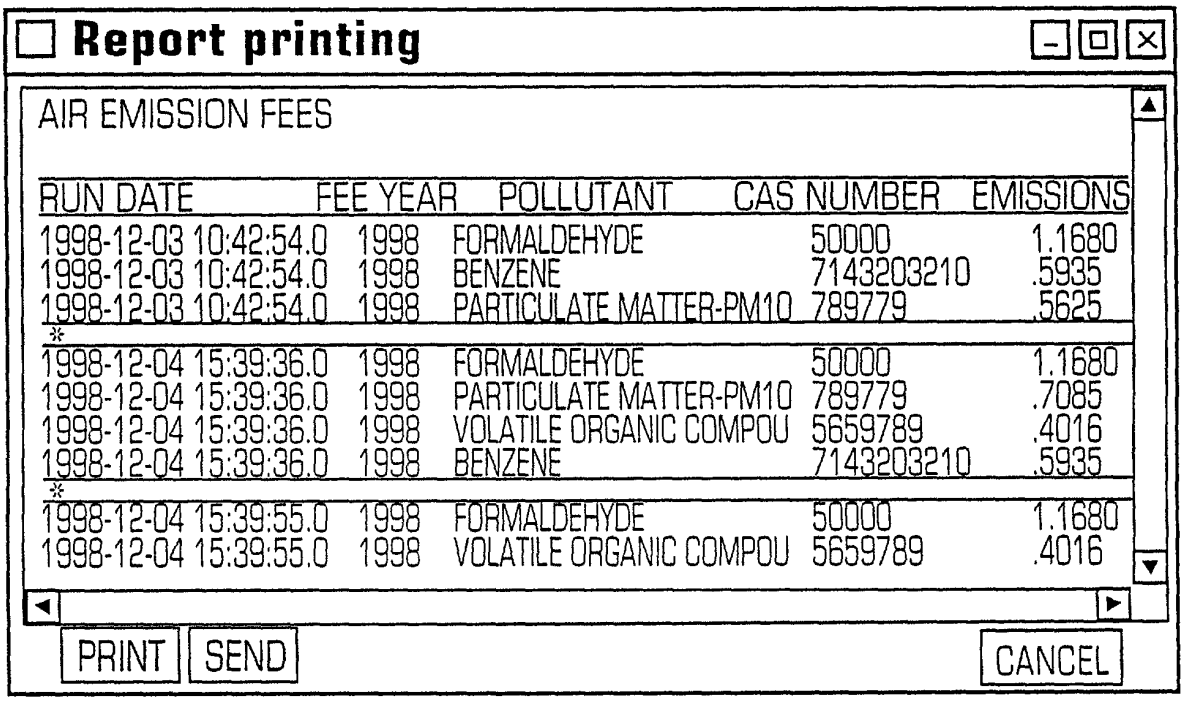
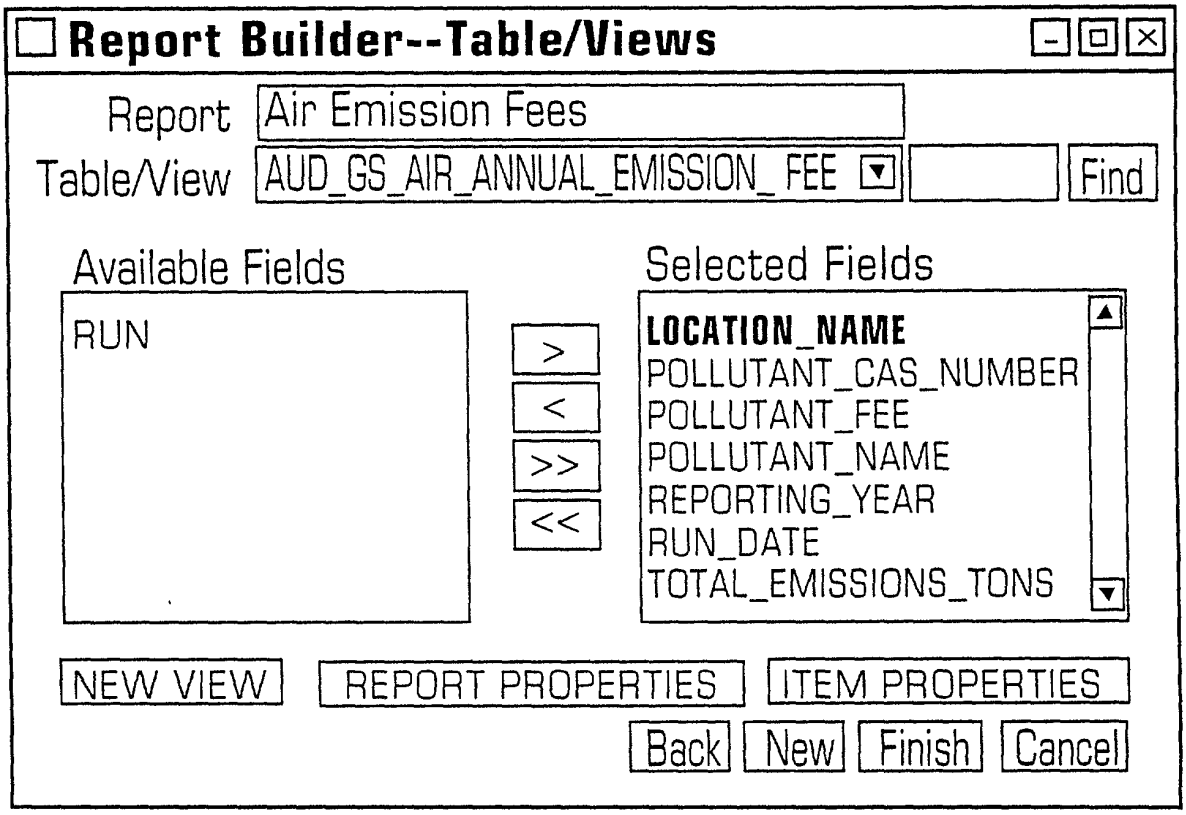

Report printing
AIR EMISSION FEES
RUN DATE FEE YEAR POLLUTANT CAS NUMBER EMISSIONS
1998-12-03 10:42:54.0 1998 FORMALDEHYDE 50000 1.1680
1998-12-03 10:42:54.0 1998 BENZENE 7143203210 .5935
1998-12-03 10:42:54.0 1998 PARTICULATE MATTER-PM10 789779 .5625
1998-12-04 15:39:36.0 1998 FORMALDEHYDE 50000 1.1680
1998-12-04 15:39:36.0 1998 PARTICULATE MATTER-PM10 789779 .7085
1998-12-04 15:39:36.0 1998 VOLATILE ORGANIC COMPOU 5659789 .4016
1998-12-04 15:39:36.0 1998 BENZENE 7143203210 .5935
1998-12-04 15:39:55.0 1998 FORMALDEHYDE 50000 1.1680
1998-12-04 15:39:55.0 1998 VOLATILE ORGANIC COMPOU 5659789 .4016
PRINT
SEND
CANCEL

FIG. 14


Report Builder--Table/Views
Report
Air Emission Fees
Table/View
AUD_GS_AIR_ANNUAL_EMISSION_ FEE
Find
Available Fields
RUN
>
<
>>
<<
Selected Fields
LOCATION_NAME
POLLUTANT_CAS_NUMBER
POLLUTANT_FEE
POLLUTANT_NAME
REPORTING_YEAR
RUN_DATE
TOTAL_EMISSIONS_TONS
NEW VIEW
REPORT PROPERTIES
ITEM PROPERTIES
Back
New
Finish
Cancel

Run Process Results

Process: GENERAL MATERIAL SPILLS ABOVE REPORTABLE QUANTITY

Results

	INCIDENT_DATE	LOCATION_NAME	CAS_NUMBER	MATERIAL_NAME	QUANTITY_ RELEASED
1	**03/23/1998**	**ABC Company**	**7782414**	**FLUORINE**	
2	09/08/1998	ABC Company	7782414	FLUORINE	
3	03/23/1998	ABC Company	359068	FLUOROACETYL C	
4	09/08/1998	ABC Company	359068	FLUOROACETYL C	
5	03/23/1998	ABC Company	50000	FORMALDEHYDE	
6	09/08/1998	ABC Company	50000	FORMALDEHYDE	
7	03/23/1998	ABC Company	2540821	FORMOTHION	
8	09/08/1998	ABC Company	2540821	FORMOTHION	
9	03/23/1998	ABC Company	3878191	FUBERIDAZOLE	
10	09/08/1998	ABC Company	3878191	FUBERIDAZOLE	
11	03/23/1998	ABC Company	22224926	FENAMIPHOS	

PRINT EXIT

FIG. 16

Advanced Query Builder

Select Statement: GS_MATSPILL_EXCEEDS_RQ | GS% | Find | Refresh

Data Sources | **Columns** | Clauses | Group By | Set Operations | Description | Utilities | View Tree

Available Columns

MD.MATERIAL_ID
RQ.MATERIAL_ID
RQ.REPORTABLE_QUANTITY
RQ.UOM_ID
UOMC.FROM_UNITS
UOMC.FROM_UOM_ID
UOMC.MULTIPLY_BY
UOMC.TO_UNITS
UOMC.TO_UOM_ID,

> <

Used Columns

MD.INCIDENT_DATE
MD.LOCATION_NAME
MD.CAS_NUMBER
MD.MATERIAL_NAME
MD.QUANTITY_LBS
RQ.REPORTABLE_QUANTITY
RQ.REGLIST_NAME

Move Up | Move Down

◉ All ○ Distinct

Alias | Update

RQ_LBS

Formula

RQ.REPORTABLE_QUANTITY

Add | Delete | Update

OK | Cancel | Exit

RQ.REPORTABLE_QUANTITY-UOMC_MULTIPLY (BY 1)

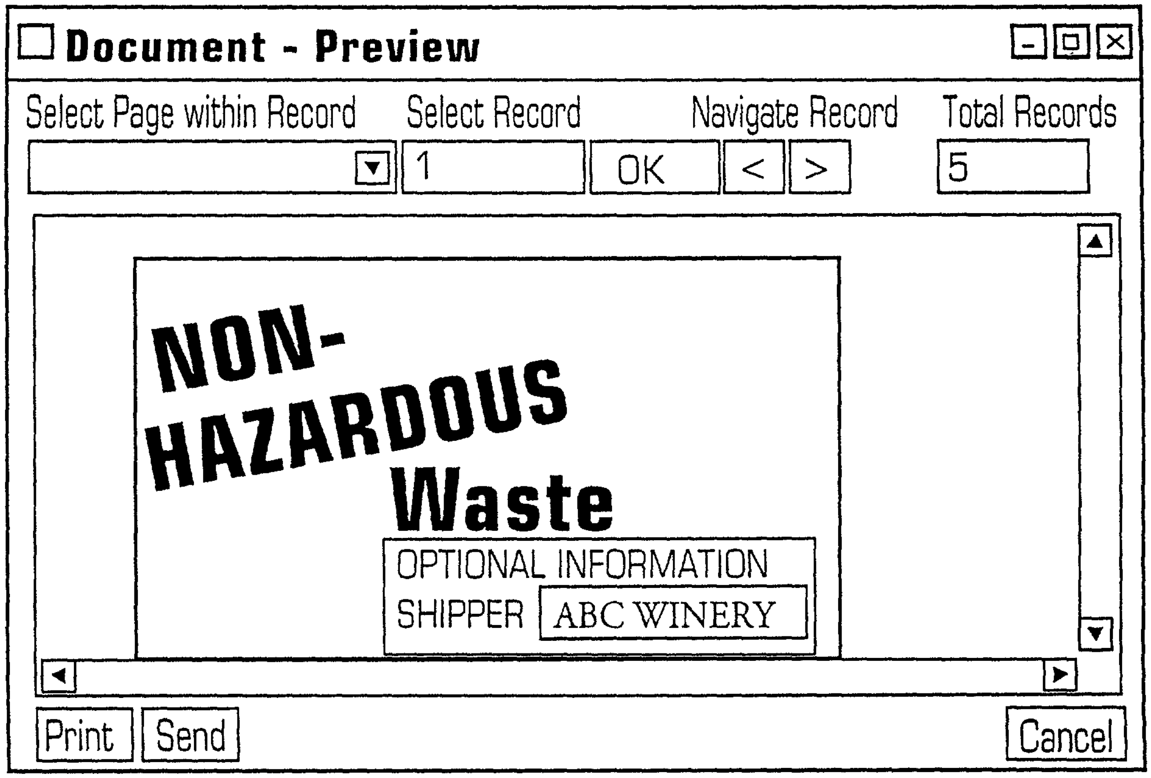
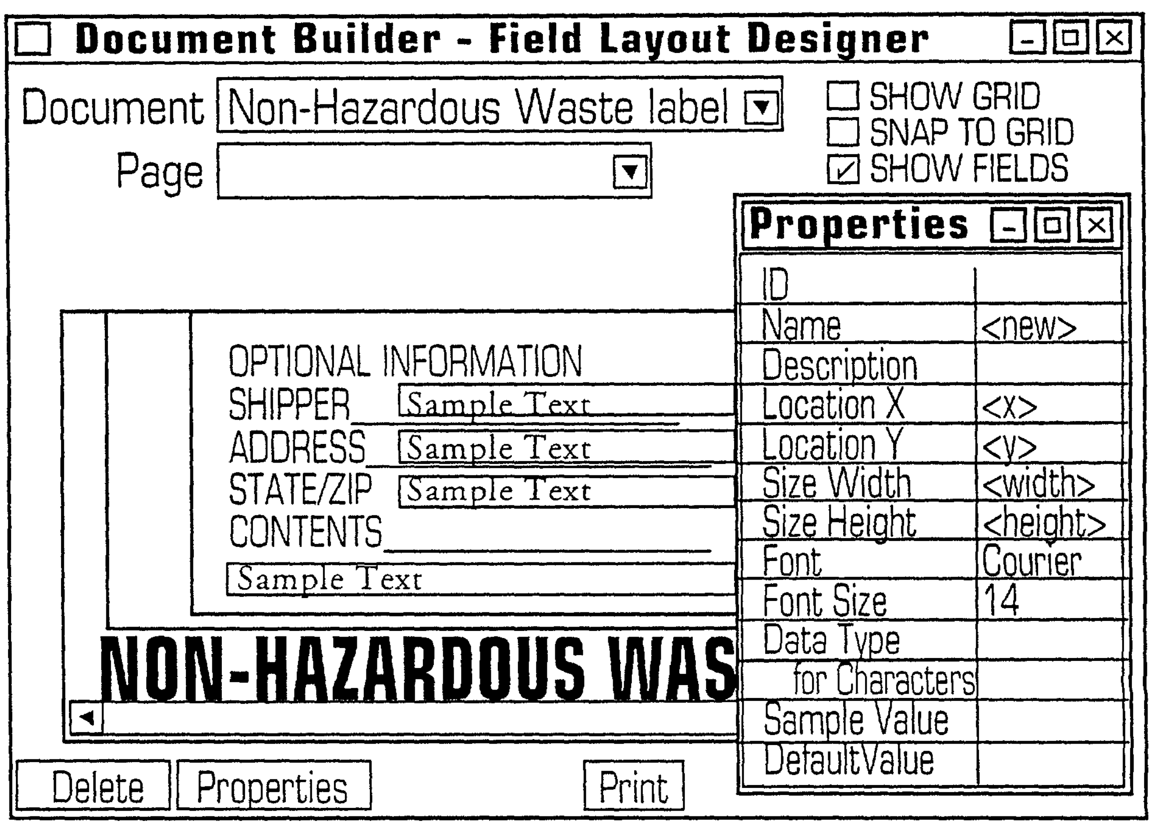

Document - Preview
Select Page within Record
Select Record
Navigate Record
Total Records
1
OK
<
>
5
NON-HAZARDOUS
Waste
OPTIONAL INFORMATION
SHIPPER
ABC WINERY
Print
Send
Cancel

FIG. 18


Document Builder - Field Layout Designer
Document
Non-Hazardous Waste label
Page
SHOW GRID
SNAP TO GRID
SHOW FIELDS
Properties
ID
Name
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Description
Location X
<x>
Location Y
<y>
Size Width
<width>
Size Height
<height>
Font
Courier
Font Size
14
Data Type
for Characters
Sample Value
DefaultValue
OPTIONAL INFORMATION
SHIPPER
Sample Text
ADDRESS
Sample Text
STATE/ZIP
Sample Text
CONTENTS
Sample Text
NON-HAZARDOUS WAS
Delete
Properties
Print

Attorney Docket No.: 104632-991101

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as FIRST CLASS MAIL in an envelope addressed to: BOX MISSING PARTS, Assistant Commissioner for Patents, Washington, D.C. 20231, on July 25, 2001.

Cathy Pittman

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Anthony T. Sziklai

Serial No: 09/797,488 Group Art Unit: 2161

Filed: March 1, 2001 Examiner: N/A.

Title: INTEGRATED CHANGE MANAGEMENT UNIT

* *

RESPONSE TO NOTICE TO FILE MISSING PARTS

Box MISSING PARTS
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the "Notice to File Missing Parts" mailed by the United States Patent and Trademark Office on March 29, 2001. The following documents are enclosed to complete the filing of the above-referenced patent application:

1. Copy of Notice to File Missing Parts (1 pg.) from Prior Application
2. Executed Declaration and Power of Attorney (3 pgs)
3. Petition for Two (2) Month Extension of Time (1 pg.)
6. Fee Transmittal FY 2001
7. Transmittal of Formal Drawings (__ pgs.);
8. Thirteen (13) sheets of formal drawings;
9. Check # 484304 in the amount of $260.00 (extension fee and missing parts surcharge).
10. Return Postcard

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 07-1896.

Respectfully submitted,

GRAY CARY WARE & FREIDENRICH LLP

Dated: July 25, 2001

By _____
Timothy W. Lohse
Reg. No. 35,255
Attorney for Applicant

GRAY CARY WARE & FREIDENRICH
1755 Embarcadero Road
Palo Alto, CA 94303
Telephone: (650) 320-7426

PTO/SB/17 (09-00)
Approved for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT ($) 260.00

Complete if Known	
Application Number	09/797,488
Filing Date	March 1, 2001
First Named Inventor	Anthony T. Sziklai
Examiner Name	Unknown
Group Art Unit	2161
Attorney Docket No.	104632-991101

METHOD OF PAYMENT

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: 07-1896

Deposit Account Name: Gray Cary Ware & Freidenrich, LLP

☒ Charge Any additional Fee Required Under 37 CFR 1.16 and 1.17

☒ Applicant claims small entity status. See 37 CFR 1.27

2. ☒ **Payment Enclosed:**

☒ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	
106	320	206	160	Design filing fee	
107	490	207	245	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES

		Extra Claims		Fee from below		Fee Paid
Total Claims	-20** =		X		=	
Independent Claims	-3** =		X		=	
Multiple Dependent			X		=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	80	202	40	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	80	209	40	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	65.00
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	390	216	195	Extension for reply within second month	195.00
117	890	217	445	Extension for reply within third month	
118	1,390	218	695	Extension for reply within fourth month	
128	1,890	228	945	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	11	0240	55	Petition to revive – unavoidable	
141	1,240	241	620	Petition to revive – unavoidable	
142	1,240	242	620	Utility issue fee (or reissue)	
143	440	243	220	Design issue fee	
144	600	244	300	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stms	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	710	249	355	For each additional invention to be examined (37 CFR § 1.129(b))	
179	710	279	355	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 260.00

SUBMITTED BY				Complete *(if applicable)*	
Name (Print/Type)	Timothy W. Lehse	*Registration No. (Attorney/Agent)*	35,255	*Telephone*	650-320-7426
Signature				*Date*	July 25, 2001

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.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SENT FEES OR COMPLETED FORM TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

#3

DECLARATION FOR PATENT APPLICATION

As an inventor named below, I hereby declare that:

(1) my residence, post office address and citizenship are as stated below next to my name;

(2) I believe I am an original, first and joint inventor of the subject matter that is disclosed and claimed, for which a U.S. patent is sought, on the invention entitled

"INTEGRATED CHANGE MANAGEMENT UNIT",

the patent specification and claims of which are attached hereto;

(3) I hereby state that I have reviewed and understand the contents of the above-identified patent application, including the claims;

(4) I hereby acknowledge a duty to disclose information that is material to examination of this application in accordance with 37 C.F.R. 1.56;

(5) I hereby appoint the following patent attorney to prosecute this application and to transact all business concerning this application in the United States Patent and Trademark Office:

John F. Schipper, Reg. No. 26994
2211 Park Boulevard
Palo Alto, California 94306
Telephone: 650-321-7449 Facsimile: 650-321-7606; and

(6) I hereby declare that all statements made herein of my own knowledge are true, and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent that issues on this application.

Full name of first inventor RICHARD FRANKLAND
Inventor's signature Richard Frankland Date 12/15/98
Inventor's residence 5022 Miramar Avenue Citizenship United Kingdom
Post Office address San Jose, California 95129

Full name of second inventor CHISTOPHER M. MITCHELL
Inventor's signature Chris Mitchell Date 12-15-98
Inventor's residence P.O. Box 1332 Citizenship United States of America
Post Office address El Granada, California 94018

Full name of third inventor JOSEPH D. FERGUSON
Inventor's signature Joseph D Ferguson Date 12-17-98
Inventor's residence 724 Bucher Avenue Citizenship United States of America
Post Office address Santa Clara, California 95051

x Additional inventors are named on separate Declaration sheets 1 and 3 attached hereto.

DECLARATION FOR PATENT APPLICATION

As an inventor named below, I hereby declare that:

(1) my residence, post office address and citizenship are as stated below next to my name;

(2) I believe I am an original, first and joint inventor of the subject matter that is disclosed and claimed, for which a U.S. patent is sought, on the invention entitled

"INTEGRATED CHANGE MANAGEMENT UNIT",

the patent specification and claims of which are attached hereto;

(3) I hereby state that I have reviewed and understand the contents of the above-identified patent application, including the claims;

(4) I hereby acknowledge a duty to disclose information that is material to examination of this application in accordance with 37 C.F.R. 1.56;

(5) I hereby appoint the following patent attorney to prosecute this application and to transact all business concerning this application in the United States Patent and Trademark Office:

John F. Schipper, Reg. No. 26994
2211 Park Boulevard
Palo Alto, California 94306
Telephone: 650-321-7449 Facsimile: 650-321-7606; and

(6) I hereby declare that all statements made herein of my own knowledge are true, and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent that issues on this application.

Full name of first inventor ANTHONY T. SZIKLAI
Inventor's signature _____ Date 12/15/98
Inventor's residence 516 San Benito Street Citizenship United States of America
Post Office address Half Moon Bay, California 94019

Full name of second inventor ASHISH K. VERMA
Inventor's signature _____ Date 12/15/98
Inventor's residence 1999 Beach Park Blvd. No. 45 Citizenship India
Post Office address Foster City, California 94404

Full name of third inventor JUDITH E. POPOWSKI
Inventor's signature Judith E Popowski Date 12/15/98
Inventor's residence 301 Alameda Avenue Citizenship United States of America
Post Office address Half Moon Bay, California 94019

x Additional inventors are named on separate Declaration sheets 2 and 3 attached hereto.

DECLARATION FOR PATENT APPLICATION

As an inventor named below, I hereby declare that:

(1) my residence, post office address and citizenship are as stated below next to my name;

(2) I believe I am an original, first and joint inventor of the subject matter that is disclosed and claimed, for which a U.S. patent is sought, on the invention entitled

"INTEGRATED CHANGE MANAGEMENT UNIT",

the patent specification and claims of which are attached hereto;

(3) I hereby state that I have reviewed and understand the contents of the above-identified patent application, including the claims;

(4) I hereby acknowledge a duty to disclose information that is material to examination of this application in accordance with 37 C.F.R. 1.56;

(5) I hereby appoint the following patent attorney to prosecute this application and to transact all business concerning this application in the United States Patent and Trademark Office:

John F. Schipper, Reg. No. 26994
2211 Park Boulevard
Palo Alto, California 94306
Telephone: 650-321-7449 Facsimile: 650-321-7606; and

(6) I hereby declare that all statements made herein of my own knowledge are true, and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent that issues on this application.

Full name of first inventor DOUGLAS H. STURGEON
Inventor's signature _____ Date December 15, 1998
Inventor's residence 845 North Humboldt Street, No. 302 Citizenship United States of America
Post Office address San Mateo, California 94401

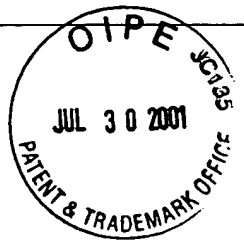
x Additional inventors are named on separate Declaration sheets 1 and 2 attached hereto.

#4

PTO/SB/22 (8-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. 1.136(a)

Docket Number (Optional)
104632-991101



In re Application of		
Anthony T. Sziklai		
Application Number	Filed	
09/797,488	March 1, 2001	
For: INTEGRATED CHANGE MANAGEMENT UNIT		
Group Art Unit	Examiner	
2161	N/A	

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and appropriate non-small-entity fee are as follows (check time period desired):

☐	One month (37 CFR 1.17(a)(1))	$
☒	Two months (37 CFR 1.17(a)(2))	$ 390.00
☐	Three months (37 CFR 1.17(a)(3))	$
☐	Four months (37 CFR 1.17(a)(4))	$
☐	Five months (37 CFR 1.17(a)(5))	$

☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore the fee amount shown above is reduced by one-half, and the resulting fee is: $ 195.00

☒ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Commissioner has already been authorized to charge fees in this application to a Deposit Account.

☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account Number 07-1896.
I have enclosed a duplicate copy of this sheet.

I am the
☐ assignee of record of the entire interest.
☐ applicant.
☐ attorney or agent of record.
☒ attorney or agent under 37 CFR 1.34(a).
Registration number if acting under 37 CFR 1.34(a) 35,255

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.

July 25, 2001
Date

Signature

01 FC:215 195.00 OP

Timothy W. Lohse
Typed or printed name

Burden Hour Statement: This form is estimated to take 0.1 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to completed this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORM TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

2700 INTERNAL TRANSFER REQUEST FOR S.N. 09/757,559

DATE: 06/05/01

FROM: LARRY D. DONAGHUE (print name)
PRIMARY EXAMINER

FORWARD TO:
A. Art Unit: 2165
B. Class: 705
C Subclass: 26

REASON(S):
A. You had Parent [ ] (check box)
B. See Title [ ] (check box)
C. See Abstract [ ] (check box)
D. See Claim(s): 1

FURTHER EXPLANATION IF NEEDED:

DATE: _____

FROM: _____ (print name)

FORWARD TO:
A. Art Unit: _____
B. Class: _____
C Subclass: _____

REASON(S):
A. You had Parent [ ] (check box)
B. See Title [ ] (check box)
C. See Abstract [ ] (check box)
D. See Claim(s): _____

FURTHER EXPLANATION IF NEEDED:

DATE: _____

FROM: _____ (print name)

FORWARD TO CLASSIFIER

REASON(S):
A. You had Parent [ ] (check box)
B. See Title [ ] (check box)
C. See Abstract [ ] (check box)
D. See Claim(s): _____

FURTHER EXPLANATION IF NEEDED:

DISPOSITION BY 2700 CLASSIFICATION

DATE: _____

CLASSIFIER: _____

FORWARD TO:
A. Art Unit: _____
B. Class: _____
C Subclass: _____

REASON(S):
A. You had Parent [ ] (check box)
B. See Title [ ] (check box)
C. See Abstract [ ] (check box)
D. See Claim(s): _____

FURTHER EXPLANATION IF NEEDED:

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/797,488	03/01/2001	Anthony T. Sziklai	104632.991100

CONFIRMATION NO. 4851

FORMALITIES LETTER

OC000000005916868

Gray Cary Ware & Freidenrich LLP
3340 Hillview Avenue
Palo Alto, CA 94304-1203

Date Mailed: 03/29/2001

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is $ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below.

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

- Substitute drawings in compliance with 37 CFR 1.84 because:
    - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

A copy of this notice MUST be returned with the reply.

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Initial Patent Examination Division (703) 308-1202
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PTO/SB/05 (08-00)
Approved for use through 10/31/2002. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL

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

Attorney Docket No.	104632-991100
First Inventor	Sziklai et al.
Title	INTEGRATED CHANGE MANAGEMENT UNIT
Express Mail Label No.	EL657235469US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

ADDRESS TO: Commissioner for Patents, Box Patent Application, Washington, DC 20231

1. [X] Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original, and a duplicate for fee processing)
2. [X] Applicant claims small entity status. See 37 CFR 1.27.
3. [X] Specification [Total Pages 62] (preferred arrangement set forth below)
   - Descriptive title of the invention
   - Cross Reference to Related Applications
   - Statement Regarding Fed sponsored R&D
   - Reference to sequence listing, a table or a computer program listing appendix
   - Background of the Invention
   - Brief Description of the Drawings(if filed)
   - Detailed description
   - Claim(s)
   - Abstract of the Disclosure
4. [X] Drawing(s) (35 U.S.C. 113) [Total Sheets 13]
5. Oath or Declaration [Total Pages 2 pgs.]
   - a. [ ] Newly executed (original or copy)
   - b. [X] Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 17 completed)*
     - i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. [ ] Application Data Sheet. See 37 CFR 1.76.
7. [ ] CD-ROM or CD-R in duplicate, large table or Computer Program (*Appendix*)
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   - a. [ ] Computer Readable Form (CRF)
   - b. Specification Sequence Listing on:
     - i. [ ] CD-ROM or CD-R (2 copies; or
     - ii. [ ] paper
   - c. [ ] Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. [X] Assignment Papers (cover sheet & document(s))
10. [ ] 37 CFR 3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
11. [ ] English Translation Document (*if applicable*)
12. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
13. [X] Preliminary Amendment (23 pgs.)
14. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. [ ] Request and Certification under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. [X] Other: Check # 470045 in the amount of $1,801.00

17. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:*

[X] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No.: 09/215,898

Prior application information: Examiner T. Black Group/Art Unit: 2771

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

18. CORRESPONDENCE ADDRESS

[X] *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* or [ ] *Correspondence address below*

Name	Gray Cary Ware & Freidenrich LLP				
Address	3340 Hillview Avenue				
City	Palo Alto	*State*	California	*Zip Code*	94304-1203
Country	US	*Telephone*	650-320-7426	*Fax*	

NAME *(Print/Type)*	~~Timothy W. Lohse~~	*Registration No. (Attorney/Agent)*	35,255
Signature	Timothy Lohse	*Date* 3/1/2001	March 1, 2001

Gray Cary\HV\7069798.1
104632-991100

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FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT ($) 1801.00

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	February 16, 2001
First Named Inventor	Sziklai et al.
Examiner Name	Not Yet Assigned
Group Art Unit	Not Yet Assigned
Attorney Docket No.	0104632-991101

METHOD OF PAYMENT

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: 07-1896

Deposit Account Name:

☒ Charge Any additional Fee Required Under 37 CFR 1.16 and 1.17

☐ Applicant claims small entity status. See 37 CFR 1.27

2. ☒ **Payment Enclosed:**

☒ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	355.00
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107	490	207	245	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 355.00

2. EXTRA CLAIM FEES

			Extra Claims		Fee from below		Fee Paid
Total Claims	154	-20** =	134	X	9	=	1206.00
Independent Claims	9	-3** =	6	X	40	=	240.00
Multiple Dependent				X		=	

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102	80	202	40	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	80	209	40	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)1446.00

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

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127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
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179	710	279	355	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($)

SUBMITTED BY				Complete *(if applicable)*	
Name (Print/Type)	Timothy W. Lohse	*Registration No. (Attorney/Agent)*	35,255	*Telephone*	(650) 320-7426
Signature				*Date*	March 1, 2001

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Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SENT FEES OR COMPLETED FORM TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Attorney Docket No. 104632-991101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

EXPRESS MAIL number: **EL657235469US**

Date of Deposit March 1, 2001

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Cindy K. Hoang

* * *

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COMMISSIONER OF PATENTS
Washington, D.C. 20231

ATTN: BOX PATENT APPLICATION

Sir:

Transmitted herewith for filing under 37 CFR 1.53(b) is the patent application of:

INVENTOR(s): Anthony T. Sziklai et al.

FOR: INTEGRATED CHANGE MANAGEMENT UNIT

This application is a continuation of U.S. Patent Application Serial No. 09/215,898, filed December 18, 1998.

Enclosed are:

[62] pages of specification, claims and abstract
[X] 13 sheets of Informal Drawings
[X] Preliminary Amendment (23 pgs.)
[X] a copy of the Revocation of Prior Power of Attorney and New Power of Attorney from parent application Serial No. 09/215,898 (2 pgs.)
[X] copy of Executed Assignment from parent application Serial No. 09/215,898 (5 pgs.)
[X] Check # 470045 in the amount of $1801.00
[X] Return Postcard

3-02-01 A

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PTO/SB/05 (08-00)
Approved for use through 10/31/2002. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL

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

Attorney Docket No.	104632-991100
First Inventor	Sziklai et al.
Title	INTEGRATED CHANGE MANAGEMENT UNIT
Express Mail Label No.	EL657235469US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

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Prior application information: Examiner T. Black Group/Art Unit: 2771

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NAME *(Print/Type)*	~~Timothy W. Lohse~~	*Registration No. (Attorney/Agent)*	35,255
Signature	Timothy Lohse	*Date* 3/1/2001	March 1, 2001

Gray Cary\HV\7069798.1
104632-991100

PTO/SB/17 (09-00)
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FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT ($) 1801.00

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	February 16, 2001
First Named Inventor	Sziklai et al.
Examiner Name	Not Yet Assigned
Group Art Unit	Not Yet Assigned
Attorney Docket No.	0104632-991101

METHOD OF PAYMENT

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☒ Check ☐ Credit card ☐ Money Order ☐ Other

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2. EXTRA CLAIM FEES

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Independent Claims	9	-3** =	6	X	40	=	240.00
Multiple Dependent				X		=	

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FEE CALCULATION (continued)

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169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) _____

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SUBTOTAL (3) ($)

SUBMITTED BY				Complete *(if applicable)*	
Name (Print/Type)	Timothy W. Lohse	*Registration No. (Attorney/Agent)*	35,255	*Telephone*	(650) 320-7426
Signature				*Date*	March 1, 2001

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Attorney Docket No. 104632-991101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

EXPRESS MAIL number: **EL657235469US**

Date of Deposit March 1, 2001

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Cindy K. Hoang

* * *

CERTIFICATE OF MAILING BY EXPRESS MAIL

COMMISSIONER OF PATENTS
Washington, D.C. 20231

ATTN: BOX PATENT APPLICATION

Sir:

Transmitted herewith for filing under 37 CFR 1.53(b) is the patent application of:

INVENTOR(s): Anthony T. Sziklai et al.

FOR: INTEGRATED CHANGE MANAGEMENT UNIT

This application is a continuation of U.S. Patent Application Serial No. 09/215,898, filed December 18, 1998.

Enclosed are:

[62] pages of specification, claims and abstract
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[X] Check # 470045 in the amount of $1801.00
[X] Return Postcard

Attorney Docket No. 0104632-991101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Anthony T. Sziklai et al.

Serial No.: Not Yet Assigned Group Art Unit: Not Yet Assigned

Filed: February 16, 2001 Examiner: Not Yet Assigned

Title: INTEGRATED CHANGE MANAGEMENT UNIT

EXPRESS MAIL number: **EL657235469US**

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Cindy K. Hoang

* * *

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, DC 20231

Sir:

Prior to examination of the above-identified application, Applicant requests that the amendments set forth below are entered and the Examiner consider the remarks below.

IN THE CLAIMS:

Please cancel Claim 1.

Please add the following new claims:

--2. A system for providing a dynamically generated application having one or more functions and one or more user interface elements, comprising:

a server computer;

one or more client computers connected to the server computer over a computer network;

a first layer associated with the server computer containing information about the unique aspects of a particular application and a second layer associated with the server computer containing information about the user interface and functions common to a variety of applications, a particular application being generated based on the data in both the first and second layers; and

each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer.--

--3. The system of Claim 2 further comprising a third layer associated with the server computer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.--

--4. The system of Claim 3, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--5. The system of Claim 2, wherein the second layer comprises a business content database having data about one or more different predetermined business applications.--

--6. The system of Claim 5, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--7. The system of Claim 5, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--8. The system of Claim 7, wherein the metadata database further comprises data about the user interface and functionality including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--9. The system of Claim 3, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access. --

--10. The system of Claim 2, wherein the server computer further comprises a change management layer for automatically detecting changes that affect an application.--

--11. The system of Claim 10, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--12. The system of Claim 11, wherein the server further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.--

--13. The system of Claim 2, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.--

--14. The system of Claim 13, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.--

--15. The system of Claim 13, wherein the builder module further comprises an event builder for generating triggering events for a form.--

--16. The system of Claim 13, wherein the builder module further comprises a report builder for building a report for a particular application.--

--17. The system of Claim 13, wherein the builder module further comprises a document builder for mapping a document onto the first layer.--

--18. The system of Claim 13, wherein the builder module further comprises a formula builder for generating formulas.--

--19. The system of Claim 16, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.--

--20. The system of Claim 13, wherein the builder module further comprises a worklist builder for generating a worklist.--

--21. The system of Claim 13, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.--

--22. The system of Claim 2, wherein the first and second layers are stored on the server computer.--

--23. The system of Claim 2, wherein the first and second layers are distributed across one or more server computers.--

--24. A method for dynamically generating an application using a server computer and one or more client computers connected to the server computer over a computer network, the method comprising:

providing a first layer containing information about the unique aspects of a particular application;

providing a second layer containing information about the user interface and functions common to a variety of applications, wherein a particular application is generated based on the data in the first and second layers;

establish a connection between a client computer and the server computer;

generating the functionality and user interface for a particular application for the client computer as the client computer connects to the server computer; and

distributing the user interface and functionality of the particular application to the client computer wherein the particular application and its user interface are dynamically re-generated each time a client establishes a connection with the server computer.--

--25. The method of Claim 24 further comprising providing a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.--

--26. The method of Claim 25, wherein the third layer further comprises a JAVA data management layer that distributes one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--27. The method of Claim 24, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--28. The method of Claim 27, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--29. The method of Claim 27, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--30. The method of Claim 29, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--31. The method of Claim 25, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access. --

--32. The method of Claim 24 further comprising automatically detecting changes that affect a particular application.--

--33. The method of Claim 32, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--34. The method of Claim 33, wherein automatically detecting changes further comprises automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.--

--35. The method of Claim 24 further comprising permitting a user to build a user interface for a particular application using the second layer.--

--36. The method of Claim 35, wherein the building further comprises one or more of editing an existing form and generating a new form that contains the data for a particular application.--

--37. The method of Claim 35, wherein the building further comprises generating triggering events for a form.--

--38. The method of Claim 35, wherein the building further comprises building a report for a particular application.--

--39. The method of Claim 35, wherein the building further comprises mapping a document onto the first layer.--

--40. The method of Claim 35, wherein the building further comprises generating formulas associated with the application.--

--41. The method of Claim 38, wherein the building further comprises generating one or more views/queries used in the reports.--

--42. The method of Claim 35, wherein the building further comprises generating a worklist.--

--43. The method of Claim 35, wherein the building further comprises generating the intelligent agents that detect changes associated with the particular business application.--

--44. The method of Claim 24 further comprising distributing the first and the second layers on the server computer.--

--45. The method of Claim 24 further comprising distributing the first and second layers across one or more server computers.--

--46. A server for dynamically generating an application for one or more client computers connected to the server computer by a computer network, comprising:

a first layer associated with the server containing information about the unique aspects of a particular application;

a second layer associated with the server containing information about the user interface and functions common to a variety of applications;

means for dynamically generating a particular application based on the first and second layers each time a client computer connects to the server computer; and

means for distributing the user interface and functionality of the particular application to a client computer.--

--47. The server of Claim 46 further comprising a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.--

--48. The server of Claim 47, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--49. The server of Claim 46, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--50. The server of Claim 49, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--51. The server of Claim 49, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--52. The server of Claim 51, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--53. The server of Claim 46 further comprising a change management layer for automatically detecting changes that affect an application.--

--54. The server of Claim 53, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--55. The server of Claim 54, wherein the change management layer further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.--

--56. The server of Claim 46, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.--

--57. The server of Claim 56, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.--

--58. The server of Claim 56, wherein the builder module further comprises an event builder for generating triggering events for a form.--

--59. The server of Claim 56, wherein the builder module further comprises a report builder for building a report for a particular application.--

--60. The server of Claim 56, wherein the builder module further comprises a document builder for mapping a document onto the first layer.--

--61. The server of Claim 56, wherein the builder module further comprises a formula builder for generating formulas.--

--62. The server of Claim 59, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.--

--63. The server of Claim 56, wherein the builder module further comprises a worklist builder for generating a worklist.--

--64. The server of Claim 56, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.--

--65. The server of Claim 46, wherein the first and second layers are distributed on the server computer.--

--66. The server of Claim 46, wherein the first and second layers are distributed across one or more server computers.--

--67. A system for providing a dynamically generated application having one or more functions and one or more user interface elements, comprising:

a server computer;

one or more client computers connected to the server computer over a computer network;

a first layer associated with the server containing information about the unique aspects of a particular application, a second layer associated with the server containing information about the user interface and functions common to a variety of applications wherein a particular application being generated based on the data in both the first and second layers, a change management layer associated with the server for automatically detecting changes that affect an application, and means associated with the server for automatically modifying the first and

second layers in response to the change management layer in order to automatically change the functionality and user interface elements of the application based on the changes detected by the change management layer.--

--68. The system of Claim 67, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--69. The system of Claim 67, wherein each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated each time when the client computer connects to the server computer.--

--70. The system of Claim 69, wherein the server further comprises a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.--

--71. The system of Claim 70, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--72. The system of Claim 67, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--73. The system of Claim 72, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--74. The system of Claim 72, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--75. The system of Claim 74, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--76. The system of Claim 70, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access. --

--77. The system of Claim 67, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.--

--78. The system of Claim 77, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.--

--79. The system of Claim 77, wherein the builder module further comprises an event builder for generating triggering events for a form.--

--80. The system of Claim 77, wherein the builder module further comprises a report builder for building a report for a particular application.--

--81. The system of Claim 77, wherein the builder module further comprises a document builder for mapping a document onto the first layer.--

--82. The system of Claim 77, wherein the builder module further comprises a formula builder for generating formulas.--

--83. The system of Claim 80, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.--

--84. The system of Claim 77, wherein the builder module further comprises a worklist builder for generating a worklist.--

--85. The system of Claim 77, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.--

--86. The system of Claim 67, wherein the first and second layers are distributed on the server computer.--

--87. The system of Claim 67, wherein the first and second layers are distributed across one or more server computers.--

--88. A method for providing a dynamically generated application having one or more functions and one or more user interface elements using a server computer and one or more client computers connected to the server computer over a computer network, the method comprising:

providing a first layer associated with the server containing information about the unique aspects of a particular application;

providing a second layer associated with the server containing information about the user interface and functions common to a variety of applications wherein a particular application being generated based on the data in both the first and second layers;

providing a change management layer associated with the server for automatically detecting changes that affect an application; and

automatically modifying the first and second layers in response to the change management layer in order to automatically change the functionality and user interface elements of the application based on the changes detected by the change management layer.--

--89. The method of Claim 88, wherein providing the change management layer further comprises providing one or more intelligent agents that detect changes that affect an application.--

--90. The method of Claim 88 further comprising executing a browser application by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated each time when the client computer connects to the server computer.--

--91. The method of Claim 90 further comprising providing a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.--

--92. The method of Claim 91, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--93. The method of Claim 88, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--94. The method of Claim 93, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--95. The method of Claim 93, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--96. The method of Claim 95, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--97. The method of Claim 91 further comprising executing a JAVA enabled web browser at each client computer to permit remote user access. --

--98. The method of Claim 88 further comprising providing a builder module for permitting a user to build a user interface for a particular application using the second layer.--

--99. The method of Claim 98, wherein the builder module further comprises editing an existing form and generating a new form that contains the data for a particular application.--

--100. The method of Claim 98, wherein the builder module further comprises generating triggering events for a form.--

--101. The method of Claim 98, wherein the builder module further comprises building a report for a particular application.--

--102. The method of Claim 98, wherein the builder module further comprises mapping a document onto the first layer.--

--103. The method of Claim 98, wherein the builder module further comprises generating formulas.--

--104. The method of Claim 101, wherein the builder module further comprises generating one or more views/queries used in the reports.--

--105. The method of Claim 98, wherein the builder module further comprises generating a worklist.--

--106. The method of Claim 98, wherein the builder module further comprises generating the intelligent agents that detect changes associated with the particular business application.--

--107. The method of Claim 88, wherein the first and second layers are distributed on the server computer.--

--108. The method of Claim 88, wherein the first and second layers are distributed across one or more server computers.--

--109. A server for providing a dynamically generated application having one or more functions and one or more user interface elements to one or more client computer connected to the server over a computer network, the server comprising:

a first layer containing information about the unique aspects of a particular application;

a second layer containing information about the user interface and functions common to a variety of applications wherein a particular application being generated based on the data in both the first and second layers;

a change management layer for automatically detecting changes that affect an application; and

means for automatically modifying the first and second layers in response to the change management layer in order to automatically change the functionality and user interface elements of the application based on the changes detected by the change management layer.--

--110. The server of Claim 109, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--111. The server of Claim 110, wherein the server further comprises a third layer that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application.--

--112. The server of Claim 111, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--113. The server of Claim 109, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--114. The server of Claim 113, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--115. The server of Claim 113, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--116. The server of Claim 115, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--117. The server of Claim 109, wherein the server further comprises a builder module for permitting a user to build a user interface for a particular application using the second layer.--

--118. The server of Claim 117, wherein the builder module further comprises a form builder for one or more of editing an existing form and generating a new form that contains the data for a particular application.--

--119. The server of Claim 117, wherein the builder module further comprises an event builder for generating triggering events for a form.--

--120. The server of Claim 117, wherein the builder module further comprises a report builder for building a report for a particular application.--

--121. The server of Claim 117, wherein the builder module further comprises a document builder for mapping a document onto the first layer.--

--122. The server of Claim 117, wherein the builder module further comprises a formula builder for generating formulas.--

--123. The server of Claim 120, wherein the builder module further comprises a view/query builder for generating one or more views/queries used in the reports.--

--124. The server of Claim 117, wherein the builder module further comprises a worklist builder for generating a worklist.--

--125. The server of Claim 117, wherein the builder module further comprises an intelligent agent builder for generating the intelligent agents that detect changes associated with the particular business application.--

--126. The server of Claim 109, wherein the first and second layers are distributed on the server computer.--

--127. The server of Claim 109, wherein the first and second layers are distributed across one or more server computers.--

--128. A system for providing a dynamically generated application having one or more functions and one or more user interface elements, comprising:

a server computer;

one or more client computers connected to the server computer over a computer network;

a first layer associated with the server containing information about the unique aspects of a particular application, a second layer associated with the server containing information about the user interface and functions common to a variety of applications wherein a particular application being generated based on the data in both the first and second layers, a third layer associated with the server that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application, and change management layer associated with the server for automatically detecting changes that affect an application so that the first and second layers are automatically updated based on the change management layer; and

each client computer further comprising a browser application being executed by each client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer.--

--129. The system of Claim 128, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--130. The system of Claim 129, wherein the server further comprises means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.--

--131. The system of Claim 128, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--132. The system of Claim 128, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--133. The system of Claim 132, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--134. The system of Claim 132, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--135. The system of Claim 134, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--136. The system of Claim 135, wherein the metadata database further comprises a business content data directory and an application component directory, the business content data directory having definitions of the data elements in a particular application and the application component directory storing procedures for manipulating business information.--

--137. The system of Claim 128, wherein each client computer further comprises a JAVA enabled web browser to permit remote user access. --

--138. A method for providing a dynamically generated application having one or more functions and one or more user interface elements from a server computer to one or more client computers connected to the server over a computer network, the method comprising:

providing a first layer associated with the server containing information about the unique aspects of a particular application;

providing a second layer associated with the server containing information about the user interface and functions common to a variety of applications wherein a particular application being generated based on the data in both the first and second layers;

providing a third layer associated with the server that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application; and

providing a change management layer associated with the server for automatically detecting changes that affect an application so that the first and second layers are automatically updated based on the change management layer; and

executing a browser application at client computer, wherein a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer.--

--139. The method of Claim 138, wherein the change management layer further comprises providing one or more intelligent agents that detect changes that affect an application.--

--140. The method of Claim 139, wherein the server further comprises automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.--

--141. The method of Claim 138, wherein the third layer further comprises providing a JAVA data management layer that distributes one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--142. The method of Claim 138, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--143. The method of Claim 142, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--144. The method of Claim 142, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--145. The method of Claim 144, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--146. The method of Claim 145, wherein the metadata database further comprises a business content data directory and an application component directory, the business content data directory having definitions of the data elements in a particular application and the application component directory storing procedures for manipulating business information.--

--147. A server for providing a dynamically generated application having one or more functions and one or more user interface elements to one or more client computers over a computer network, comprising:

a first layer associated with the server containing information about the unique aspects of a particular application;

a second layer associated with the server containing information about the user interface and functions common to a variety of applications wherein a particular application being generated based on the data in both the first and second layers;

a third layer associated with the server that retrieves the data in the first and second layers in order to generate the functionality and user interface elements of the application;

change management layer associated with the server for automatically detecting changes that affect an application so that the first and second layers are automatically updated based on the change management layer; and

wherein a browser application is executed by each client computer so that a user interface and functionality for the particular application is distributed to the browser application and dynamically generated when the client computer connects to the server computer.--

--148. The server of Claim 147, wherein the change management layer further comprises one or more intelligent agents that detect changes that affect an application.--

--149. The server of Claim 148 further comprising means for automatically modifying the first and second layers in response to the intelligent agents in order to automatically change the functionality and user interface elements of the application based on the changes detected by the intelligent agents.--

--150. The server of Claim 147, wherein the third layer further comprises a JAVA data management layer having means for distributing one or more JAVA applets to the client computer wherein the JAVA applets dynamically generate and present the user interface and functionality to the user based on the first and second layers.--

--151. The server of Claim 147, wherein the first layer comprises a business content database having data about one or more different predetermined business applications.--

--152. The server of Claim 151, wherein the data further comprises one or more of business knowledge, logical designs, physical designs, physical structures and relationships associated with the predetermined business application.--

--153. The server of Claim 151, wherein the second layer comprises a metadata database comprising data about the structures and functions associated with any application.--

--154. The server of Claim 153, wherein the metadata database further comprises data about the user interface including one or more of tools, worklists, data entry forms, reports, documents, processes, formulas and images.--

--155. The server of Claim 154, wherein the metadata database further comprises a business content data directory and an application component directory, the business content data directory having definitions of the data elements in a particular application and the application component directory storing procedures for manipulating business information.--

IN THE SPECIFICATION:

On page 24, line 5, replace "Figure 3" with --Figure 5--.

On page 26, line 19, insert --and thus what-- after the phrase "Java data management layer".

REMARKS AND CONCLUSION

Prior to examination of the above-identified patent application, Applicant requests that the Examiner consider the above amendments and new claims. Claims 2 - 155 are now pending in the application and are directed towards a system and method for providing dynamically generated software applications. The different sets of claims are directed to different aspects of the invention.

If the Examiner feels that a telephone conference with Applicant's Attorney would speed up the prosecution of this application, the Examiner is invited to call the Applicant's Attorney at the number listed below.

Any fee due for this Amendment may be charged to Deposit Account No. 07-1896.

Respectfully submitted,

Dated: March 1, 2001

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INTEGRATED CHANGE MANAGEMENT UNIT

Field of the Invention

This invention relates to the integrated management of information affected by regulatory changes, such as changes in environmental, health and safety laws, and non-regulatory changes.

Background of the Invention

Control of industrial and commercial activities by means of federal, state and local laws, statutes, ordinances and regulations ("regulations" herein) is endemic in the United States. Examples of activities that are regulated by such regulations include: environmental health and safety ("EH&S"; Titles 7, 10, 29, 30, 40, 42 and 49 of the Code of Federal Regulations and related state and local codes); administrative procedures applicable to government personnel (Title 5); agricultural activities (Titles 7 and 9); creation, use, treatment and disposal of nuclear materials (Title 10); conversion and distribution of usable forms of energy, power and water (Titles 10 and 18); banking, financial and securities activities and foreign trade (Titles 12, 15, 16, 19 and 22); space and aeronautical activities (Title 14); commercial trade practices (Title 16); food, drugs, cosmetics, medical treatments and devices ("FDCMTD"; Title 21); transportation of persons and cargo (Titles 23 and 49); housing and urban development (Title 24); firearms production and trade (Title 27); workers compensation (Title 29); mining and related activities (Title 30); national defense activities (Titles 15 and 32); navigation and navigable waters (Title 33); education (Title 34); activities in and on parks, forests, public lands and other public property (Titles 36 and 43); intellectual property activities (Title 37); veterans' pensions and relief (Title 38); postal service activities (Title 39); public contracts and public property management (Titles 41 and 48); public health (Title 42); emergency management and assistance (Title (44); grant of public welfare and assistance (Title 45); telecommunications (Title 47); and wildlife and fisheries activities

(Title 50). Some of the most pervasive regulations concern EH&S and FDCMTD activities.

Generation and use of hazardous substances in the United States has grown steadily in the last 53 years and is now estimated to be over 300 million metric tons per year. According to one definition, a "hazardous substance" is any substance or mixture of substances that may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children, if the substance: (1) is a toxic agent or reproductive toxin; (2) is corrosive; (3) is an irritant; (4) is a strong sensitizer; (5) is flammable, combustible or explosive; (6) is pyrophoric; (7) is a carcinogen, hepatotoxin, nephrotoxin or neurotoxin; (8) is an agent that acts on the hematopoietic system; (9) is an agent that damages the lungs, skin, eyes or mucous membranes; (10) is a compressed gas; (11) is an organic peroxide; (12) is an oxidizer; (13) is unstable, reactive or water-reactive; (14) generates pressure through decomposition, heat or other means; (15) is sufficiently radioactive to require labeling as such; (16) is a toy or other article intended for use by children and presents an electrical, mechanical or thermal hazard; or (17) is specially listed as a hazardous substance by a state or federal agency having jurisdiction over such substances.

At the federal level, special purpose hazardous substance laws and regulations, focusing on a particular hazardous substance or narrow class of such materials, have been applied for more than a century. In 1866, a federal law regulating transportation and storage of explosive and flammable materials was promulgated. This was followed in 1899, 1910, 1938, 1944 and 1947 by passage of the Refuse Act, the first Insecticide Act, the Food, Drug and Cosmetic Act, the Safe Drinking Water Act, and the Insecticide, Fungicide and Rodenticide Act, respectively. In 1955 and 1966, the Clean Air Act and the Federal Hazardous Substances Act appeared, respectively. Since 1969, the pace of introduction of new laws regulating hazardous

substances has increased, and approximately 15 new major federal laws and voluminous regulations have been introduced in this area. These laws often have overlapping jurisdiction and are not always consistent with one another. Several states, such as California, have passed their own hazardous substance laws before the corresponding federal hazardous substance laws were adopted. These laws still apply in those states and in many cases supersede their Federal counterparts. These laws statutes, ordinances, regulations and related constraints are constantly changing and require corresponding changes in data entry, data analysis and presentation of the results.

The Safe Drinking Water Act ("SDWA"), originally passed in 1944 and amended several times since then, covers all drinking water supplies in all states. Primary standards, to prevent adverse effects on human health, and secondary standards and covering certain aesthetic effects such as odor and turbidity of processed drinking water, are set down in terms of maximum permissible concentrations of specified contaminants in water delivered to any public drinking water system. From a regulatory standpoint, SDWA falls under the broader mandate of the Clean Water Act ("CWA"), whose ultimate goal is maintenance of the "chemical, physical, and biological integrity of the nation's waters."

CWA, with its most recent amendment, the Water Quality Act ("WQA") of 1987, establishes mandatory effluent limitation guidelines for all facilities which discharge waste into water bodies, or allow waste to enter and potentially contaminate subsurface water sources, like aquifers. CWA created the National Pollutant Discharge Elimination System ("NPDES") to regulate effluents, influents (waterborne wastes received by a treatment facility) and sludge. The primary enforcement mechanism of NPDES is the NPDES permit. CWA directs control authorities at the federal and state level to administer and enforce permit compliance. NPDES permits include terms and conditions ranging from required monitoring of point source discharges to the implementation of control technologies to minimize outfall.

The Clean Air Act ("CAA"), passed in 1955 and amended several times since that time (most recently, in 1990), covers emission of pollutants into the ambient air and atmosphere. This may include hazardous wastes that are liquid or gaseous when discharge occurs. National Ambient Air Quality Standards ("NAAQSs") are set forth for seven chemicals or chemical groups: SO_X, CO, NO_X, O_3, Pb, hydrocarbons and total suspended particulates. Additionally, emission standards are set forth for asbestos, beryllium, mercury and vinyl chloride. Primary Standards are set forth to protect human health, and Secondary Standards are set to protect or limit damage to other entities, such as flora, fauna and personal and real property. The federal government in effect delegates responsibility to achieve these standards to the individual states, which are required to present and implement State Implementation Plans to achieve the target air quality standards in various identified air basins in the states.

The primary enforcement mechanism of CAA is the CAA permit. Permits covering emission source construction, modification, and operation follow the NPDES scheme, adopting strict measures for controlling and reducing emissions of airborne waste at the source. CAA permits include terms and conditions ranging from the application of abatement devices and other control technologies for emission reduction, to required monitoring at all source emission point sources and non-point sources (i.e., fugitive emission locations). Permits based on economic incentive strategies, such as marketable emission allowances, were added to the federal regulatory program maze under the 1990 amendments. Although these additions were intended to stimulate compliance via market-based vehicles (like emission allowance futures trading), these permits have not, as yet, been broadly implemented.

The Toxic Substances Control Act ("TSCA"), originally passed in 1965, together with the Federal Hazardous Substances Act ("FHSA") passed in 1966 and the Resource Recovery Act ("RRA") passed in 1970, were the initial

federal laws governing generation and handling of toxic and other hazardous substances. Most provisions of the RRA and the FHSA have been incorporated in the Resource Conservation and Recovery Act, discussed below. Under TSCA, the Environmental Protection Agency ("E.P.A.") reviews any chemical substance that is or will be produced in sufficient quantity that it may cause significant acute or chronic human exposure. Testing is performed with respect to human health and the environment and focuses particularly on possible risk of serious harm to humans from (1) cancer, (2) genetic mutations and (3) birth defects. If the EPA finds that the risk to human health or to the environment is sufficiently great, the EPA may: (1) limit the amount of the chemical to be manufactured or used; (2) prohibit a particular use; (3) require placement of warning labels on all containers of the chemical; (4) require placement of public notices of use; and (5) regulate commercial use and/or disposal of the chemical.

Any person, including a company, that manufactures or imports more than 10,000 pounds or more of a chemical named on an E.P.A. Chemical Substances Inventory List is subject to the reporting requirements under TSCA. These reporting requirements include: (1) updating of a list of all chemicals present on a site, at four-year intervals or more frequently; (2) submission (to the E.P.A.) of a Pre-manufacture Notice and relevant test data for any new chemical, at least 90 days before manufacturing or importing the chemical; (3) submission of a Notice Of Intent To Import or To Export a listed chemical, within seven days after entering into a contract to import or export the chemical, if the chemical is known to be mutagenic, teratogenic or carcinogenic or is known to cause chronic health or environmental problems; (4) reporting of a significant new use for a chemical already on the E.P.A. list; (5) reporting of known significant adverse reactions caused by handling or discharge of any chemical used by the reporting entity; (6) submission of any unpublished health and/or safety studies on certain chemicals used by the reporting entity; (7) notification of any substantial risk of injury to human

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health or the environment, due within 15 days after the reporting entity first receives information on the risk; (8) submission of information on production of, use of and exposure to certain chemicals to an Interagency Testing Committee for analysis by the Committee; (9) submission of specified comprehensive information on a fixed format reporting form; (10) submission of results of tests, if any, performed by the reporting entity on certain hepta-halogenated dibenzo-p-dioxins and dibenzofurans, within 90 days after a test, if a positive result is obtained; and (11) submission of a Notification of PCB Activity form by any storer, transporter or disposer of polychlorinated biphenyl ("PCB") waste. TSCA also sets forth certain requirements for labeling of, disposal of and recordkeeping for certain chemicals, such as PCBs.

The Occupational Safety and Health Act ("OSHA"), passed in 1970, covers the conditions under which employees work. The regulations issued under OSHA make this Act among the most detailed of all workplace laws. The relevant parts of OSHA prescribe standards for the protection and welfare of employees exposed to workplace hazards. An employer must establish a written hazard communication plan to advise its employees of hazards associated with chemicals the employees handle, and incorporate into this plan the use of container labels, warning signs, Material Safety Data Sheets ("MSDSs") and training programs. The centerpiece of the OSHA Hazard Communication Standard is the MSDS, required for each hazardous substance manufactured or used on the site. The MSDS includes all relevant information pertaining to a hazardous substance, from its ingredients to physical properties, health hazards, exposure limits, storage incompatibilities, safe handling and use precautions and much more. An employer must report, within 48 hours, any incident that results in a fatality, or in hospitalization of five or more employees. The OSHA Log and Summary of Occupational Injuries and Illnesses form is used to record all work-related injuries and illnesses for each calendar year. Many such records must be maintained by

the employer for the duration of employment of an employee, plus 30 years. An employer must develop and implement a written emergency plan and make the plan available in the workplace, whenever an OSHA standard requires it. An employer must also develop and implement a written safety and health program and a medical surveillance program for employees involved in hazardous waste operations, including emergency response procedures.

The Occupational Health and Safety Administration (" O.S.H.A.") under the Department of Labor (D.O.L.) develops and enforces all OSHA standards. The O.S.H.A. primary enforcement activity is the inspection, or audit procedure. Facilities covered by one or more OSHA standard are subject to voluntary (routine) inspections, as well as non-voluntary inspections based on a warrant to search.

The Hazardous Materials Transportation Act ("HMTA"), passed in 1974, is administered jointly by the Department of Transportation ("D.O.T."), established in 1966, and the E.P.A., established in 1969. The HMTA sets forth 15 hazard classes of materials (e.g., flammable liquids, high explosives, poisons) plus five classes of "other regulated materials" and sets forth laws and corresponding regulations on: (1) identification, listing, labeling and placarding of these hazardous substances; (2) recordkeeping requirements for handling these hazardous substances, including Uniform Hazardous Material Manifests for shipment of hazardous wastes; (3) requirements for generators and transporters of hazardous substances and for owners and operators of specially defined treatment, storage and disposal facilities ("TSDFs") for these hazardous substances; (4) permit and pre-transport notification requirements and transportation routing for all facilities that generate or transport these hazardous substances; (5) requirements for tracking the movement of these hazardous substances; (6) containers to be used for transport; (7) incident notification and other procedures for handling and reporting accidental and intentional discharges of hazardous substances;

and (8) testing and standards for operators of transport vehicles for hazardous substances. Hazardous wastes and other hazardous substances are not distinguished under the HMTA. A "generator" of a hazardous waste is defined simply as "any person whose act first causes a hazardous waste to become subject to regulation". Transportation modes covered include movement of the hazardous substance by air, rail, water and highway. The D.O.T. is authorized to inspect generator and transporter facilities, vehicles and records to insure compliance.

The Resource Conservation and Recovery Act ("RCRA"), passed in the present form in 1976, was originally part of the Clean Air Act, passed in 1966. The RCRA establishes "cradle-to-grave" responsibility for hazardous solid waste handled by a generator, by a TSDF operator, or by a hazardous waste transporter or recycler. Under RCRA, a solid waste is a "hazardous waste", if: (1) the waste arises from specified manufacturing practices; (2) the waste is one of a group of specified wastes; (3) the waste contains any of a group of specified chemicals; or (4) the waste has specified toxicity, chemical reactivity, ignitability or corrosive characteristics. Household wastes are generally exempted from RCRA coverage. Generators of more than 1,000 kilograms per month of ordinary hazardous wastes or of more than 1 kgm per month of extremely hazardous waste must operate under a RCRA permit covering registration, container labeling, recordkeeping and other requirements. "Small quantity generators", who generate 100-1,000 kgms per month of hazardous wastes and no more than 1 kgm per month of extremely hazardous wastes, are covered by simpler requirements. Generators of still smaller amounts of the hazardous wastes or the extremely hazardous wastes are often exempt from regulation under RCRA.

The goals of RCRA include: (1) protecting the health, safety and environment of the public; (2) regulating the generation, treatment, disposal and storage of hazardous wastes; (3) reducing environmental pollution from waste disposal; (4) encouraging recycling and/or re-use of hazardous wastes;

and (5) eliminating certain landfill and other solid waste disposal practices. A Notification of Hazardous Waste Activity must be submitted by a generator, transporter or operator of a hazardous waste TSDF to apply for an E.P.A. identification number and for any applicable E.P.A. permits for on-site treatment, storage or disposal. Hazardous waste generators are required to conduct their own studies to determine if a specific hazardous waste can be treated to reduce its volume or toxicity, with records of such studies being submitted each year to the E.P.A. and being maintained for three years.

A Uniform Hazardous Waste Manifest, developed by the E.P.A. under RCRA and under HMTA, must be used by persons who transport hazardous waste for off-site treatment, storage or disposal, and a copy of each Manifest must be maintained as part of a facility's operating record. Owners or operators of a TSDF who receive hazardous waste without a proper Manifest must submit an Unauthorized Waste Report to the E.P.A. within 15 days after such an incident occurs. Upon closure of a hazardous waste facility, records of hazardous waste disposal and the amounts thereof must be submitted to the E.P.A. and to local land use control authorities.

A hazardous waste generator must demonstrate that it has the financial ability to cover liability claims involving sudden or non-sudden discharges from the facility. An owner or operator must monitor and inspect all on-site tanks that treat or accumulate hazardous waste. A spill or other discharge must be reported to the National Response Center ("N.R.C.") within 24 hours after the incident occurs, and a detailed report on such incident must be submitted to the E.P.A. within 30 days after the incident. RCRA is enforced concurrently with applicable state statutes.

The Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") was passed in 1980 in response to the discovery of several hazardous waste disposal sites that would have to be cleaned up at government expense. CERCLA was intended to: (1) provide a system for identifying and cleaning up chemical and hazardous substance releases; (2)

establish a fund to pay for cleanup of release sites, where those responsible cannot or will not pay for the cleanup; and (3) enable the federal government to collect the costs of cleanup from the responsible parties. The federal government set aside $1.8 billion in the first Superfund for hazardous waste site clean-up purposes. CERCLA includes on its hazardous substance list all hazardous wastes under RCRA, all hazardous air pollutants regulated under the CAA, all water pollutants regulated under the CWA, and most substances regulated under TSCA.

In 1986, the Superfund Amendments and Reauthorization Act ("SARA") added another $6.2 billion to the Superfund for clean-up purposes SARA also enacted Community-Right-to-Know requirements into law. Title III of SARA contains the Community Right-to-Know requirements and provides for: (1) Emergency Response Planning; (2) Accidental Release Notification; (3) Facility Hazardous Substance Inventory Reporting; and (4) Facility Toxic Substance Release Reporting.

Sections 301-303 of Title III enacted the requirement for Emergency Response Planning. Emergency Response Planning as enacted by SARA required the creation of committees at both State (State Emergency Response Committee, or S.E.R.C.) and Local (Local Emergency Planning Committee, or L.E.P.C.) levels. Owner/operators of facilities with specified hazardous substances on site in quantities in excess of specified thresholds are required to prepare and submit Emergency Response Plans to the L.E.P.C. having jurisdiction over the facility. Elements of the facility Emergency Response Plan include: (1) identification of Emergency Response procedures to be used for action on the site and for areas surrounding the site; (2) identification of a facility co-ordinator for implementing the plan; (3) procedures to be used during emergencies for notifying authorities and potentially affected parties; (4) methodology for determination when a release has occurred and the probable area and population at risk; and (5) description of Emergency

Response assets that are in place as well as the contact point for the Emergency Response assets.

Section 304 of Title III requires preparation and filing of an Accidental Release Notification report whenever an accidental release of a specified hazardous substance occurs in which (1) the substance crosses the facility boundaries or is released in transport on public roads, and (2) the release amount exceeds specified thresholds. This report must address: (1) actions taken to contain or respond to the release; (2) any known or anticipated acute or chronic health risks associated with the release; and (3) advice regarding medical attention required for any exposed individuals.

Section 311 and 312 of Title III provide for facility hazardous substance inventory reporting. Facility hazardous substance inventory reporting is required if substances for which an MSDS is required under OSHA are present in quantities in excess of specified thresholds. Facilities subject to hazardous substances inventory reporting requirements must: (1) produce a listing of specified hazardous substances present at the facility or an MSDS for each specified hazardous substance; and (2) an emergency and hazardous chemicals inventory report form. Both reports (listing/MSDS and inventory report) must be submitted to the following agencies: (1) L.E.P.C.; (2) S.E.R.C.; and (3) local Fire department.

Section 313 of Title III requires the E.P.A. to establish an inventory of toxic chemical emissions from certain facilities. To do so, the E.P.A. requires owners and operators of facilities that manufacture, import, process, or use specified toxic chemicals to report annually their releases of those chemicals to any environmental media. Releases to air, water, and land, and releases to off-site locations such as publicly owned treatment works or hazardous waste disposal sites, must be estimated and reported under Section 313. Both routine and accidental releases must be reported. Facilities must report even if their releases comply with all environmental laws and permits.

The Pollution Prevention Act ("PPA"), passed in 1990, requires hazardous waste generators and other similar facilities that manufacture, import, process or otherwise use listed toxic chemicals to annually report releases of any of these chemicals to any environmental medium (atmosphere, water, soil and biota). For each listed chemical that is reported, the generator must provide: (1) the quantity of the chemical that is released (before recycling, treatment or disposal) into a waste stream and the change, if any, from release in the preceding year; (2) the quantity of the chemical, if any, that is recycled or treated at the facility or elsewhere, the percentage change from the preceding year and the method(s) of recycling or treatment used; (3) the source reduction practices adopted by the generator and the quantitative method(s) used to monitor these practices, with these practices being reported in the categories of (a) equipment, technology, process or procedure modifications, (b) reformulation or redesign of the products, (c) substitution of input materials and (d) improvement in management, training, inventory control, materials handling or other administrative practices; (4) quantities of the chemical, if any, that are released in one-time events not associated with production processes; (5) quantities of the chemical expected to be released into a waste stream or to be recycled in each of the two immediately following years; and (6) a ratio or other quantitative comparison of production of the chemical between the current and preceding reporting years. Much of this information would be reported on a revised Form R under SARA Title III for each listed chemical.

Various attempts have been made to manage regulatory compliance, but no solution has been developed before that provides a comprehensive, integrated framework for (1) absorbing business changes into the application and database without affecting the integrity of the system, (2) automatically making application and database changes using intelligent agent routines, (3) managing technical and business content-related functionality using metadata tables rather than relying on traditional programming methods. Other

workers have created regulations databases, document management systems and other partial solutions for tracking changes in, and compliance with, regulations and similar requirements, but these partial solutions have not addressed the effects of change across an integrated database application or across an integrated framework of technical functions. These partial solutions also do not provide a "closed loop" approach to identifying changes using intelligent network agents, recommending modifications to the business content, and automatically effecting modifications in the system without the use of programmers and/or programming.

One recurring problem with any database that frequently changes is maintenance of the database as current. Where a database depends upon the current regulatory state, as where an EH&S database is being maintained by a conventional approach, continual reprogramming of the database software is required to reflect a constant stream of changes. This approach is not cost effective and, in effect, mortgages the database maintainer's future.

What is needed is an integrated change management system for a selected area of commercial or industrial activity that: (1) provides one or more databases having all relevant available information, including knowledge of regulatory and non-regulatory information and changes, used in connection with the activity; (2) facilitates sharing of this information between databases; (3) generates and archives records of software system versions used for data entry, reporting, processing, analysis and results presentation, and changes to these versions; (4) generates all documents and reports required for compliance under applicable regulations, laws and statutes; (5) provides screen images, and appropriate changes to these images, that implement data entry, processing, analysis, reporting and results presentation; and (6) allows entry of the changes and modification of the affected data entry forms, report forms, views, screen images, functions, processes and formulas, without requiring (re)programming of the underlying software.

Summary of the Invention

These needs are met by the invention that, in one integrated system, (1) provides one or more databases that contain information on operations and requirements concerning an activity or area of business; (2) monitors and evaluates the relevance of information on regulatory and non-regulatory changes that affect operations of the business and/or information management requirements; (3) converts the relevant changes into changes in work/task lists, data entry forms, reports, data processing, analysis and presentation (by printing, electronic display, network distribution and/or physical distribution) of data processing and analysis results to selected recipients, without requiring the services of one or more programmers to re-program and/or re-code the software items affected by the change; and (4) implements receipt of change information and dissemination of data processing and analysis results using the facilities of a network, such as the Internet.

Brief Description of the Drawings

Figure 1 schematically illustrates the relationship of four layers that are the primary components of the invention.

Figure 2 is a flowchart illustrating use of the invention to respond to one or more relevant changes found by an intelligent agent on a network.

Figures 3, 4 and 5 display metadata tables that are important in operation of the metadata layer.

Figures 6 and 7 are flow charts comparing procedures for creating a data entry form, using the invention (Figure 6) and using a conventional approach (Figure 7).

Figures 8-19 are examples of screen images used in application of the invention to EH&S activities.

Description of Best Modes of the Invention

The invention provides an integrated system for managing data that is, or can be, constantly changing, because of changes in regulations, in the business environment, in technology and in any other factor that materially affects operations and/or information management requirements of a particular business. Without an integrated method for automatically handling such changes, a developer or user of software that tracks business operations must continually rewrite part or all of the software in order to accurately and fully reflect these changes, usually at great expense and effort and with little hope for relief.

This invention monitors, responds to, and incorporates changes in, federal, state and local laws, statutes, ordinances and regulations (referred to collectively herein as "regulations") and changes in technology in one or more regulated areas of commercial activity, such as environmental health and safety (EH&S), and food, drugs, cosmetics, medical devices and treatments ("FDCMTD"). Initially, making applicable laws and regulations available and searchable gives rise to data management requirements and to development of one or more suitable databases. Implementation of a database carries with it questions concerning initial investment, maintenance and upgrade costs, integrity and security concerns. When one or more of the applicable regulations changes, this affects the data management requirements and the underlying database(s) and any existing software linkages between related database structures. The invention provides a relatively seamless system for creating robust solutions without the use of programmers and/or programming, (2) monitoring and assimilating business change into business solutions rapidly, without (re)programming, and (3) providing business solution customization and extensibility without impacting the integrity or security of the system.

The system operates at four layers, as illustrated in Figure 1: (1) a change management layer 11 that includes one or more change agents that "cruise the Web" and identify and bring to the user's attention relevant regulatory and non-regulatory changes found on the Web that may affect a user's business; (2) a Java data management layer 13, a user interface, built using the Java language, that applies metadata attributes to business and business-change related data (regulation-based or non-regulation-based); (3) a metadata layer 15 that provides and/or defines data about every feature of the user interface including, without limitation, tools, worklists, data entry forms, reports, documents, processes, formulas, images, tables, views, columns, and other structures and functions; and (4) a business content layer 17 that is specific to the particular business operations of interest to the user.

Within the Java management layer, configuration tools take the place of a programmer and define various end user functions in terms of metadata, and metadata definitions are used to implement the desired end user functions. Within the metadata layer, the relevant items (data entry forms, etc.) in the business content layer are defined, regulatory and non-regulatory changes in these items are implemented, and access thereto is provided. Within the business content layer, the relevant items are stored (and changed, as appropriate) for the specific business operations of concern to the end user. A business area or grouping in the business content layer is referenced and described by the metadata layer to enable management by the data management layer. The system's four layers, plus the Configuration tools and the End User tools, are illustrated in Figure 1.

The invention includes an integrated framework of technical functions for tracking and managing regulatory compliance, non-regulatory requirements and other change-intensive business activities. The invention provides a cost-effective approach for absorbing database and application changes that arise from changes in regulations, policies, procedures, processes, materials, and similar factors. The integrated framework of the

invention is divided into two main groupings, Change Configuration functions and End User functions. The Change Configuration functions support creation and change of End User functions through a variety of flexible and intelligent manual routines, such as intelligent agents, screens, fields, reports, documents and logic that can be changed without requiring programming skills. The End User functions support business-related activities, such as data entry, data analysis, document generation, document distribution and reporting, that are utilized by a typical business user.

The metadata architecture is unique in that it stores all of the information used to create the front-end business application and manage the back-end business database. Unlike "hard-coded" systems, in which business functionality and content is managed by explicit lines of code, the metadata architecture of the invention is entirely data-driven.

Regulations and technical requirements are constantly changing in the United States. Regulatory changes are recorded and posted for reference in different media, including paper, microfiche and electronic media. The internet is one source of information on regulatory change that is both prompt and cost-effective. The following example illustrates how a change, made to a regulation, is identified on the Internet and incorporated and managed by the invention.

A. Example

Assume that a federal regulation, governing disposal of hazardous waste in landfills, is amended so that the regulation now requires analysis, reporting and record keeping of landfill samples. Part of the change language addresses what landfill sample information must be collected, including landfill type, landfill cell, parameter(s) sampled, identification of chain-of-custody, and laboratory results. The change is posted in the Federal Register and becomes promptly available as a hard copy (paper) and electronically, on the Internet.

The invention begins tracking change using one or more intelligent agents ("IA's"). An "intelligent agent" is a specialized program that resides on a network, or at a server as an applet, and can make decisions and perform tasks based on pre-defined rules. Preferably, two or more IA's used by a business will have sufficiently different assignments that at most modest overlap occurs between the IA's. An IA function is part of the Logic Menu, which is discussed subsequently.

A change made to landfill waste regulations is identified by an IA on the Internet, and the relevant change information is routed to a selected metadata table in the invention. The change information includes one or more of five recommendations: (1) create a new WorkList; (2) change one or more data entry forms; (3) create one or more new reports; (4) create a new process; and (5) add one or more new document images. Configuration Users can choose to automatically configure the preceding recommendation based on a set of default conditions, or can manually implement the configuration using a configuration toolkit.

A new WorkList is created manually in a Set Up WorkList function, discussed subsequently, to guide an End User through the tasks involved in recording a sample, tracking the sample through a chain-of-custody, printing a management report of all samples submitted for analysis, preparing and processing a government report, and printing or otherwise distributing the government report on a required government form, or on the Internet, as a document image. No workflow or task management programming is involved in creating the new WorkList. An End User can select the new WorkList in the WorkList function under the File menu and can begin tracking the changing work and tasks.

The WorkList function serves a central role, offering a means for integrating the various data management functions in what can be characterized as a virtual, task-driven menu. The invention provides an integrated user interface with all the functions necessary for managing

business data: data entry forms, reports, documents, processes, formulas, etc. The WorkList extends this user interface by allowing users to set up lists of functions in the order that such functions are typically used by an end user. Figure 3 illustrates the important structures and relationships that allow such implementation. Figure 3 illustrates how worklist items can include modules (data entry forms, reports and documents), processes and sub-worklists. A user can create its own task-driven menu and adapt rapidly to change(s) and minimize or eliminate the cost of (re)programming.

A change to a data entry form is accomplished automatically, using default assumptions. A Configuration User can automatically launch the configuration process from the Change Log, adding two new fields to the Waste Sample form, for 'Landfill Type" and 'Landfill Cell.' No forms (re)programming is required in adding the two new fields to the Waste Sample form. An End User sees these changes to the form(s) the next time one of the Waste Sample forms is opened in the Data Entry Form under the File Menu.

A new Report is created automatically, using the View Builder and the Report Builder functions to track all samples sent for analysis, sample status and sample turn-around time. The Configuration User uses View Builder to join and create new views and sample reporting tables, such as Samples, Laboratory_Samples and Sample_Status. The Configuration User uses Report Builder to sequence the fields in the report, specify desired fonts, and create a title for the report. No report (re)programming is required in creating the view or report. An End User can select and print the new report within the Report function.

A new process is created manually, using the Advanced Query Builder and Set Up Processing functions. The new process may determine which samples contain contaminants with levels above a regulatory limit or threshold. The Configuration User uses the Advanced Query Builder to create a view that joins Sample_Results and Regulatory_List_Results and

contains logic for comparing one value to another. The Set Up Processing function defines the new view as a process that can be scheduled and that will return results each time the function is executed or launched. No SQL, PL/SQL or other type of (re)programming is required to create the new view or process. An End User can select, schedule and execute the new process using the Process function in the Logic Menu.

A document image is created manually in the Document Builder function to provide regulatory report data on the required government form. The Configuration User imports the image from the Internet and maps the fields on the form to columns in a database. No (re)programming is required in mapping the document(s) to the database. An End User can select the Document Image function from the File Menu and visually examine the results of the report process on the government form.

The system uses a standard interface, a part of the invention, that is based on a multi-tier, server-based, Web-enabled computing model that does not require (re)programming to respond to changes in the received data. A system created using the invention is dependent upon, and driven by, the supporting metadata. The metadata describes the various system components, using a business-like terminology, and replaces the front-end or desktop portion of a user interface. Three main components of the interface portion of the invention are a Web server, a database server and a Java-enabled browser that uses TCP/IP or a similar protocol.

A primary requirement of the invention is to allow a reasonably skilled end user to produce a set of relevant data through the interface, without requiring use of a programming or database manipulation language (DBML), such as SQL.

Each of the four layers is discussed in more detail in the following sections.

B. Business Content Layer

The business content layer includes business knowledge, logical designs, physical designs, physical structures, relationships, and data associated with a selected area of business activity. A business area can be a functional field within an organization, such as finance or human resources, or a particular type of business, such as printing or a (specialty) food business, for which business-related data must be accumulated and managed. The business content layer is defined by and referenced in the metadata layer so that the necessary objects, tables, columns, relationships, functions, procedures and data can be read and updated by the Java data management layer. The business content layer may be characterized as a business content database.

C. Metadata Layer

The metadata architecture is created using Oracle or a similar database system. The metadata model has two main components, a business content data dictionary and an application component. The data dictionary describes or defines the data elements of the application system and the business content layer and how a data element is recorded and managed at the database management system (DBMS) level. The application component primarily records procedures for manipulating business information using data entry forms, worklists, processes, documents, reports and business logic.

The most important aspect of the server-based, programming-free model is the system's ability to create, change and (re)configure the application system at one location and to promptly make the modified application system available elsewhere within the enterprise as well. This approach also eliminates the need to write new code or to modify existing code and eliminates the need for (re)compiling and creating executable instructions and updating every affected user's computer within the organization. This approach is implemented using intuitive, user-friendly, dialog-based screens and using small code segments to define business logic.

Figures 4 and 5 illustrate some of the relationships between several of the metadata tables that are part of the metadata layer. The GreenSuite Image table 31 stores application images for use with menus that are part of the system. The imagelink table 32 records the links between modules and images. The image source table 33 provides image files for use in the system. The View column table 34 holds the columns defined for all views in the system. The View table 35 holds the definition of a "View."

The View Business Area table 36 records information about business area Views in the system. The Business Area table 37 holds the definition of business areas and forms a high level grouping of various business functions that can be implemented using the system. The business process business area table 38 records information about business area processes in the system. The business area worklist table 39 records worklists for the business area. The View parameter table 40 holds the parameters that define all views in the system.

The View group table 41 records information about group Views in the system. The group table 42 holds the various user groups defined in the system. The group menu table 43 stores the menu items that are accessible by user groups. The menu table 44 holds the menu items and their hierarchical structures in the system. The user table 45 holds the user names defined in the system.

The group module table 46 stores the modules that are accessible by user groups in the system. The business area module table 47 records module names for every business area. The language table 48 provides different language definitions for use in the system. The menu title table 49 provides the menu titles for the system. The business process table 50 provides the definitions and business logic of the processes defined within the system, to support reporting activities.

The report group table 51 provides details for the report group. The report matrix table 52 provides the definitions of matrix reports. The module

item table 53 provides the definitions and business logic of individual data elements for every data entry form, report and document defined in the system. The module table 54 provides the definition and business logic for all data entry forms, reports and documents created within the system. The report parameter table 55 records the parameters specified for reports in the system.

The report trigger table 56 records the triggers specified for reports in the system. The worklist item table 57 provides definitions of, and links to, modules launched from the worklist. The worklist table 58 provides the definitions and logic for worklists that facilitate work flow for a business activity. The calculation profile table 59 provides the definitions and logic to perform calculations related to data entry forms, for decision making and data input. The calculation profile value table 60 records the calculation profile variable values.

The module formula table 61 provides the formulas used by the modules in the system. The module formula argument table 62 provides the formula arguments used in the module. The module trigger 63 provides the generic triggers specified for modules in the system. The output item table 64 provides details for the document module items. The output data source table 65 provides details for the document module items data source.

The related module table 66 provides the links between modules in the system. The formula table 67 provides the definitions of formulas used in the system. The formula argument table 68 records the arguments for all formulas used in the system. The table 69 maintains all the application table definition details. The output data item table 70 provides details for the document module items.

The calculation profile variable table 71 records the calculation profile variables. The column table 72 records the data elements of every table recorded in the table 69. The output group property table 73 maintains the details of the application table columns. The module event trigger table 74

provides the event triggers specified for modules in the system. The module event trigger step table 75 provides the event trigger steps specified for modules in the system. The output template table 76 provides the document template details.

With reference to Figure 3, the constraint column table 81 provides individual data elements for the business rules. The constraint table 82 provides the business rules defined at the database level for every table in the application system, together with the meaning of each rule. The column table 72 is characterized in the preceding. The column allowable value table 83 provides the business rules at a data element level. The autofill table 84 records the automatic data transfer setup. The arc column table 85 provides data elements that are part of every usually exclusive relationship in the system. The arc table 86 records the mutually exclusive relationships in the system. The lookup table 87 provides the lookup definitions for every child table in the system. The tablename table 69 is characterized in the preceding. The object table 88 holds the names of the database objects defined in the system. The about table 89 stores versions of, and copyright information concerning, the system. The datatype table 90 provides the datatype definitions throughout the system. The dependency tree table 91 provides the application and database hierarchy(ies). The color table 92 provides the color definitions for use in various tools.

D. Java Data Management Layer

The Java format is chosen as the basis for the data management layer because Java is an object-oriented language that is powerful, flexible, easily learned, multi-threaded, portable, and distributable over a network through use of a browser.

When an object-oriented language (OOL) is employed, once a particular kind of activity has been programmed for an object, that behavior can be shared with other like objects, rather than being reprogrammed each time a new like object is introduced. A future program or activity can

"inherit" code from a program that presently exists so that code becomes reusable. One result of this is reduced (re)programming time and code debugging time.

Java is powerful, in part because of the class libraries provided in the language. For example, a programmer who wishes to place a special button on a screen can use qualities of a button provided with the Java Abstract Window Toolkit, then add behavior to perform specific tasks. Java is also more easily learned than its closest predecessor, C++. Although much of the syntax of Java and C++ is the same, a Java programmer doesn't have to deal with pointers and memory allocation, two onerous features that are part of programming with C++.

Java, because it is multi-threaded, can handle two or more tasks simultaneously. For example, building part of a screen, displaying the part of the screen, and pursuing the remainder of the screen-building activity in a background thread gives an end user the impression that the screen is quickly ready for use.

A Java program, once written, can be run on any platform having a Java interpreter so that Java is portable. Because compilation of a Java program generates "bytecode", not machine-specific runtime code, recompilation is not necessary when moving from one platform to another. The major browsers, Netscape Navigator and Internet Explorer, include a Java interpreter so that a user of those browsers can run Java code.

Traditional client-server applications require upgrades to a client machine whenever code changes are implemented, a daunting task in a large network. Where Java applets are used, code is downloaded at runtime, insuring that the client has the most recent version of the code. This allows easy deployment of Java code over the Internet, or over an intranet of an organization. The Java security model prevents unauthorized tampering with the client machine using non-authenticated code. By using Java, the invention disclosed here also becomes platform-independent, portable, secure and easy

to deploy over a suitable network, such as the Internet. A more extensive discussion of Java is available at http//:www.javasoft.com.

The Java data management layer of the system provides a graphical user interface for both the metadata layer and the business content layer, which allows a web browser user to communicate with the metadata and business content layers on a server from anywhere in the world.

No part of the Java data management layer is programmed for specific business content. Each procedure used by an end user is, or can be, tailored for specific business content and for specific user roles. The end user's system may be (re)configured without programming and may be maintained without programming.

The user interface is generated by the interpretation of the metadata layer delivered to the Java data management layer. The relationship between the business content layer and the Java data management layer may be characterized as a "data mapping," with no hard-wired coding as is typical in a conventional program. "Data mapping," as used here, refers to a mechanism that provides a correspondence between an item in a graphical user interface (GUI) and an item to be changed in the business content layer.

The Java data management layer the end user sees is defined only by the metadata and is generated as needed by a single program that interprets what a form will look like. Flexibility is maintained by having no hard-wired connection between code and the business content layer.

In a similar manner, reports and other output documents exist only in the metadata created through the Java data management layer. These output documents are produced by interpreting the metadata and by extracting data from the particular business content chosen. Events may be set up based on one or more changes in the business content data, but processing of an event depends on metadata that defines the event. Processing steps can be created to summarize and "filter" data, depending upon the metadata defining the

summarization and filtering techniques. Data can be imported from, and exported to, other systems based on metadata definitions of data structures.

With reference to inputs, outputs, processing and events, the metadata defines how the system should respond. The metadata can also be changed by an advanced user. Normal programming steps are decomposed into pieces that can be combined by a non-programmer into a coherent set of procedures that define a unique system.

Using the Java data management layer, an end user can enter data into the business content layer using forms tailored to the user's specific task(s). The end user sees specific menus, forms and reports that pertain to the user's work. Alerts, based on selected trigger conditions, are received by e-mail or screen messaging, reminding the user of tasks to be performed, relevant training and relevant events that have occurred. An end user cannot affect the business content layer, except in assigned areas, so that data are secure while being accumulated. A user located in a remote site, connected by telephone or though the Internet, can provide input information for a company's system using the Java data management layer.

A manager who uses the system can see high-level, cumulative data concerning a relevant area in the business content layer and can move to the level of detail needed for the task at hand, including charts and graphs accumulated over time for monitoring a business area. Through event management, a business can be alerted, by e-mail, facsimile or screen message, to trends that are especially relevant to that business area.

The Java data management layer and the metadata layer together serve as a standard interface system that is positioned "on top of" one or more databases, allowing addition, deletion and modification of data entry forms, tables, views, images, reports, queries, information processing and logic, monitoring or work flow and distribution and routing, menu presentations and provision of regulatory or non-regulatory alerts. Substantially all of the data entry and modification, report monitoring and preparation, and other

monitoring processes are transparent so that the user need not be a computer programmer to deal with changes that occur from time to time.

E. Change Management Layer

The change layer primarily involves an intranet or the Internet and uses one or more intelligent agents (IA's) that continually search on the Web for relevant changes in a selected business area. The changes may be regulatory and/or non-regulatory, and each IA is defined by rules and constraints that focus on the selected business area. When an IA discovers a relevant change, the IA obtains all available information concerning this change and delivers this information to the Java data management layer. A user may configure the system to apply pre-defined rules to the change in order to determine whether the change information delivered by the IA will be accepted and acted upon by the Java data management layer. Alternatively, the user may decide manually (or manually override the pre-defined rules) whether the delivered change information will be accepted and acted upon, or ignored.

Assume that a data entry form is to be created based on the Department Table of the invention. Figure 6 is a flow chart showing the steps used to accomplish this. In step 101, the Form Builder function is launched from the Tools Menu. In step 103, the form is given a name, and the Department Table is selected as the base table. In step 105, one or more fields are chosen for incorporation in the data entry form, and the form is uploaded to the network. A maximum of three steps is required to create a data entry form using the invention. The data entry form and its definition may be assumed to be bug-free, because the underlying Form Builder has been thoroughly tested and confirmed to generate the correct metadata definition of the desired form.

This approach should be compared with the flow chart in Figure 7, showing the procedure for creating the same data entry form in a conventional language-based development environment. In step 111, the

language-based environment development tool is invoked. In step 113, the program code is written and debugged. The program is compiled, in step 115, and an executable is generated, in step 117. In step 119, the executable is placed in the appropriate directory on all user desktops in the organization. Additional steps are required to create a new data entry form, using a conventional approach, and steps 113 and 115 should be represented as a loop, because it is unlikely that the new program code will compile and run the first time.

The invention is preferably implemented in software and, as noted in the preceding, has been reduced to practice using a Java programming language and using a relational database system such as Oracle to create links between the different components of the software package. In one embodiment, the system is expressed as seven interacting menus (File, Logic, Distribution, Data, Tools, Administration and Help), each with supporting functions, in the following format and with the following functions

I. File Menu

A. WorkList

1. WorkMap
2. WorkCalendar
3. WorkChat
4. WorkList Help

B. Data Entry Forms

1. Image/URL
2. Video/Audio
3. Form Report
4. Copy Record
5. Archive Record
6. Find Data
7. Calculate Record
8. Form Help

9. Grid Data Entry
10. Related Forms

C. Report
1. Process
2. Edit
3. Preview
4. Report Print
5. Report Send

D. Program
E. Favorites
F. Find

II. Logic Menu
A. Calculator
B. Process
1. Run Process
2. Schedule Process
C. Intelligent Agent
D. Graph/Chart

III. Distribution Menu
A. Alert Messaging
1. Alert History
2. Conditional Alerts
B. Send To
C. EDI

IV. Data Menu
A. Import
B. Export
C. Archive
D. Copy

WebLinks

V. Tools Menu

A. New Form Builder

B. Edit Form

1. Form Properties

2. Link To

3. Item Properties

4. Display Items

5. Formula Items

C. Edit Form Items

D. Event Builder

E. Report Builder

F. Document Builder

G. Delete Module

H. Formula Builder

I. View Builder

J. Advanced Query Builder

K. Intelligent Agent Builder

L. Set Up Processing

M. Set Up WorkList

N. Maintain Parameters

VI. Administration Menu

A. Set Up Distribution

B. Maintain Distribution Groups

C. Maintain Menu

D. Maintain Server Process

E. Security

F. Change Password

G. Maintain Functional Versions

VII. Help Menu

A. Help System

B. Help Desk

C. About Change Agent System

Content and purpose of these functions are discussed in the following.

I. File Menu

A. User WorkList is a task-driven function that a user creates to support the user's own internal business processes. WorkList is integrated with other functions in the framework and can be used to launch entry forms, reports, processes, tools, URLs, Web pages and external programs. The integrated function of WorkList include the following.

1. WorkMap is an integrated business process management and routing function that implements user tracking of the status of a task, receipt of new tasks, and routing of tasks to other users. WorkList can be viewed as a workflow activity by enabling the WorkMap option. WorkMap data can be viewed on-line, printed, or transmitted using e-mail and facsimile.

2. WorkCalendar provides an integrated calendar view, by day, week, month, calendar quarter, calendar half or year, of all tasks in a work flow activity, of a work flow activity in a graphical format. Calendar information can be viewed on-line, printed or transmitted by e-mail and facsimile.

3. WorkChat is an integrated on-line chat function, allowing a user to select a chat channel and to work privately or with a selected group to solve task-related problems.

4. WorkList Help is an integrated function providing amplifying information concerning an activity or requirement.

B. Data Entry Form implements manual data entry into the system, as well as querying, calculating with and analyzing entered data. Data Entry Form provides function for navigating to attached images, to Web page URLs and to subsidiary forms. The integrated function of Data Entry Form include the following.

1. Image/URL implements attachment of document images and Web page URLs ("Images") to business records. A user can open an Image, view the Image on-line, print the Image and transmit the Image by e-mail and facsimile.

2. Video/Audio implements attachment of video and audio clips to business records. A user can launch a video or audio image, print video images, and send video and audio clips by e-mail and facsimile.

3. Form Report implements creation of one or more reports from a base table(s) used by the form. A user can preview, print and send a reports by e-mail and facsimile.

4. Copy Record implements copying data from one record to another. A user can create multiple copies and can copy a record from a child record by selecting the relevant table(s) and column(s) to be copied.

5. Archive Record implements archiving, de-archiving, purging and viewing of one or more records.

6. Find Data implements finding of one or more records based on parent-child relationships. A user can search for and view a record by entering an "or like" condition for any column in any parent or child table.

7. Calculate Record attaches pre-defined mathematical formula(s) to a form and calculation of results using the formula(s). A user can map formula arguments (variables, parameters) to tables and columns in a database, read in transaction data imported from external systems, set up data profiles to reduce data entry, and enable creation of new records based on calculated results. Results can be graphed, printed or transmitted by e-mail and facsimile.

8. Form Help provides form and field level help on-line.

9. Grid Data Entry implements querying and editing of records in a grid or spreadsheet-style interface. A user can transmit grid data by e-mail and facsimile.

10. Related Forms implements launching of a sub-form or related form from a master form.

C. Report implements viewing, printing and transmitting data based on pre-defined business requirements. Data are provided to a user in the most useful format for that user. A data report can be in tabular format, with column(s) displayed horizontally, in columnar format, with data displayed vertically, or in document format, with data inserted on top of, or associated with, regulatory form images. Indeed, this association is a key feature of the invention. A report function includes the following features.

a. Process implements processing the results of the report. This feature is used for more complicated reports, where logic or multiple data sources (Tables, Views, etc.) may be involved. A user can define one or more parameters, such as location, date or period, to filter the results of the process.

b. Edit implements user editing of a report, either directly or through selection and use of data entry forms supporting the report.

c. Preview implements previewing report results in tabular, columnar and document formats. A user can also scroll through multiple pages and rows. A graph, attached to a report, can also be previewed.

d. Report Print implements printing the results, and any associated graphs and other attachments, of a report.

e. Report Send implements transmission of a report, including graphs and other attachments, by e-mail and facsimile.

II. Logic Menu

A. Calculator implements calculation of results using pre-defined formulas. A user can enter values for formula arguments, calculate results, view the results on-line, print the results and transmit the results by e-mail and facsimile.

B. Process is a menu for the following process features.

1. Run Process implements processing of results for a report and analysis tasks, such as statistical analysis of data. This function is used for more complicated reports, where logic or multiple data sources (tables, views, etc.) may be involved. A user can define one or more parameters, such as location, date or period, to filter the results of the process, can export result data, and can open reports that are based on the result data.

2. Schedule Process implements launching of one or more intelligent agents and background processes. This function implements scheduling of processes (e.g., reporting) in advance, in order to limit disruptions that can occur in normal system operations.

C. Intelligent Agent launches one or more intelligent agents (IAs) to pursue internal and external Web activities. An "intelligent agent" is a specialized program that makes decisions and performs tasks based on pre-defined rules and objectives. An IA can be used to identify changes in laws, statutes, ordinances, regulations and related issues, changes in technical requirements, to provide feedback, and to perform Change Configuration tasks.

D. Graph/Chart implements opening of a graph or chart, based on a pre-defined data set, to provide line, bar, pie, stacked area charts and other charting formats. A user can manually manipulate depth, rotation and elevation of graph and chart results, can print the results and can transmit the results by e-mail and facsimile.

III. Distribution Menu

A. Alert Messaging implements transmission of alert messages by screen, pager, e-mail and facsimile. A user selects an alert mode, specifies an expiration date and time, selects one or more recipients, selects manual/send for the alert, views an alert history and/or sets up one or more alert conditions that will automatically trigger the sending of an alert. Alert Messaging includes the following function.

1. Alert History implements viewing of one or more alerts that have been transmitted, according to content, recipient(s), sender, date and time of transmission, message and other relevant criteria.

2. Conditional Alert implements setup of automatically triggered (as distinguished from manually triggered) alert conditions, according to alert mode, description of triggering event, message, recipient(s) and conditional logic.

B. Send To implements transmission of documents and associated images through e-mail and facsimile. A user can select a document to be sent, mode of transmission, recipient(s), and the return pager number for confirmation. A user can look up distributions of historic documents by specifying document name, recipient(s), sender, date and time of transmission, message and other relevant criteria.

C. EDI implements transmission of data by electronic data exchange (EDI) . A user can specify transaction data being sent, recipient(s), other information describing the transaction, and can then transmit the data.

IV. Data Menu

A. Import implements importation of data from external files. A user can select files for import, select tables as import destination(s), define delimiters and text qualifiers, separate fixed width columns, map external file fields to database columns, define lookup conditions, parse conditions, check for errors and import data.

B. Export implements export of data to external files. A user selects the file(s) to be exported, the table(s) to be exported, the delimiter and text qualifier, sets up file and column properties, checks for errors and exports the file.

C. Archive implements archiving, de-archiving and purging of data. A user can enable or disable an archive, recover archived data, purge data, recover archived data and create snapshots of archived data.

D. Copy implements copying of one or more records within a table. A user can create single of multiple copies and copy data from child records by selecting relevant tables and columns to be copied.

E. WebLinks opens and attaches Web page links to a master Web page. A user can select, attach, order, remove and launch a Web page from the master Web page.

V. Tools Menu

A. New Form Builder implements creation of new data entry forms, using a change configuration function. A user can assign one or more new forms to a business area and group, specify the form name, select base tables, select columns, create and display formula columns, format columns and save the new form.

B. Edit Form implements editing or otherwise changing an existing form, using a change configuration function. A user can select a form, make changes to a form, save the changes, The Edit Form module includes the following functions.

1. Form properties change of form level (as distinguished from field level) properties. A user can change a form layout, change the query filter condition and specify restrictions on global queries.

2. Link To links related forms to a specified form so that the related forms can be launched from Data Entry Form. Here, child forms are linked to a parent form.

3. Item Properties allows a user to change field level (as distinguished from form level) properties. A user can change the field label, display width, sequence, list of values, lookup form (a form that is edited for a foreign key column) and other relevant properties.

4. Display Items implements addition of display-only fields to a form. A display field can be based on columns from other tables, including tables that are twice removed from the form's base table.

5. Formula Item adds formulas to existing tables and display-only fields.

C. Edit Form Item implements editing of form fields. A spreadsheet format allows a user to easily re-sequence and edit data for single or multiple fields.

D. Event Builder implements attachment of form level and database triggers to data entry forms

E. Report Builder is a change configuration function for building reports based on tables and views (joins of multiple tables).

F. Document Builder is a change configuration function for mapping documents, such as regulatory forms, onto to database columns for reports.

G. Delete Module is a change configuration function for deleting data entry forms, reports, processes and worklists.

H. Formula Builder is a change configuration function for creating formulas, including complex, nested equations.

I. View Builder is a change configuration function for creating views for use in reports.

J. Advanced Query Builder is a change configuration function for creating more sophisticated queries and views.

K. Intelligent Agent Builder is a change configuration function for specifying or modifying rules and objectives to be used by an Intelligent Agent to be launched.

L. Set Up Processing is a change configuration function for creating computational processes using one or more views.

M. Set Up Work List is a change configuration function for setting up task-driven menus based on data entry forms, reports, processes, sub-worklists, tools, Web pages and external programs.

N. Maintain Parameters is a change configuration function for creating and maintaining parameters for use in filtering reports.

VI. Administration Menu

A. Set Up Distribution implements setting up users, printers, facsimile machines, pagers and other distribution instruments.

B. Maintain Distribution Groups creates distribution groups and assigns users to these groups.

C. Maintain Menu maintains the system menu, including the menu picks, language, color schemes and other relevant properties.

D. Maintain Server Processes implements connecting to and initiating server-side processes, such as e-mail, facsimile, pager and GIS processes.

E. Security implements setting up user groups, system privileges, database privileges and other relevant security activities.

F. Change Password implements changing of user passwords.

G. Maintain Functional Versions compares and manages data associated with functional versions, including changes to data entry forms, views, reports, processes and worklists.

VII. Help Menu

A. Help System provides context-sensitive technical and functional help.

B. Help Desk manages internal and user-related issues.

C. About Change Agent System describes the regulatory change system, including system version information.

The system provides a "business application browser" that combines Web browser technology with a selected set of business application items that are common to the tasks to be performed to implement information management for a given business area or requirement, including common functions such as work/task management, data entry, reporting, data processing and analysis, data presentation (printing, electronic display, distribution, etc.), and report and document preparation.

The invention thus combines the connectivity of a Web browser with the data management tools for a selected business activity. Because the system is, or may be arranged to be, accessed and used through an Internet connection, the system is not limited to stand-alone or local applications. A

business with activity sites throughout the world can be connected as easily as a group of contiguous sites. The system allows a business to use the normal business skills of their employees and does not require that every employee become a programmer in order to continue to respond to regulatory and/or technological and/or social changes affecting business operations and/or information management requirements.

As examples of applications which are enabled by the invention, an EH&S system and an FDCMTD system are developed and discussed subsequently.

In the EH&S area, for example, the business content layer in one embodiment may include seven sections that communicate with each other through a mechanism that integrates these sections:

(1) product stewardship, including product information, ecological and toxicological studies, allegations/inquiries tracking, MSDS management and materials and waste labeling;

(2) incident tracking and prevention, including emergency management, incident tracking and process safety;

(3) personnel health and safety, including personnel demographics, personnel training, safety, injuries and illnesses, industrial hygiene and occupational medicine;

(4) hazardous materials and waste, including hazardous materials, waste tracking, pollution prevention and site remediation;

(5) environmental releases, including air emissions, water discharges, soil and groundwater discharges and toxic chemical releases;

(6) regulatory requirements, including audits, regulatory lists, regulatory issues, requirements and litigation;

(7) facilities management, including physical and organizational structures, company information, equipment tracking and process and operations information; and

(8) tools that allow one to implement the EH&S functionality.

In an area such as food, drugs, cosmetics, and medical treatments and devices ("FDCMTD"), a business content layer may include activities or objects in one or more of the following seven areas and implement communication between the areas:

(1) foods, food additives, prohibited food additives, animal feeds, labeling, packaging, testing on animals and humans, unavoidable contaminants, nutritional guidelines, dietary supplements, irradiated foods;

(2) drugs and pharmaceuticals, advertising, labeling, packaging, prescription forms and orders, drug names, interpretative statements and warnings, bioavailability and bioequivalence, controlled substances, controlled substance schedules, narcotic treatment drugs, medicated foods and feeds, over-the-counter drugs, applications for FDA approval of new and modified drugs;

(3) animal drugs and feeds, labeling, packaging, unavoidable contaminants, oral, implantable, injectable, ophthalmic, topical and intramammary dosages, tolerances, feed additives, feed irradiation, prohibited substances;

(4) cosmetics, labeling voluntary registration and filing of ingredients, warning statements;

(5) biologics, registration and product listing, use of blood and blood components, diagnostic substances;

(6) radiological treatments and devices, records and reports, notification of defects, repurchase, repair and replacement of electronic products, import controls, performance standards for electronic products, ionizing radiation emitting products, microwave and radiofrequency emitting products, light emitting products and sonic/infrasonic/ultrasonic radiation emitting products; and

(7) medical devices, clinical chemistry and toxicology devices, labeling, device corrections and removals, recalls, premarketing approval,

tracking and classification of devices, exemptions, cigarettes and smokeless tobacco, banned devices.

These areas are complemented by tools that allow one to implement the FDCMTD functionality.

In connection with FDCMTD activities, the primary considerations may include: (1) which FDCMTD items are now part of inventory, and which FDCMTD items need to be replenished; (2) by what other names, if any, is an FDCMTD item known in the trade; (3) what restrictions on labeling and/or packaging of an FDCMTD item are imposed; (4) what restrictions, if any, are imposed on animal testing of each FDCMTD item; (5) are test results for an FDCMTD item presently being evaluated by a federal or state agency (e.g., the FDA or the NRC); (6) does dispensing of a particular FDCMTD item require licensing or certification of the distributor by a federal or state agency; (7) what are the expiration dates, if any, for each FDCMTD item in inventory; (8) what are the restrictions, if any, on use, dermatological application or ingestion of each FDCMTD item in inventory; (9) which FDCMTD items, if any, are considered experimental and may not be distributed to any recipients without restriction; (10) which FDCMTD items require presentation of a properly executed restriction form before the item can be dispensed; and (11) which FDCMTD items are subject to control by a federal or state government. These and related questions are incorporated in data entry forms, analysis result forms, report and other document forms, and distribution forms for a business area that includes part or all of the activities that involve one or more FDCMTD items.

A similar integrated set of sections can be developed in any of the other regulated areas to which one or more of the Codes of Federal Regulations applies, or selected areas of non-regulatory change in a business activity. The system uses the four interacting software layers (change, Java data management, metadata and business content), discussed in the preceding, and may include an array of pre-defined document forms, report forms, data

entry forms, formulas and calculations that are most likely to be needed in that business activity. These pre-defined forms and analytical procedures are changed or supplemented to meet the relevant regulatory and non-regulatory changes that are identified by one or more Intelligent Agents that reside on a network, such as the Internet, and that are identified and entered manually by individual users. System functionality can be extended by importing related analytical techniques, such as geographic information systems capability, and by use of internet links to expand the flexibility of the system.

An EH&S system that implements the invention in one embodiment includes eight sections, illustrated in an example shown in Figures 8-19. Each E&S section has several functional modules that are responsible for different activities associated with tracking and creating reports on related activities and for providing links between the different modules in the same section and/or in another section. The sections and the input data and output data for these sections are as follows.

I. Product Stewardship

Input data:

material/chemical information
product information
MSDS management
product labeling
ecology/toxicology studies
pesticide information
computer usage tracking
allegations/inquiries tracking

Output data:

material technical sheets
vendor/outbound ANSI MSDS information
products, products-in-process and waste labels
risk assessment studies

FIFRA labels and reports
TSCA labels and reports
customer usage surveys
allegation/inquiry reports

II. Incident Tracking and Prevention

Input data:

emergency management
incident tracking
material/waste spills
near-miss tracking
hazards analysis and modeling
workplace safety
process safety management (PSM)

Output data:

emergency plans
emergency resources and mutual aid
incident notifications and agency reports
safety inspection reports
safety audit reports
management of change reports
PSM and project review reports

III. Personnel Health and Safety

Input data:

personnel information
personnel demographics
training plans
injury and illness tracking
workers compensation and disability events
industrial hygiene (IH)
occupational medicine

epidemiological trend analysis

Output data:

personnel profiles and histories

personnel locations and personnel protection equipment (PPE) use

training reports

OSHA and internal injury/illness reports

workers compensation and disability reports

IH monitoring, plans and reports

medical screening reports

epidemiological studies

IV. Hazardous Materials and Waste

Input data:

materials management

shelf life tracking

waste stream information

waste manifesting

waste accumulation and storage

on-site waste treatment and disposal

hazmat and waste labeling

pollution prevention

site remediation

Output data:

SARA state/local inventory reports

shelf life reports

vendor and internal waste profiles

manifests, LDR and exception reports

EPA hazardous waste reports

waste facility permit applications

NFPA/HMIS waste labels

waste minimization reports

V. Environmental Releases

Input data:

air emissions

water discharges

leak detection and repair

emission reduction credits

soil discharge and stormwater monitoring

groundwater and water quality

toxic chemical releases

permit management

permit conditions and exceedence monitoring

Output data:

air emission inventory and fee reports

LDAR reports

emission reduction reports

discharge monitoring reports

groundwater sampling reports

toxic release inventory reports

permit applications and compliance reports

exceedence reports

VI. Regulatory Requirements

Input data:

environmental audits

inspections

requirements management

regulatory issue tracking

compliance and corrective action plans

legislation tracking

regulations

regulatory list management

Output data:

audit reports

inspection reports

requirements reports

company and site issue reports

corrective action plan reports

legislative action reports

regulation profiles

regulatory list tracking

VII. Facilities Management

Input data:

site physical information

site organization information

customer and vendor information

process information

equipment/training information

project and task management

sample tracking

EH&S cost tracking

enterprise reference data

Output data:

site profile reports

customer and vendor reports

process history and operations reports

equipment/training reports

project and task reports

sampling and COC reports

EH&S cost reports

enterprise data lists

VIII. Tools:

data entry form creation
data import/export
custom fields
custom processing
report creation
output from report creation
document creation
query/data view creation
print. facsimile, e-mail paging
alert rules and messaging
imaging
geographic information systems
task management and work flow
on-line help
archiving
security

The Product Stewardship section includes databases that provide relevant information on chemical and physical properties of materials used at a facility, product handling information, ordinary and special hazards associated with a material consumed, processed and/or produced at the facility, and environmental health and safety (EH&S) assessments. This section can create a Materials Safety Data Sheet (MSDS) in a plurality of languages, using pre-set phrases linked to the EH&S assessments, and the MSDS can be distributed to selected recipients using the system's MSDS distribution system (facsimile, e-mail, hard copy, etc.). This section permits a user to perform life cycle analyses on selected materials. MSDS image files can be created and stored within the system and/or can be converted to an ANSI standard 16-section format for HAZCOM viewing. A user can also create HAZCOM warning labels that comply with NFPA and HMIS

requirements. This section also tracks material imports and exports, as well as pre-manufacture notifications, ecology-toxicity studies, allegations received concerning discharges, and inquiries concerning manufactured chemicals. This section also provides for pesticide reporting under FIFRA.

The Incident Tracking and Prevention section captures and accumulates information on all environmental releases and discharges and all injuries and illnesses at the facility. This section includes a listing of incident command structures, listings of qualified emergency response personnel, responsibilities for emergency responders and emergency procedures, including checklists. This section identifies hazards associated with, and emergency response information for, materials that may be released. A Geographic Information System (GIS) tool is included that can be used to graphically display incident information, locations of nearby toxic, reactive, ignitable and/or corrosive chemicals and of the closest emergency response equipment. This section provides agency reportability determination for SARA and CERCLA releases and provides follow-up notifications for the appropriate agencies. Associated statistical tools allow statistical analysis of incidents to identify possible trends. Environmental releases, permit excursions, injuries and illnesses at the facility can be accumulated for a selected division or facility or for an entire enterprise to create reports for SARA, OSHA and internal reporting requirements. Incidents that result in workers compensation issues and/or in risk management issues can also be identified and tracked.

The Personnel Health and Safety section is the main repository of employee information and allows scheduling, monitoring and tracking of events involving industrial hygiene, safety and/or occupational medicine. All types of industrial health surveys are supported, including chemical, noise, heat stress, radiation and ergonomics. Results of occupational medicine examinations, including physical exams, health history questionnaires, respirator fit tests, EKG exams, audiometric exams, pulmonary function tests, vision tests, x-ray exams and drug screening, can be accumulated and

analyzed. This section captures and accumulates employee demographics, primary and secondary job classifications, job activities, and employment histories. This section is integrated with other sections to create process surveys and analysis plans for exposure groups that can be selected by industrial hygiene and safety personnel. This section aids in identification of training needs associated with a job, a location or a regulatory requirement. Groups of persons that need particular training can be identified, and content of appropriate training courses and follow-up courses can be determined. Costs associated with all examinations and training activities can be captured and examined.

The Hazardous Materials and Waste section tracks a material's arrival at the facility, the maximum quantity stored, distribution and use of material at the facility, movement, and consumption and disposal of material at the facility. Material tracking provides information to support SARA notifications and release reporting and allows a user to generate waste profiles, hazardous waste manifests and related DOT shipping information. This section maintains a library of previous manifests, tracks the status of manifest copies, and captures and notes discrepancies and modifications, if any, vis-a-vis an earlier manifest. The manifest information, once created, is rolled up to produce RCRA state and federal waste summary reports. This section also provides for authorization, stocking, inventorying and re-ordering of material to ensure that required materials are always available. Pollution prevention projects, source reductions, waste minimization and waste tracking against user goals can be implemented within this section to meet internal and/or external targets. The section provides mass and energy balance tracking for selected processes and/or selected equipment.

The Environmental Release section captures necessary data to create agency reports of releases to air, water or other liquids, and land. Air release information can be captured for Title V requirements, risk management plans, air emissions inventory summaries, and leak detection and repair

programs. This section captures multimedia permit requirements for air, effluent discharges, stormwater, water quality and waste facility permits. Permit dates and imposed conditions can be monitored using automatic screen alerts or e-mail messages. Tracking of calibration events, samples, analysis requests and laboratory reports are implementable within this section.

The Regulatory Requirements section provides additional tools that are useful in implementing and managing EH&S compliance, including identification of all internal and external requirements in order that the facility be allowed to operate. This section also identifies who is responsible for compliance with a particular requirement. This section can be used to determine if, and how, proposed regulations will affect facility operations by providing access to material, equipment and process information to which the regulations may be applied. Reference information, such as checklists and current regulations, are available through this section or by use of links to Internet data sources. Compliance documents, interpretations, procedures and work plans can be stored and shared with all affected persons and organizational units. The status of work plans, tasks and activities can be tracked and reported. Audit scheduling, audit findings and corrective actions scheduled and implemented can be identified and reported to provide feedback on the effectiveness of the facility's compliance program. This section provides an effective tool for designing and implementing an ISO 14000 compliance program for a facility.

The Facilities Management section is a cross-functional sub-system that maintains site-specific and enterprise data. This section captures geographic information, organizational structures, equipment specifications, operating information, calibration requirements, maintenance schedules, vendor information and user-defined checklists. This section also captures relevant process information and data, site disposal activities, products manufactured, unit operations, and simulation of process scenarios and recipe information. A user can profile land use wildlife resources and cultural resources present,

and sensitivity of selected receptors. This information can be presented spatially, if desired, using the GIS capability.

Figure 8 is an image of a screen showing the invention with an EH&S business solution, referred to as "GreenSuite", enabled in the main menu. Figure 9 shows the business groups for a business area within the EH&S business solution. Figure 10 shows an example of a WorkList. Figure 11 shows an example of a configuration tool used to create WorkLists. Figure 12 shows an example of a data entry form. Figure 13 shows an example of a configuration tool used to create data entry forms. Figure 14 shows an example of a report. Figure 15 shows an example of a configuration tool used to create reports. Figure 16 shows an example of processing results. Figure 17 show an example of configuration tool used to create data processing. Figure 18 shows an example of a document. Figure 19 shows an example of a configuration tool used to create documents.

In summary, the system accepts new data and forms and changes to existing data and forms, determines links of each entered data item to one or more of the sections and modules within a section, adds the data item to, or uses the data item to upgrade an extant data item within, one or more modules, and implements any quantitative or qualitative changes that should be made in the remainder of the system as a result of entry of the data item.

The system also provides tools, including formulas, algorithms, functional descriptions and presentation formats that use one or more already-entered data items to compute or obtain one or more values that can be (1) presented as an output value for a report or other presentation on facility operations and/or (2) used to determine whether the facility complies with relevant regulations and/or (3) used to indicate an affirmative response corrective action to be taken or already taken in facility operations.

APPENDIX

This Appendix provides definitions for various objects used in the invention.

The invention in one embodiment uses a "thin client" approach in a client/server mode, in which a relatively unsophisticated client server at the user's site is connected through the Internet or another network to a server that provides one or more databases of information and provides substantially all of the analysis and processing capability for this information. A client or end user enters certain characteristics of information that the user wishes to obtain or process, and the server helps the user to build one or more queries that present the request to the database(s) in a form the database(s) can respond to provide all the information the user has requested.

This "thin client" approach allows the combined server/client system to take advantage of the separate strengths of the server (simple and/or complex database structures, use of on-line transaction processing tools) and of the client (use of GUI, Windows and Windows applications) without requiring unnecessary duplication of these capabilities. After the user has disconnected from the server, no server programs remain on the user's terminal. This approach requires only modest user terminal capabilities (20 Mbytes of hard drive space, 8 Mbytes of RAM, a PC or Macintosh or Sun terminal with a mouse, Netscape Navigator 4.1+ or Internet Explorer 4+) and TCP/IP communications capability. The server or host terminal provides all of the database capability and most of the processing power and preferably includes a database structure such as Oracle 7.3+, 2 Gbytes of hard drive space, 256 Mbytes of RAM and TCP/IP capability.

Introduction of some definitions is appropriate here. A "database" is a collection or group of objects that holds various related information items. This information is divided into tables, views, columns and rows, and an object is identified by its name and/or icon in a database.

A "table" is a structure that holds data in a database, often as one or more two-dimensional structures divided into rows and columns. An example of a table is a spreadsheet. A table is often referred to as a physical file.

A "view" is an alternative representation of data in a table and may appear as one or more columns and/or one or more rows. The data attributes can change according to the format in which a view is presented. A view may be an overlay of a table structure but does not replace the table. A view is often referred to as a logical file.

A "base table" is a table that is referenced in a view or a query.

An "image" refers to a document image on a screen or a Web page that can be called up and viewed, printed, transmitted and attached to a relevant business record.

A "parent" table, view or form may provide information that is used directly to help construct or supplement a corresponding "child" table, view or form.

A "column" is one or more vertically oriented parts of a (two-dimensional) Table and is identified by specifying specific information in a table. Each column will have one data type (character, decimal, hexadecimal, integer, alphanumeric, etc.). A row-column intersection is often referred to as a field.

A "foreign key column" is a column whose data source is a parent primary key column.

A "row" is one or more vertical parts of a Table and consists of a selected sequence of values drawn from one or more columns -- one value for each column. Row entries are actual data in a table. A row is often referred to as a record.

A "query" is a request to select, format and process/analyze one or more rows of data in a table and can operate on one or more tables. A query must specify (1) where the requested data are stored, (2) what are the common elements, if any, of the tables and/or views to be searched, (3) what

data item(s) (usually, one or more columns) the user wishes to select, and (4) what criteria are applied to a data item. A query provides reporting Capability and processing/data analysis capability, using spreadsheets and other tools.

A "query editor" receives a user request and takes the user through all steps required to build a query to which the system can respond. A query definition is created in Structured Query Language (SQL). A query editor stores the information needed to create an SQL statement.

A "query filter condition" is a method for applying restrictions on data retrieved by a query.

A "trigger event" is an action performed by a user of the system that initiates another action or set of actions.

A "form level trigger" is part of a form application and is activated only when a specific trigger point is executed with the form application.

A "stacked area chart" is a bar type chart in which different data components are displayed as separate regions on a single, vertical or horizontal bar.

A "report filter" is a method for applying restrictions on the data retrieved by a report.

A table "join" reassembles the data that appears in a full row, using common columns that exist in two or more tables to associate the data. Stated more abstractly, a table join expresses a relationship between two or more rows of data in logically distinct tables.

An "inner join," also referred to as an "equal join," is the most common join type, returning or associating rows that match between common columns in two or more tables. An "outer join" returns or associates all rows in two or more tables, whether or not the rows match.

A "direct join" occurs when two or more Tables being joined together share a common column. An "indirect join" occurs when two or more tables being joined together do not share a common column; in an indirect join, one

or more intermediate tables may share one common column with one table being joined and share another common column with another table being joined.

When a table join is created between a first table and a second table, the relationship created between the two tables may be one-to-many, with each record in the first table being unique, and with many corresponding records in the second table. This is the preferred data representation and provides accuracy. An alternative relationship, usually undesirable because of the possibility of duplication, is many-to-many, in which at least one record in each of the first and second tables is not unique. For example, multiple records in the first table may match multiple records in the second table.

An "expression" applies specified operations to data and defines row selection criteria, for example, by determining which rows of data will be returned in response to a query.

A "parameter" is a procedure created within the system to return a value in response to a query. For example, a parameter may be created to return a location name, a threshold value of some variable, or a begin date or end date. A parameter may be changed each time the (same) query is executed. A value, to be returned to the requestor, may be placed into a parameter in either of two ways: (1) a default value is entered and (ii) a value is entered after the associated procedure is run. A value is entered into the parameter at process run time, and this value is used (1) to define a new result column or (2) in an expression, to define one or more selection criteria for the number of rows returned by the query. A result column applies specified operations to data and returns a new column of data. An SQL function and arithmetic operators can be used to create a result column. a result column can be used to provide several data types, including calculated values, summary values and data processing values.

An SQL function performs operations on data and returns specific values based on the results of those operations. An SQL function may be applied to a unique data type, such as numeric, alphanumeric, character or date data, or may be used in a query definition to define a result column or an expression. A SQL function may be used in a query definition to define a result column or an expression.

Arithmetic function processing manipulates numeric data, for example, by performing arithmetic, logarithmic, trigonometric and/or statistical operations. String function processing manipulates alphanumeric data, including the operations of combining, extracting and movement of character locations. Data function processing manipulates date data to perform, for example, delay time arithmetic. The arithmetic functions include summation, subtraction, formation of an absolute value and of a trigonometric value for a numeric data item. A string function combines a plurality of strings, to form concatenated expressions, and extracts one or more characters from a string.

A "set function" groups data according to common values and returns a single summary row. A set function determines the values returned for a result column.

Date operations, one of the most common uses for a result column, include (1) conversion of date data into a desired format (such as MM/DD/YYYY), (2) conversion of string data into a date value, calculation of days remaining in a given month, and (4) calculation of the date and day one year ago. Date processing involves conversion of column values to a formatted date string, including specification of century (CC, SCC), year (SYYY, YYYY, YEAR, SYEAR, YYY, YY, Y), quarter (Q), month (MONTH, MON, MM, RM), day (DDD, DD), starting day of the week (DY, D), same day of the week as first day of the year (WW) and same day of the week as first day of the month (W).

The system also employs the Boolean connectives "AND" (in which both conditions must be satisfied in order for a row to be included in the

result set), "OR" (in which, if either of the conditions is met, a row is included in the result set) and "GROUP" ( ), which organizes data between the parentheses for processing.

A database developer usually has several design goals, including (i) maximization of the amount of database information available and (ii) minimization, if not elimination, of duplication of information in the database. These two goals are sometimes at odds with each other. A typical database will have multiple tables, chosen to help achieve the goal of minimum duplication. This minimum duplication goal is sometimes helped by breaking a full row of data into separate tables.

What Is Claimed Is:

1. A system for monitoring processing and disposition of at least one material used in a business at a facility, the system comprising:

a first database that provides product stewardship for at least one selected material that is received, created, consumed or produced as a waste product at the facility, the first data base including information on at least one product produced at the facility, information on ecological and toxicological studies performed at the facility, information for production of a Materials Safety Data Sheet (MSDS) for at least one material used at the facility, and tracking of allegations and inquiries concerning operations at the facility; and

at least one additional database, drawn from the following group of databases:

a second database that allows tracking and prevention of selected incidents involving unintended discharge of a material at the facility, the second database including information on response to at least one type of emergency at the facility, information on tracking of at least one incident at the facility, and safety information on at least one process used at the facility;

a third database that provides information on and monitoring of personnel health and safety at the facility, the third database including information on demographics of personnel working at the facility, information on personnel training, information on safety measures implemented at the facility, injuries and illnesses experienced by at least one worker at the facility, and information on industrial hygiene and occupational medicine studies carried out at the facility;

a fourth database that provides information on and monitoring of hazardous materials and hazardous waste, the fourth database including information on at least one hazardous material used at the facility, tracking of at least one waste material produced at the facility, information on at

pollution prevention measures and on site remediation measures implemented at the facility;

a fifth database that tracks a controlled release or discharge of a material to the environment, the fifth database including information on discharge of at least one hazardous substance into at least one of the air, the water, the groundwater and the soil at the facility, and information on at least one toxic chemical release at the facility;

a sixth database that provides selected information on regulatory requirements for receiving, handling, processing or producing hazardous materials, the sixth database including information on at least one environmental audit conducted at the facility, information on regulatory lists used at, and on regulatory issues concerning, the facility, and information on at least litigation issue concerning the facility; and

a seventh database that provides selected information on management of the facility, the seventh database including information on at least one of the physical structure and the organizational structure at the facility, information on tracking of at least one equipment item at the facility, and information on at least one process used at the facility;

a tools module that provides software for at least one of creation of a report on operations at the facility, creation of formulas and expressions for a report on operations, creation of at least one image for a report on operations, archiving of at least one record on operations, and security measures implemented at the facility, and that implements entry of one or more changes in regulatory and non-regulatory requirements for the business without requiring manual reprogramming of the tools module software; and

a relational database management module that links each database to each other database and to the tools module so that an information item, once entered, becomes available to each database and to the tools module.

Abstract of the Invention

An integrated system for managing changes in regulatory and non-regulatory requirements for business activities at an industrial or commercial facility. Application of this system to environmental, health and safety activities, and to food, drug, cosmetic, and medical treatment and device activities, are discussed as examples. The system: provides one or more databases that contain information on operations and requirements concerning an activity or area of business; receives information on regulatory and non-regulatory changes that affect operations of the business; converts these changes into changes in data entry forms, data processing and analysis procedures, and presentation (by printing, electronic display and/or distribution) of data processing and analysis results to selected recipients, without requiring the services of one or more programmers to re-key and/or reformat the items affected by the change; and implements receipt of change information and dissemination of data processing and analysis results using the facilities of the Internet.

(1) A metadata

(2) A set of tools

(3) A set of [illegible] meta

(4) A [illegible] for managing change

(5) Business rules + algorithms

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Abstract of the Invention

An integrated system for managing changes in regulatory and non-regulatory requirements for business activities at an industrial or commercial facility. Application of this system to environmental, health and safety activities, and to food, drug, cosmetic, and medical treatment and device activities, are discussed as examples. The system: provides one or more databases that contain information on operations and requirements concerning an activity or area of business; receives information on regulatory and non-regulatory changes that affect operations of the business; converts these changes into changes in data entry forms, data processing and analysis procedures, and presentation (by printing, electronic display and/or distribution) of data processing and analysis results to selected recipients, without requiring the services of one or more programmers to re-key and/or reformat the items affected by the change; and implements receipt of change information and dissemination of data processing and analysis results using the facilities of the Internet.

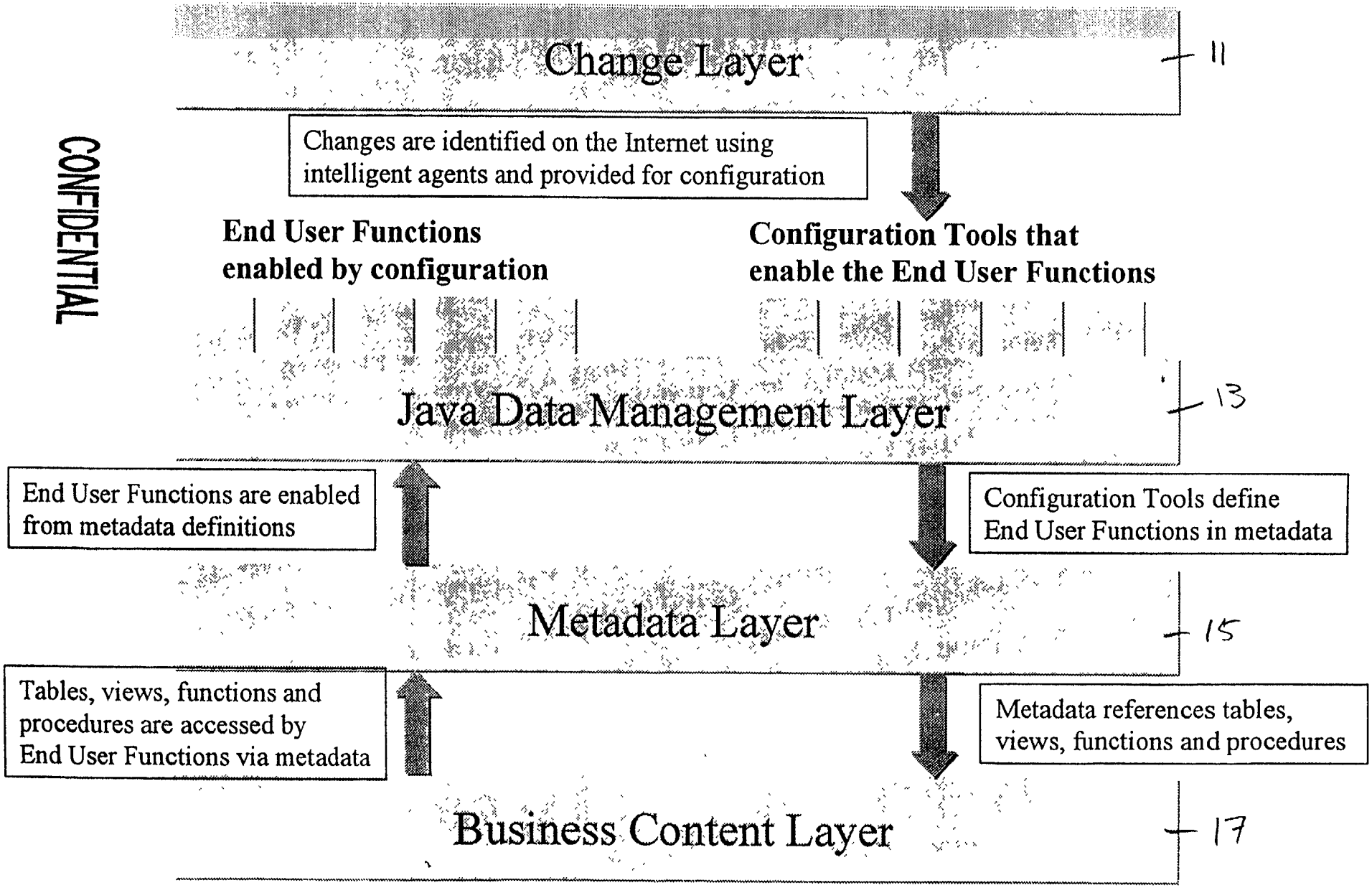

FIG 1

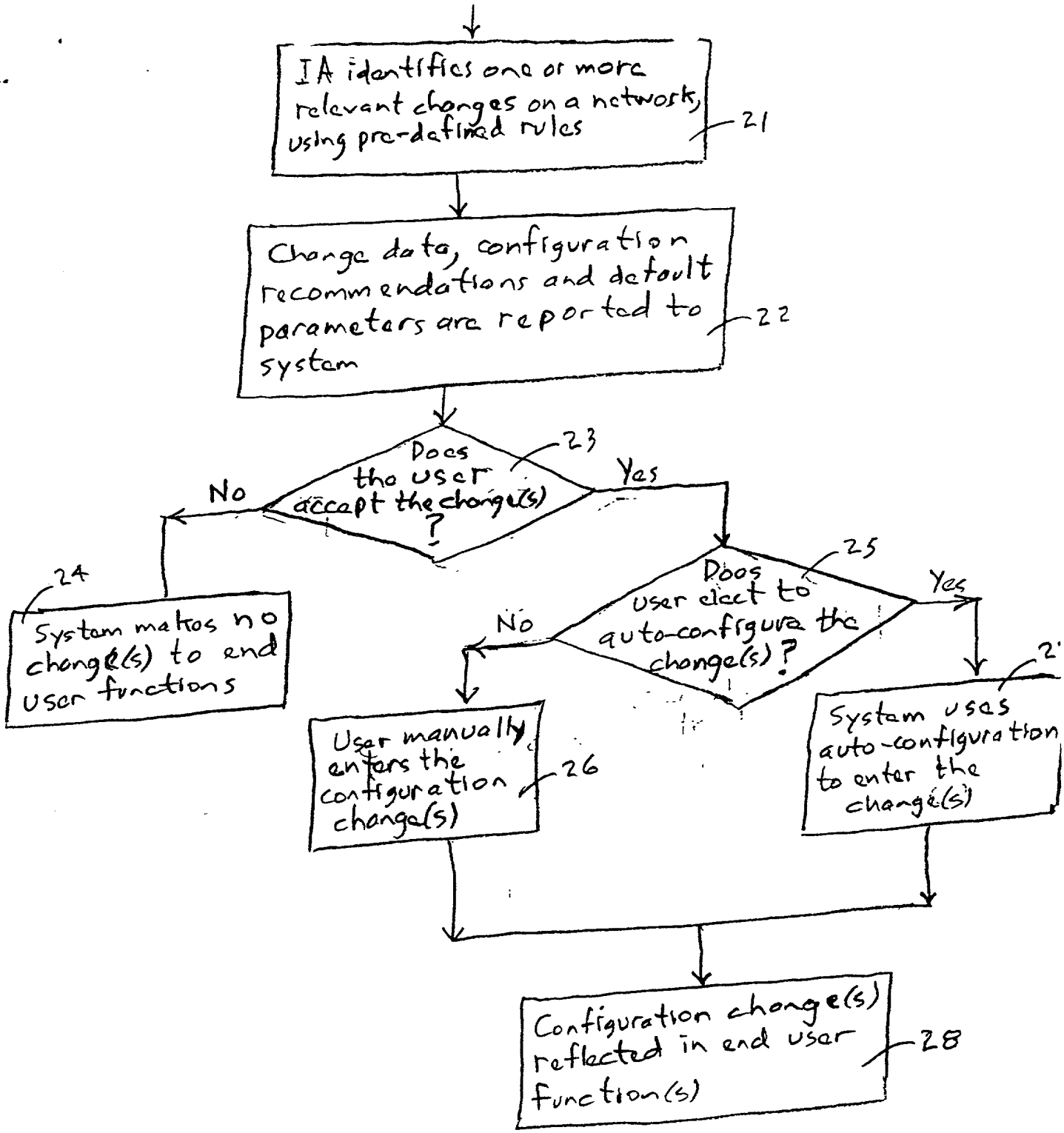

FIG. 2

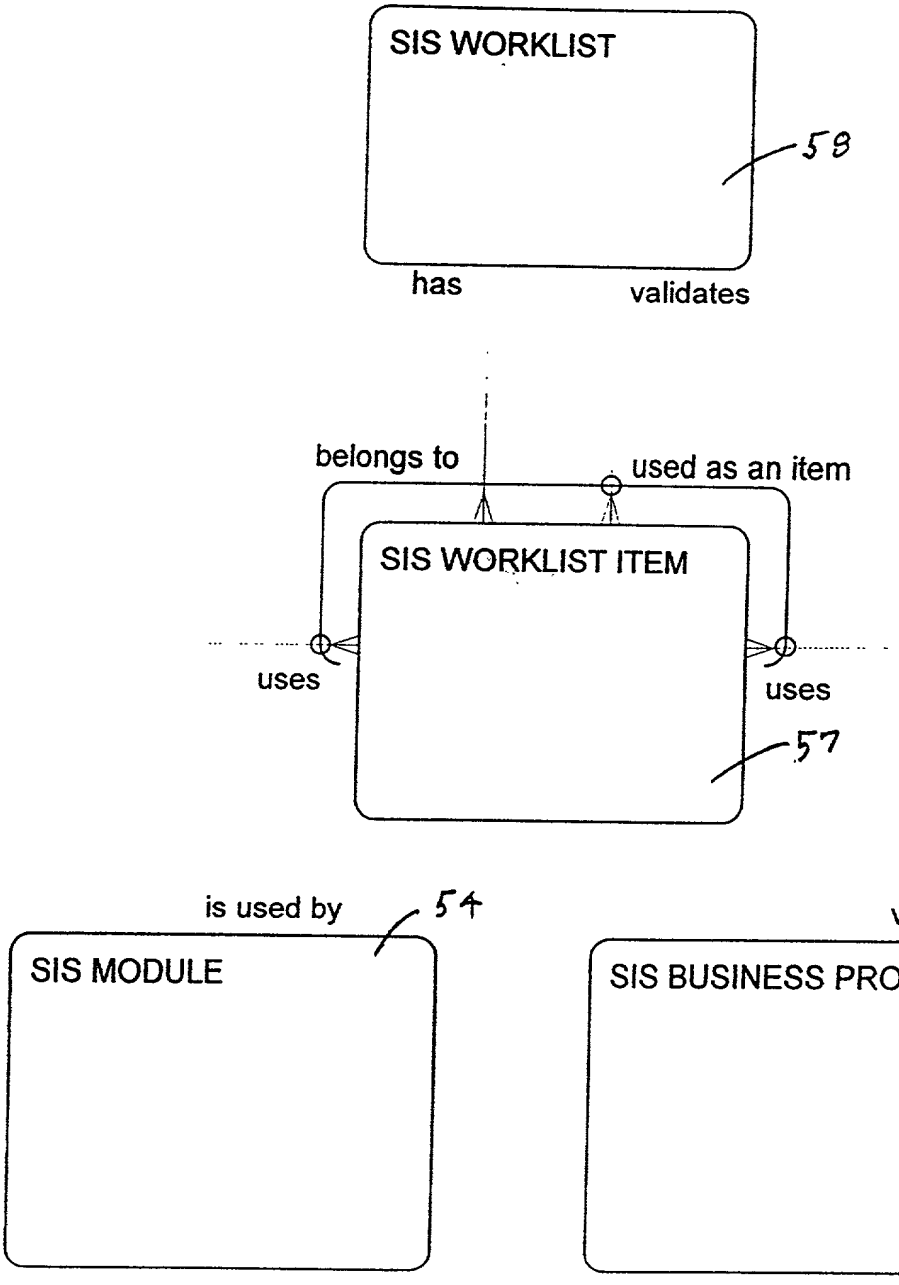

FIG. 3

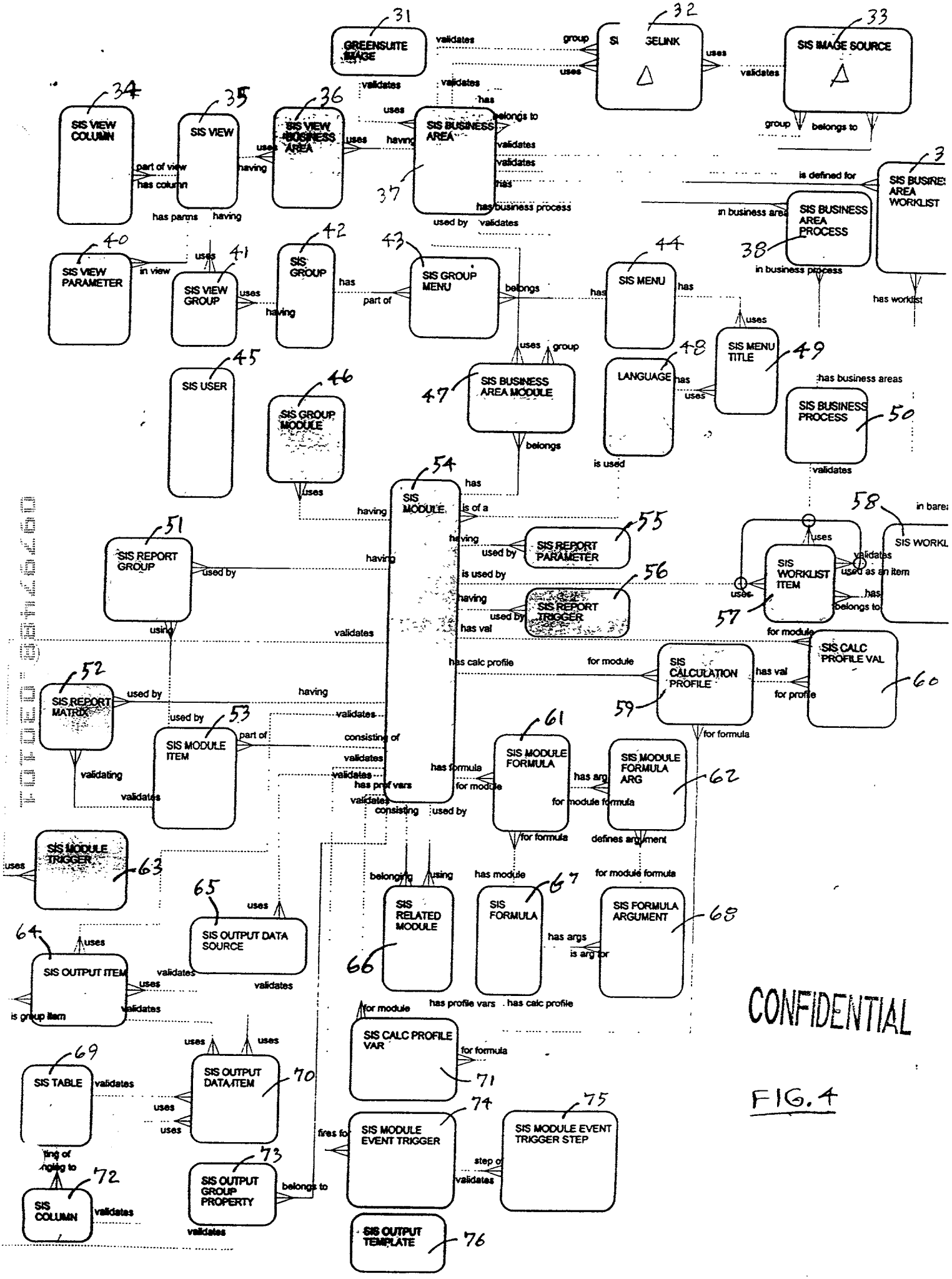

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FIG. 4

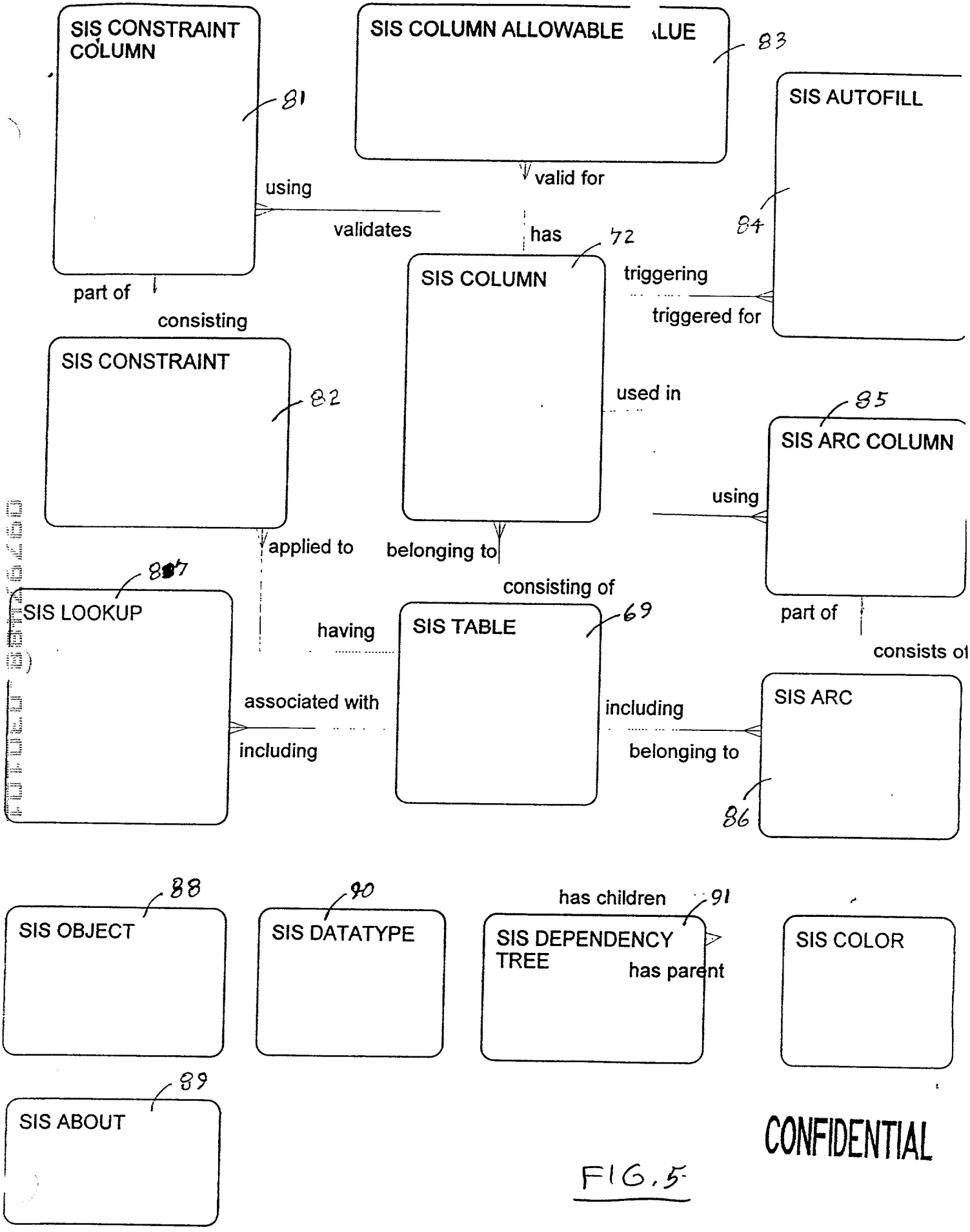

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FIG. 5

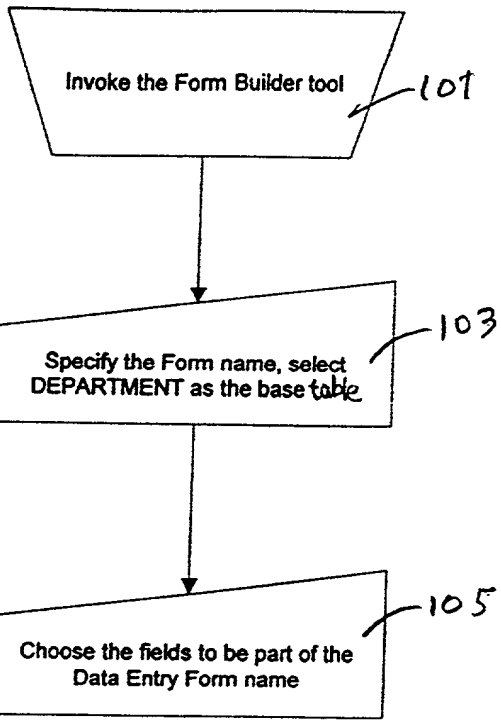

FIG.6

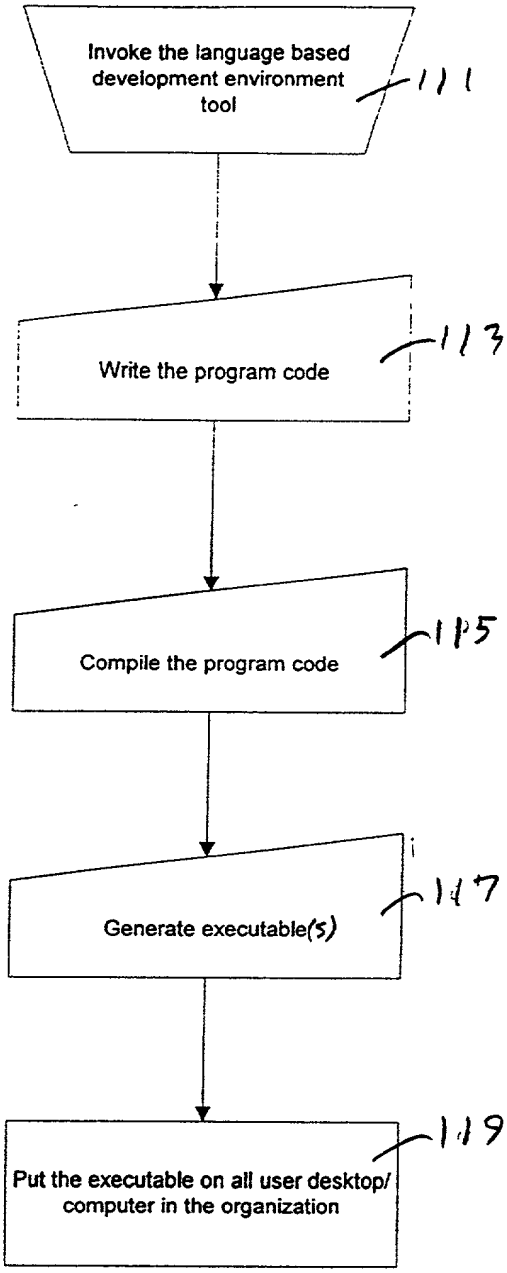

FIG. 7

Change Agent Management Unit Main Menu

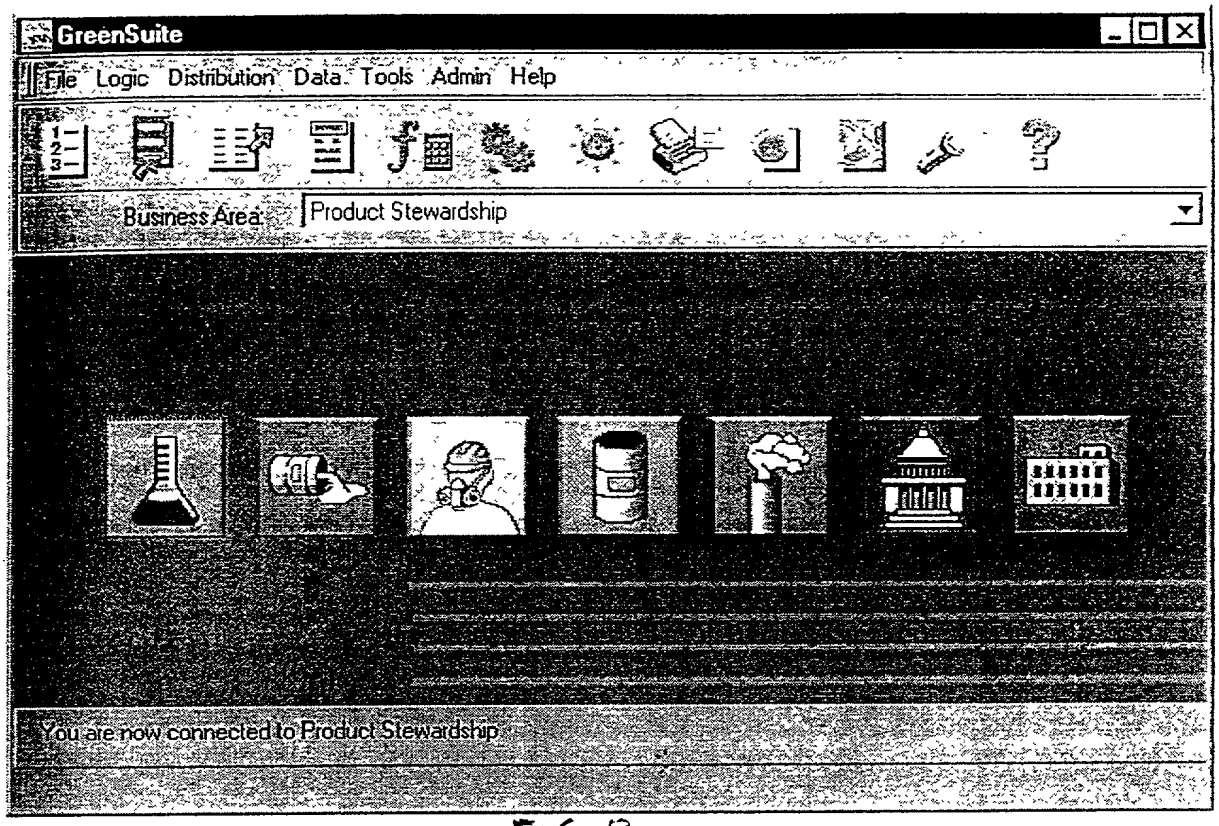

FIG. 8

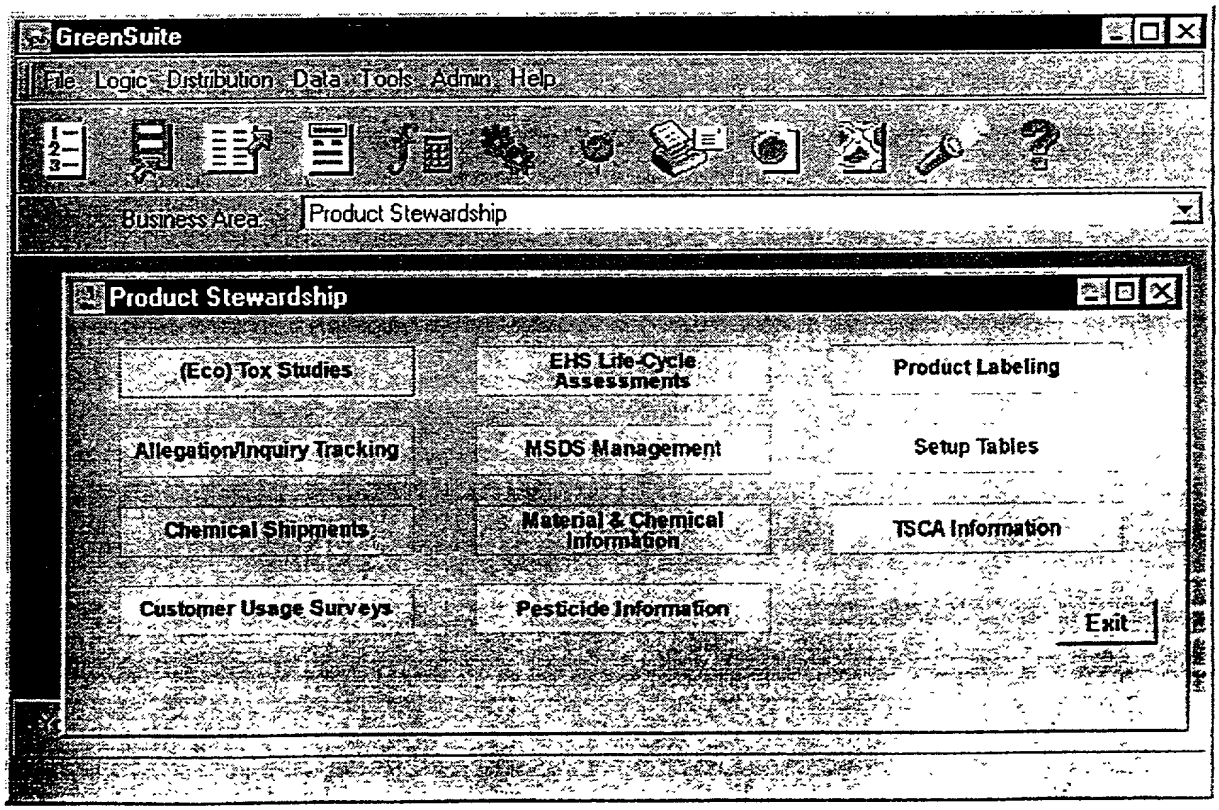

FIG. 9

WorkList and Set Up WorkList

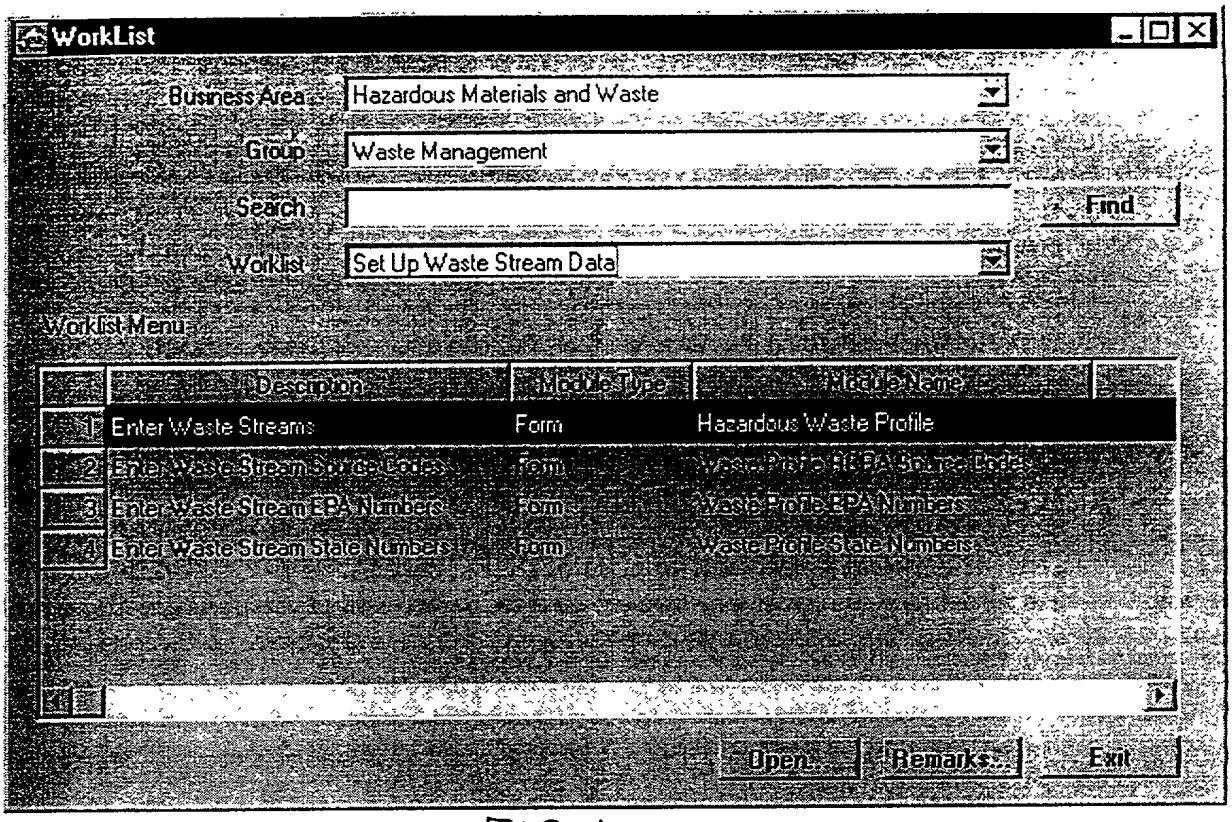

FIG. 10

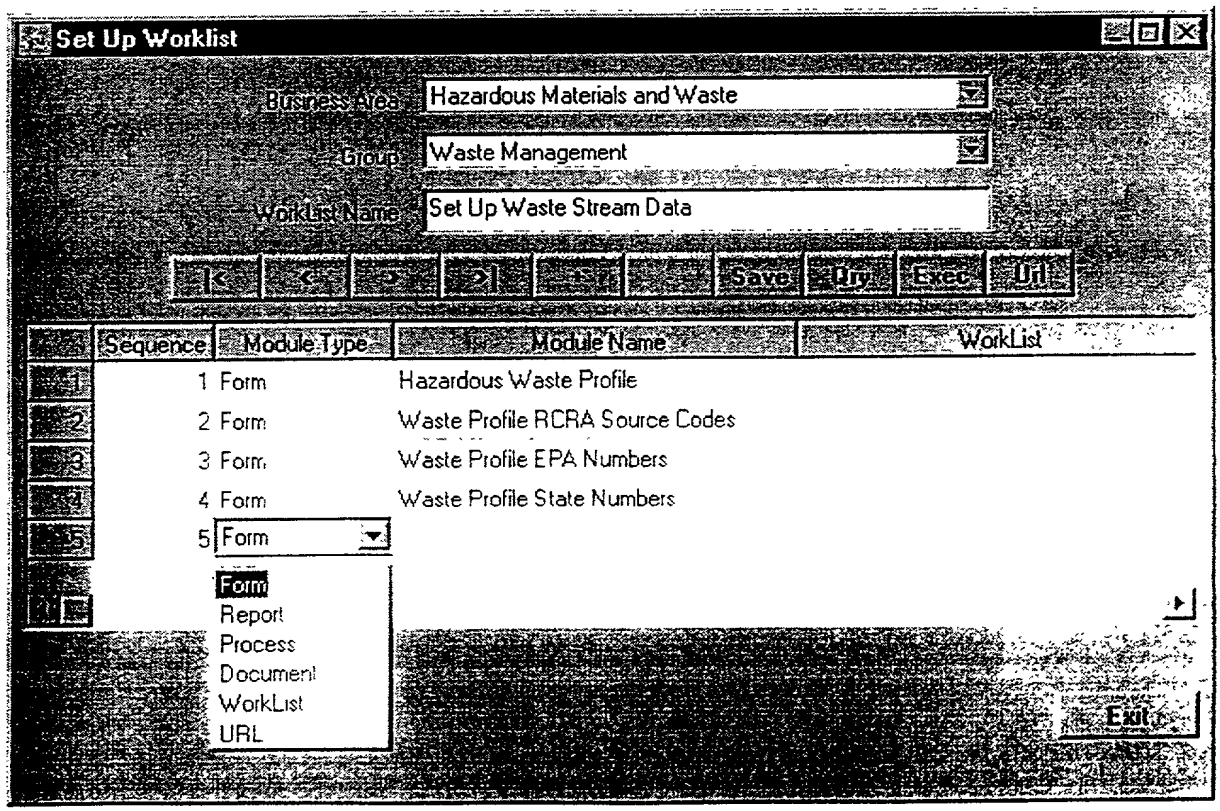

FIG. 11

Data Entry Form and Edit Form

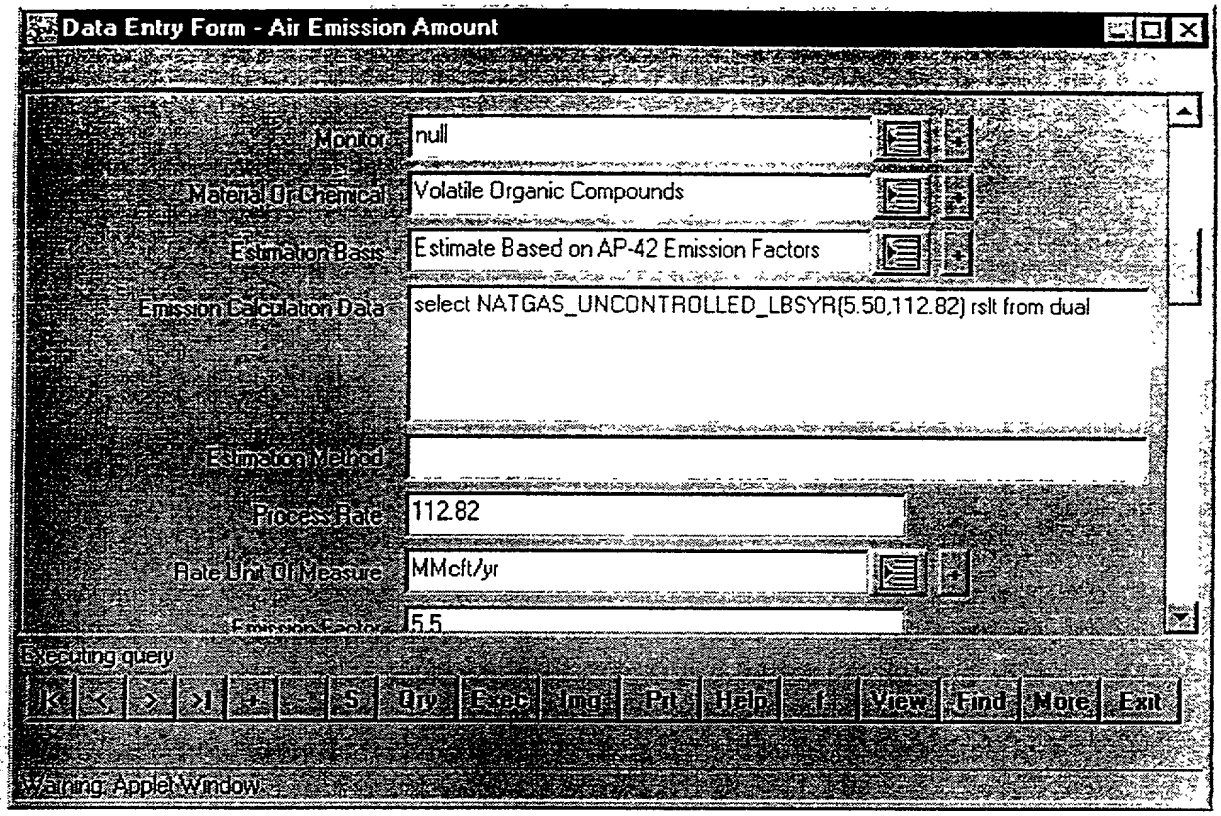

FIG.12

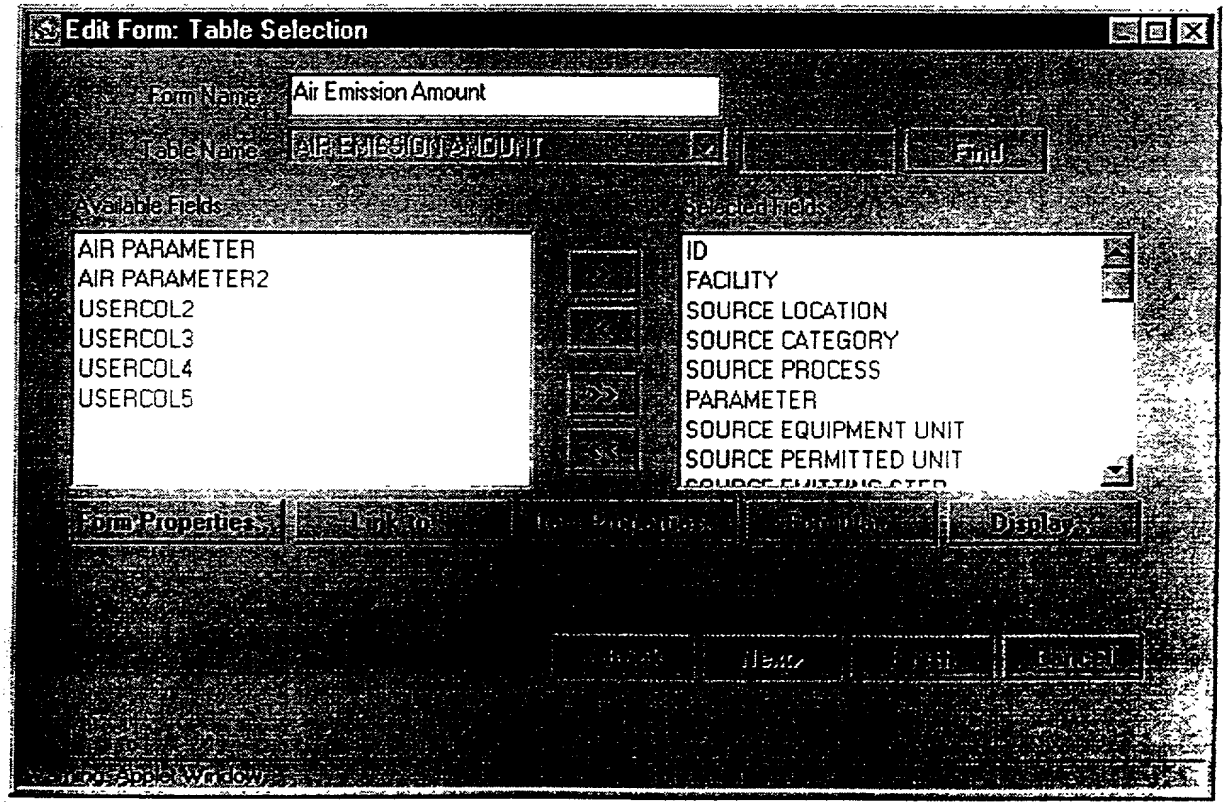

FIG.13

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Report and Report Builder

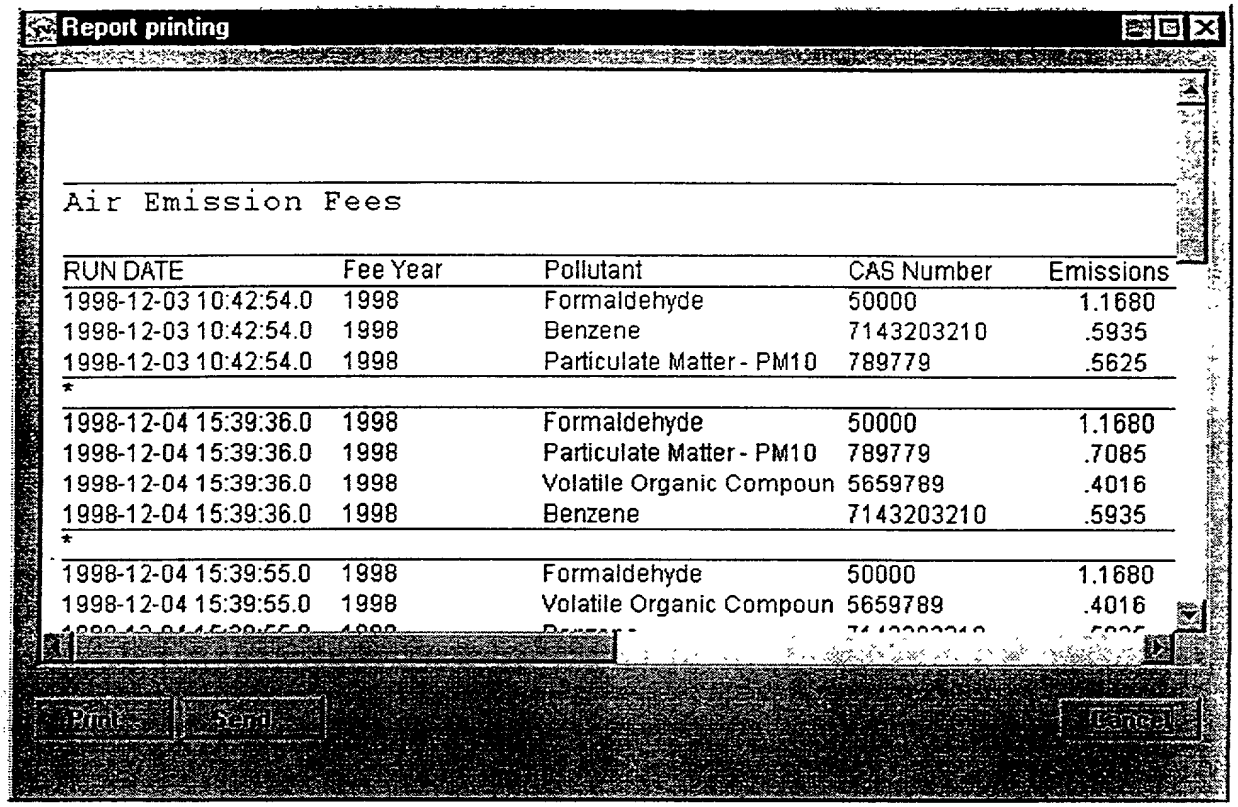

FIG. 14

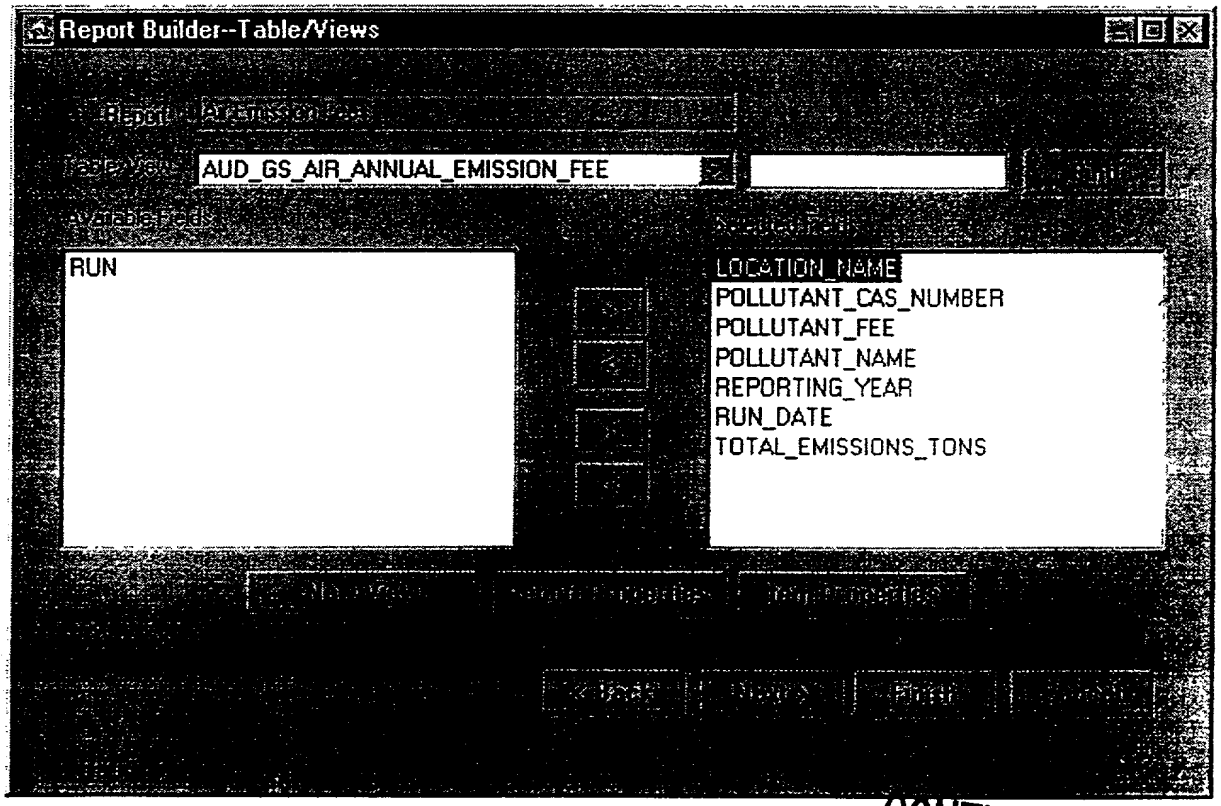

FIG. 15

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Run Process Results and Advanced Query Builder

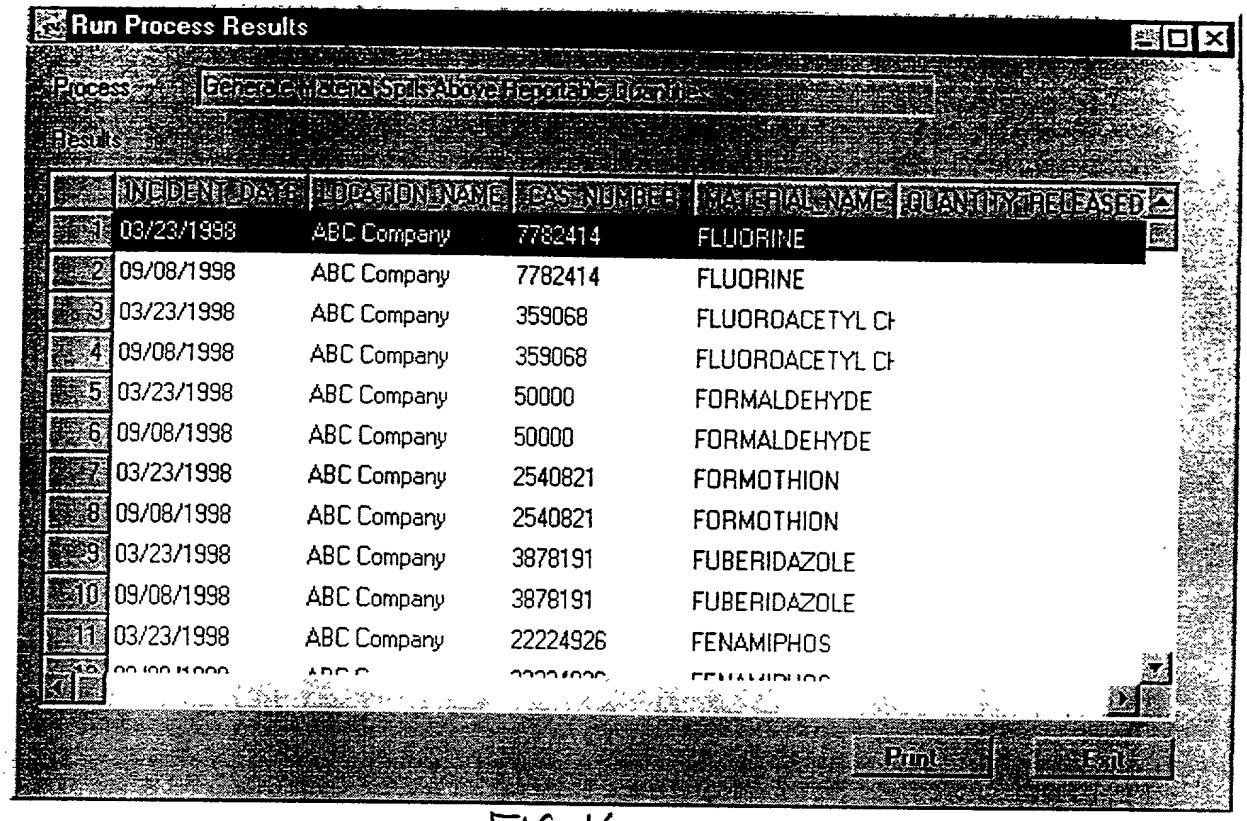

FIG. 16

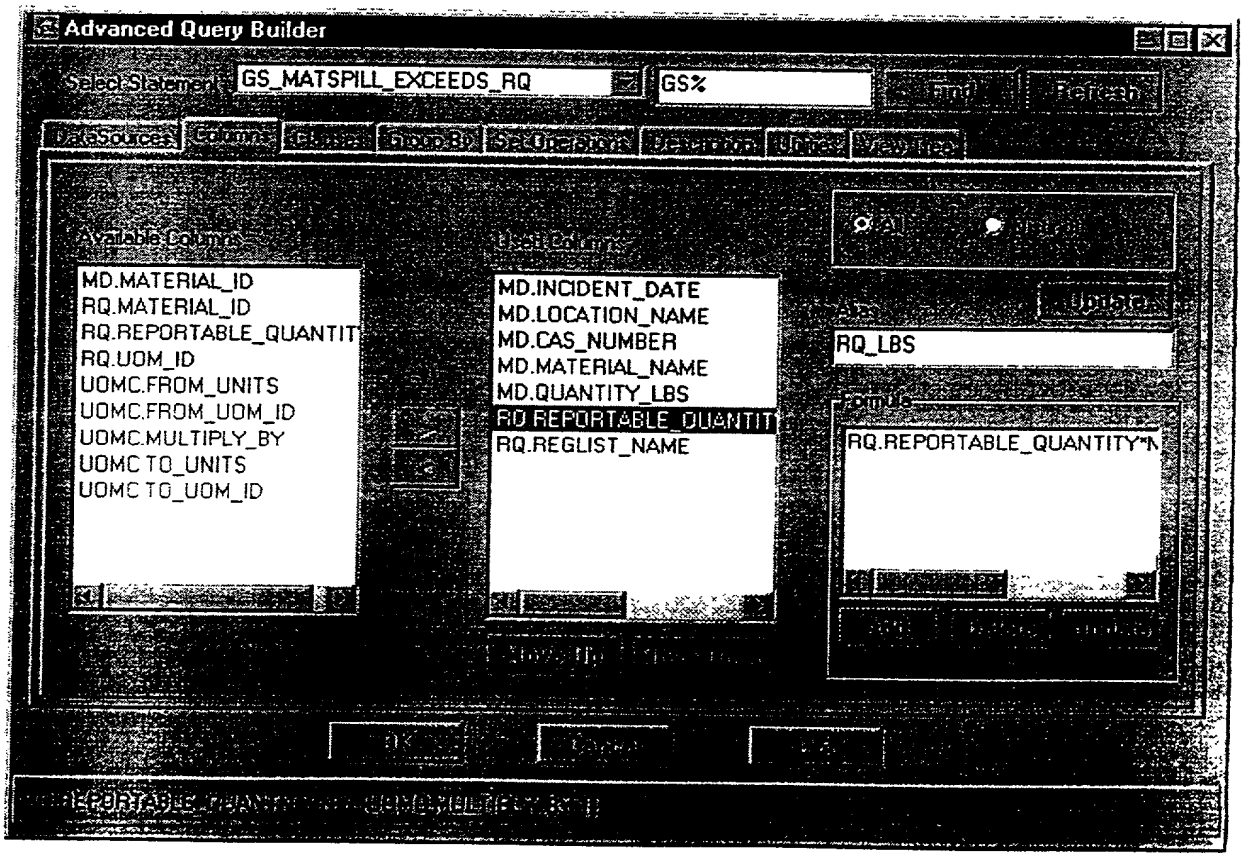

FIG. 17

Document and Document Builder

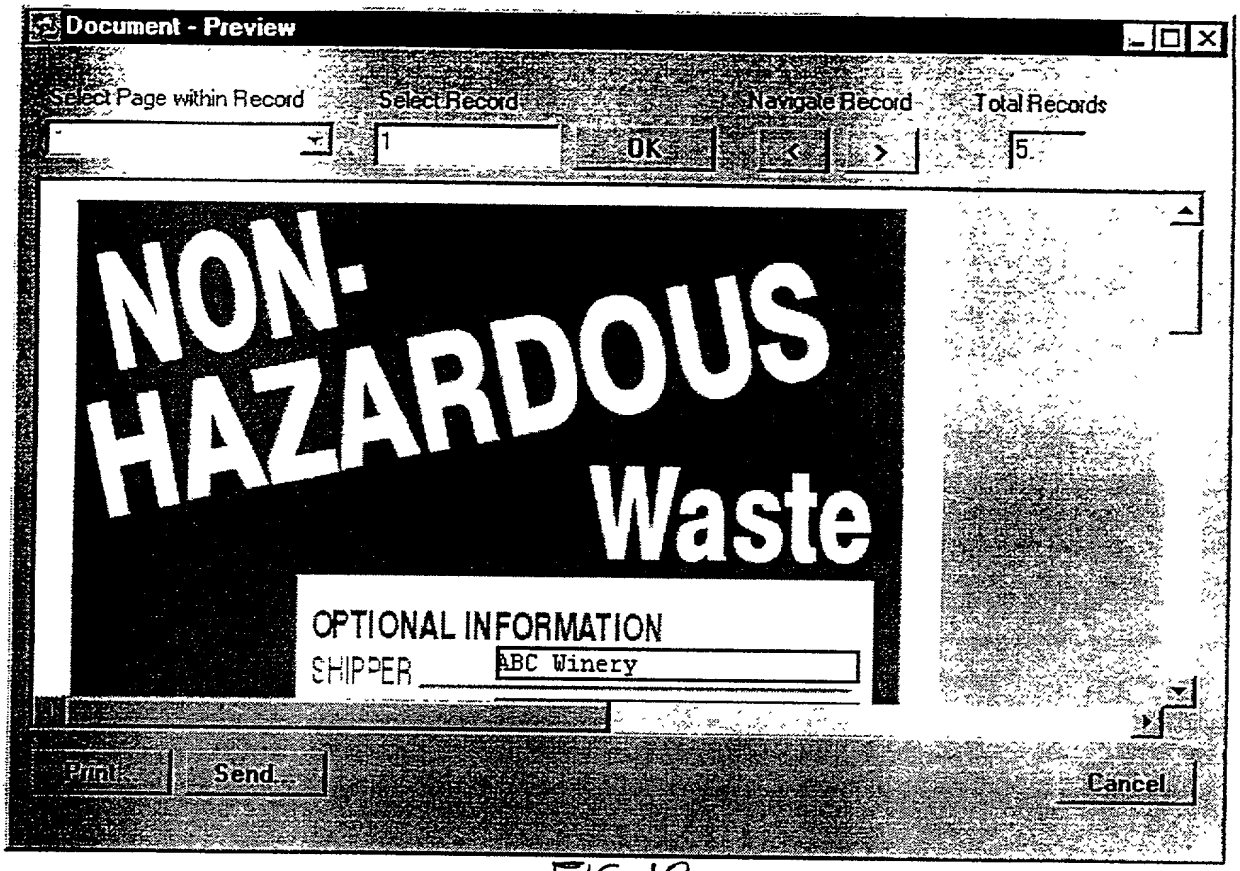

FIG. 19

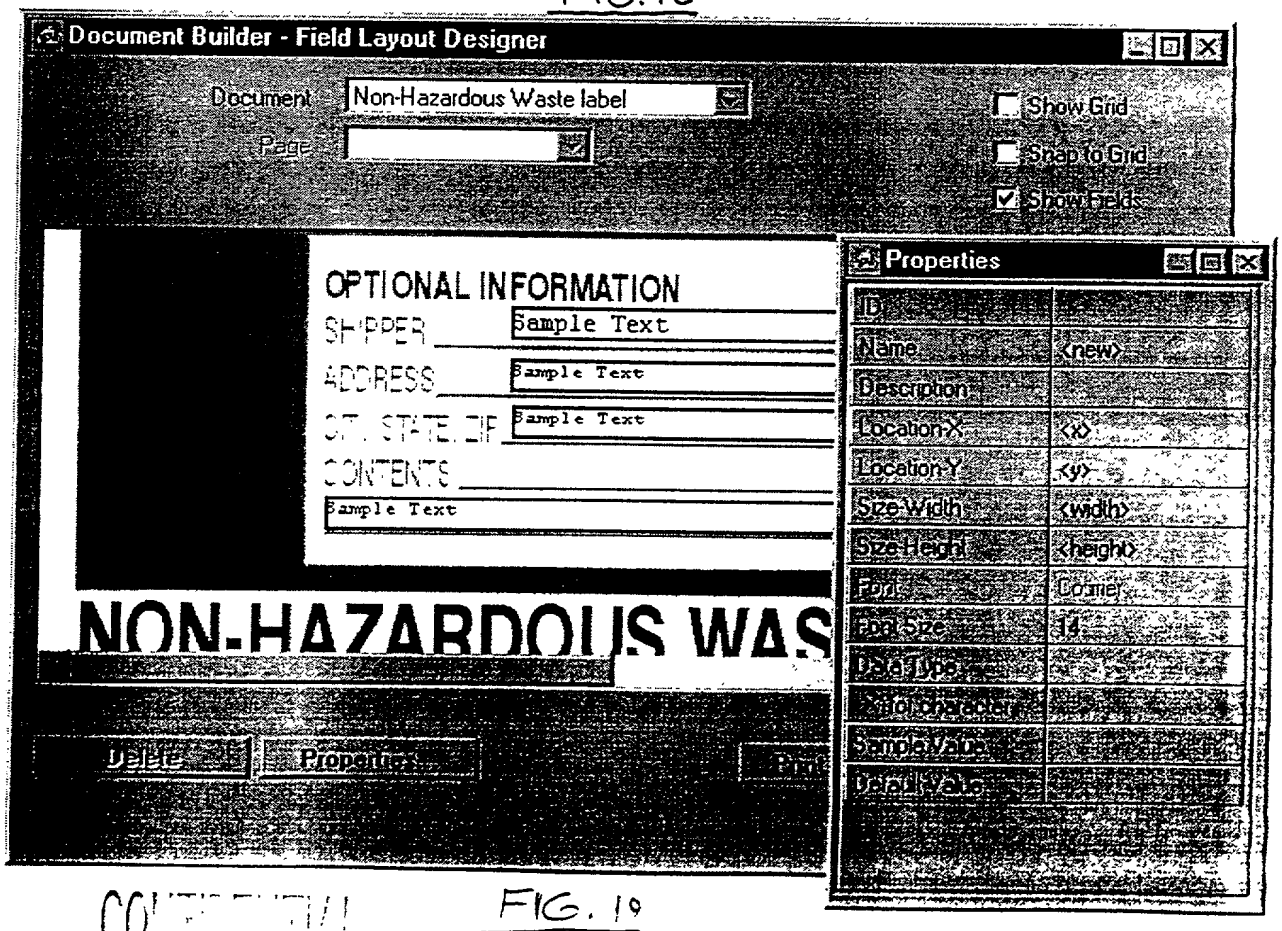

FIG. 19

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Anthony T. Sziklai et al.		
Serial No.	09/215,898	Group Art Unit:	Unknown
Filed:	December 18, 1998	Examiner:	Unknown
Title:	INTEGRATED CHANGE MANAGEMENT UNIT		

* * *

REVOCATION OF PRIOR POWER OF ATTORNEY AND
NEW POWER OF ATTORNEY

Hon. Commissioner of Patents and Trademarks
Washington, DC 20231

Sir:

The undersigned hereby revokes all previous and prior Powers of Attorney in the above-entitled matter and hereby executes the following new Power of Attorney.

NEW POWER OF ATTORNEY

Applicant hereby appoints Barry N. Young (Reg. No. 27,774); Timothy W. Lohse (Reg. No. 35,255); Stephen E. Reiter (Reg. No. 31,192); Steven R. Sprinkle (Reg. No. 40,825); William N. Hulsey III (Reg. No. 33,402); Terrance A. Meador (Reg. No. 30,298); Ramsey R. Stewart (Reg. No. 38,322); June M. Learn (Reg. No. 31,238); John Oskorep (Reg. No. 41,234); Timothy N. Ellis (Reg. No. 41,734); David R. Stevens (Reg. No. 38,626); Wayne P. Sobon (Reg. No. 32,438); William G. Goldman (Reg. No. 42,590); Derek J. Westberg (Reg. No. 40,872); Sheila Kirschenbaum (Reg. No. 44,835); Travis L. Dodd (Reg. No. 42,491); Charles D. Gavrilovich, Jr. (Reg. No. 41,031); Gerald W. Maliszewski (Reg. No. 38054); Hayward A. Verdun (Reg. No. 43,223); Armando Pastrana, Jr. (Reg. No. 44,997) as attorneys/agents with full power of substitution and revocation to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Please address all future communications regarding this application to:

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Palo Alto, CA 94304

Please direct all telephone calls to Barry N. Young at (650) 320-7439.

Dated February 25th, 2000

Douglas H. Sturgeon, President
Alternative Systems, Inc.

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WASHINGTON, D.C. 20231
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Bib Data Sheet

CONFIRMATION NO. 4851

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/797,488	03/01/2001 RULE	705	2161	104632-991101

APPLICANTS

Richard Frankland, San Jose, CA;
Chistopher M. Mitchell, El Granada, CA;
Joseph D. Ferguson, Santa Clara, CA;
Anthony T. Sziklai, Half Moon Bay, CA;
Ashish K. Verma, Foster City, CA;
Judith E. Popowski, Half Moon Bay, CA;
Douglas H. Sturgeon, San Mateo, CA;

**** CONTINUING DATA ***************************

THIS APPLICATION IS A CON OF 09/215,898 12/18/1998 ABN

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

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
** 03/29/2001

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed	☐ yes ☐ no	CA	13	154	9
35 USC 119 (a-d) conditions met	☐ yes ☐ no ☐ Met after Allowance				
Verified and Acknowledged	Examiner's Signature Initials				

ADDRESS

Gray Cary Ware & Freidenrich LLP
3340 Hillview Avenue
Palo Alto ,CA 94304-1203

#26379

TITLE

Integrated change management unit

FILING FEE RECEIVED		
1866	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

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2000

Application or Docket Number: 104632-991100

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	154	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	154 minus 20=	* 134
INDEPENDENT CLAIMS	9 minus 3 =	* 6
MULTIPLE DEPENDENT CLAIM PRESENT		☐

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

SMALL ENTITY TYPE ☐ OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	355.00	OR	BASIC FEE	710.00
X$ 9=	1206.00	OR	X$18=	
X40=	240.00	OR	X80=	
+135=		OR	+270=	
TOTAL	1801.00	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

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

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

03/08/2001 EMAILU 00000031 09797488

01 FC:201 355.00 OP
02 FC:202 240.00 OP
03 FC:203 1206.00 OP

PTO-1556
(5/87)

*U.S. GPO: 2000-468-987/39595

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET

(FOR USE WITH FORM PTO-875)

SERIAL NO. 09/797,488

FILING DATE 03-01-01

APPLICANT(S)

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
01		1				
02		1				
03		1				
04		1				
05		1				
06		1				
07		1				
08		1				
09	1					
10		1				
11		1				
12		1				
13		1				
14		1				
15		1				
16		1				
17		1				
18		1				
19		1				
20		1				
21		1				
22		1				
23		1				
24		1				
25		1				
26		1				
27		1				
28	1					
29		1				
30		1				
31		1				
32		1				
33		1				
34		1				
35		1				
36		1				
37		1				
38	1					
39		1				
40		1				
41		1				
42		1				
43		1				
44		1				
45		1				
46		1				
47	1					
48		1				
49		1				
50		1				
TOTAL IND.	9	↓		↓		↓
TOTAL DEP.	145					
TOTAL CLAIMS	154					

	*		*		*	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
51		1				
52		1				
53		1				
54		1				
55		1				
56						
57						
58						
59						
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87						
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89						
90						
91						
92						
93						
94						
95						
96						
97						
98						
99						
100						
TOTAL IND.		↓		↓		↓
TOTAL DEP.						
TOTAL CLAIMS						

* *MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS*

FORM PTO-1360 (REV. 3-78)

U.S.DEPARTMENT OF COMMERCE
Patent and Trademark Office

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET
(FOR USE WITH FORM PTO-875)

SERIAL NO. 09797488

FILING DATE 03-01-01

APPLICANT(S)

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
1						
2	/					
3		/				
4		/				
5		/				
6		/				
7		/				
8		/				
9		/				
10		/				
11		/				
12		/				
13		/				
14		/				
15		/				
16		/				
17		/				
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41		/				
42		/				
43		/				
44		/				
45		/				
46	/					
47		/				
48		/				
49		/				
50		/				
TOTAL IND.						
TOTAL DEP.						
TOTAL CLAIMS						

	*		*		*	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
51		/				
52		/				
53		/				
54		/				
55		/				
56		/				
57		/				
58		/				
59		/				
60		/				
61		/				
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89		/				
90		/				
91		/				
92		/				
93		/				
94		/				
95		/				
96		/				
97		/				
98		/				
99		/				
100		/				
TOTAL IND.						
TOTAL DEP.						
TOTAL CLAIMS						

* *MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS*

FORM PTO-1360 (REV. 3-78)

U.S.DEPARTMENT OF COMMERCE
Patent and Trademark Office